

The Effects of Written Teacher Feedback on the Academic Achievement of Fifth-Grade Students With Learning Challenges

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Teacher feedback is an important aspect of any classroom. However, because of the increasing demands on teachers' time, the delivery of feedback to students has been reduced. The author investigated the types and necessity of teacher feedback for students with learning challenges. The method for analysis was in the form of written teacher feedback. The author gave 22 5th-grade students from an urban school 5 sentences to rewrite and correctly punctuate and capitalize. The author concluded that written teacher feedback did not harm students' self-esteem, but rather it positively affected student performance. Results are consistent with earlier studies on the necessity for feedback and the influence of feedback on the self-esteem of students with learning disabilities.

Keywords: effects, feedback, teacher feedback, written feedback

The typical day of one urban elementary school teacher in the southeast region of the United States can be described as a whirlwind. From the moment teachers arrive in the morning until the end of the school day, they are striving to fulfill the demands on their time from various stakeholders. In recent years, it has become common for teachers to squeeze in additional training before the morning bell. Conferences with parents or guardians concerning students can be scheduled for the early morning or late afternoon, and occasionally a parent or guardian arrives without appointment to discuss his or her child's progress. Individualized educational plan meetings are often scheduled during teacher planning periods at the convenience of the parents or guardians and other team members. The actual art of teaching students is quickly becoming secondary to other responsibilities that have been placed on the teacher.

In the research report, *Status of the American Public School Teacher, 2000–2001*, the National Education Association (NEA; 2003) sought to identify the average workday required for teachers. The NEA noted that three regions of the United States (Southeast, Middle, and West) averaged 37.5 hr per work week. The Northeast had slightly fewer hours, with an average of 35 hr per work week. In addition, the NEA reported that teachers spent an average of 10 hr beyond the required work week on other related activities such as lesson planning and grading papers. However, it

should be noted that at least 25% of the respondent teachers spent 16 or more hr on noncompensated school-related activities, as illustrated in Table 29 of the NEA report. Further, in response to the survey question relating to what teachers felt prevented them from teaching to the best of their ability, 15.7% of the teachers indicated that it was the mounting paperwork, abundant required meetings, additional nonclassroom responsibilities, and the overall workload placed on teachers, and the U.S. Southeast reported the highest percentage (NEA). For this reason, it is important to note the effect this has on students and their ability to develop academically.

It has been typically expected that when a student completes an assignment and turns it in to the teacher, it would be graded within a reasonable length of time and returned to the student. It is not uncommon for the teacher to add a mini note (e.g., "Good job!") to the percentage or number of correct answers. However, because of the increased demands on the teacher's workload, this is not always the case. Teachers have been modifying the way students receive feedback on academic work. At this point, it is necessary to determine whether these feedback modifications have adverse consequences on fifth-grade students with learning disabilities.

Types of teacher feedback

Teacher feedback is fundamental to student academic achievement. Bangert-Drowns, Kulik, Kulik, and Morgan (1991) asserted that learning should be considered a

process of mutual influence between the learner and the educator. Bangert-Drowns et al. maintained that the design of the feedback affects student learning. For example, is the feedback intentional or simply incidental normal classroom interactions? Intentional feedback lets the student know whether the response was correct or appropriate. According to Bangert-Drowns et al., this type of feedback is normally found in instructional settings. Typically, intentional feedback is a “direct interpersonal action between the teacher and students” (Bangert-Drowns et al., p. 215). Therefore, they believed it to be what teachers are normally providing in the classroom. One of the purposes of intentional feedback is to let the students know whether they have responded correctly to the exercise at hand. In contrast, incidental feedback may only be relative to the natural consequence of interactions in the classroom (Bangert-Drowns et al.). Therefore, it is necessary to identify some of the various types of teacher feedback and the implications of this feedback on student learning.

Verbal feedback

One trend in the classroom is to provide students with verbal feedback. Verbal feedback is immediate and does not require more than a few seconds of the teacher’s time or attention. The difficulty of verbal feedback is making it sound sincere rather than mechanical. For example, “Good job!” or “Nice going!” may not have the same effect if it is constantly said to every other student in the room. Verbal feedback may consist of brief remarks (e.g., “Good thinking; that was a hard one”) indicating that the correct answer was given. According to Bangert-Drowns et al. (1991), when this was the only type of feedback, students did not retain the information. However, Bangert-Drowns et al. noted that an incorrect answer that was corrected during instructional time was most likely to be answered correctly later.

Written feedback

The contrast to verbal feedback is written feedback. This type requires more of the teacher’s attention and time. The purpose of written feedback is to let students know that they have successfully retrieved information about the concept that has been taught up to a specific point. It also provides students with the opportunity to correct errors on their own (Kulhavy, 1977). Kulhavy believed that having the ability to correct one’s errors would produce the maximum effect in gaining knowledge. Another interesting point about written feedback was addressed in Matsumura, Patthey-Chavez, Valdes, and Garnier’s (2002) study on third-grade students in eight schools. Four of the schools represented middle-class students, and four represented lower SES students. Students from the SES schools

received more written feedback about the content of their writings. Matsumura et al. reported that teachers’ providing of written feedback directly on the draft of a student’s writing assignment represented the “knowledge construction between an expert and a novice” (p. 8). In other words, the teacher models writing for the student. By providing written feedback in this manner, students produced better revisions. Matsumura et al. noted that those students with “less specific comments” (p. 6) were not as productive. It is particularly important to note that Matsumura et al. observed that the quality of the teachers’ feedback affected student performance. In their study, they noticed that an emphasis on surface-level corrections such as grammar and punctuation helped decrease writing convention errors. Remarkably, there was little improvement in the content of the writings. This proved true even in the SES schools whose students received more written feedback on content.

Corrective feedback

Another form of feedback is corrective feedback. According to Lysakowski and Walberg (1982), this type of feedback can be oral or written. It should be performed with frequency to the point that it does not disrupt the natural flow of learning. Lysakowski and Walberg divided corrective feedback into three major principles. First, they believed that students should not waste time by continuously completing work with incorrect answers. Second, a teacher’s time is more effectively used by correcting misconceptions. Last, students should be required to master a unit of study before advancing to the next unit of study.

Application of corrective feedback involves testing student comprehension by using verbal questioning techniques. By using open-ended questions, a teacher can gently probe the level of comprehension the student possesses. Ehrlich and Zoltek (2006) suggested the use of “praise (e.g., ‘You’re on the right track’), reason (e.g., ‘No, and this is why’), and further probing (e.g., ‘No, can anyone think of a way to make that answer true?’)” (p. 8). In each of the aforementioned examples, the student understands that although his or her answer may not have been correct, there was a key element that could be built on with further thought (Ehrlich & Zoltek). In this manner, although the teacher corrects the student, the student is also being praised while given an opportunity to reason beyond the initial response. Therefore, this particular form of feedback leads to deeper academic understanding. This form of feedback can also be given using written responses to student work (Lysakowski & Walberg, 1982). Thus, corrective feedback can be implemented in verbal or written form.

Effects of feedback on self-esteem

One concern of professionals in education has been whether feedback—verbal or written—lowers a student’s

self-esteem. Any type of teacher feedback may be viewed as being critical of a student's efforts. As a result, this view of teacher feedback may indicate the potential to adversely affect students' self-esteem. However, critical feedback to improve a student's work provides a framework based on factual knowledge. This type of constructive feedback would not leave students with a false sense of self-esteem (Ehrlich & Zoltek, 2006, p. 10). However, the discussion so far has only addressed general education students.

Self-esteem is an issue that concerns professionals who work with special education students. How would teacher feedback affect them? Heath and Glen (2005) explained that children with learning disorders perceive that they are as smart as general education students. Several factors may explain their unrealistic opinions. One such factor is that they misconstrue their academic abilities by basing their estimate of themselves on how much effort they put into an assignment.

In a study of 84 third-grade students, 42 were identified as having significant learning disabilities, and 42 were considered to be normally achieving. Bear and Minke (1996) suggested that the learning environment could be a noteworthy cause of high self-esteem. Bear and Minke suggested that the development lag and the special education setting were factors contributing to overall feelings of self-worth. They specifically noted the positive feedback received from the teacher. Bear and Minke also suggested that favorable feedback served to impress on the children with learning disabilities that they were progressing academically despite how their scores compared with those of normally achieving students. Bear and Minke concluded that the low teacher-student ratio, in conjunction with the constant positive feedback from the teacher, influenced students' self-esteem.

Consideration needs to be given to students who are diagnosed as both being gifted and having learning disabilities. These students may not receive necessary services for both diagnoses. For that reason, feedback from the teacher plays an integral role in the learning process. With continual practice and teacher feedback, these students will continue to build self-esteem and acquire necessary academic skills (Bisland, 2004).

Retention and transfer of concepts

Beyond the issue of self-esteem, does teacher feedback increase a student's ability to retain the information learned and transfer it to other concepts? The ability of a student to retain and transfer conceptual thinking is many teachers' goal. Kulhavy (1977) put to rest the myth that teacher feedback is "nothing more than positive reinforcement" (p. 213). For example, students learning to master reading are often provided feedback during the process of oral reading. By immediately correcting reading errors, the student can retain the information learned because of being repeatedly

exposed to the correct answer, thereby presenting a form of mastery (Brosvic, Dihoff, Epstein, & Cook, 2006). Teachers confirming right answers to students are purportedly providing positive reinforcement. Yet, this is an inconclusive assumption in the strictest sense of the behaviorist theory (Kulhavy).

Teacher feedback can facilitate the acquisition and retention of new information (Brosvic et al., 2006). The question that needs to be answered is "What type of teacher feedback will be most effective?" The literature has indicated that several types of teacher feedback have been researched. Two types of teacher feedback that have garnered the attention of researchers are immediate feedback and delayed feedback.

Immediate feedback

Brosvic et al. (2006) conducted a study with 40 third-grade students in an urban elementary school who were classified with learning disabilities in mathematics on the basis of psychoeducational testing. In addition, a control group with similar demographics was classified as normal achievers mathematically, as determined by the same psychoeducational tests. The purpose of their study was to determine whether immediate feedback would improve the acquisition of Mathematics Facts 0–9 for the four basic mathematical computations.

For the purpose of Brosvic et al.'s (2006) study, immediate feedback was in the form of verbal cues (as in the case of correction given during oral readings) or in the form of a scratch-off answer sheet for multiple-choice questions (as in a test-taking environment). Regarding this type of feedback, they concluded that learners will use the corrected responses as they continue their studies. This conclusion held true for students who were classified with learning disabilities and general education students (Brosvic et al.). Brosvic et al. were able to replicate and extend the test results for a total of 25 sessions.

Delayed feedback

Delayed feedback may include answers provided directly after a test has been given. In the common classroom environment, delayed feedback can be represented as work that is graded within 24 hr or possibly even longer after being turned in (Dihoff, Brosvic, & Epstein, 2003). Kulhavy (1977) indicated that a delay in feedback could also produce good retention skills. His interpretation was that the student would typically forget the wrong answer after a test. This theory was confirmed in Kulhavy's research when he realized that as a student tried to recall the original answer while in the process of accepting corrective feedback, the student was unable to do so. Kulik and Kulik (1988) explained this as the "interference-preservation theory"

(p. 80). The postulate is that the original answer is forgotten during the delay and therefore does not get in the way of learning the correct information. Kulik and Kulik further concluded that in that case, "delayed feedback is reliably superior to immediate feedback, particularly when measured by delayed retention" (p. 80).

Transference of knowledge

Immediate or delayed feedback helps students with retaining information learned, but does it account for students' ability to transfer the concept beyond the testing environment? Schroth (1995) conducted two experiments to test the hypotheses concerning transference of concept. The insight gained through these experiments was that delaying feedback typically slowed down the acquisition of concepts. However, delayed feedback aided in the transference of concepts. In a separate study, Schroth (1997) wanted to determine whether the frequency of feedback would affect the transference of new concepts. In that study, he again confirmed that with lower rates of feedback, the ability of students to acquire new concepts was hindered. Nevertheless, both immediate and delayed feedback facilitated the transference of learning to similar tasks. Matsumura et al. (2002) confirmed that finding. The students who received delayed feedback responses from the teacher on writing assignment drafts showed a marked decrease in the number of errors in their final drafts.

Therefore, on the basis of the literature that I reviewed, it is apparent that feedback can play an integral role in the classroom. I observed that students in one urban school were not receiving consistent written feedback for the work they completed. I also observed that the number of completed assignments and the quality of the work had diminished since the beginning of the school year. Consequently, I embarked on this research project to determine whether fifth-grade students with learning disabilities would be motivated to complete assignments when written teacher feedback was administered in a predictable and timely manner. Another important aspect of this action research project was the influence of written feedback on the self-esteem of students with learning disabilities.

Method

Participants

Participants for this research project were fifth-grade students who were attending a Title I school in an urban city in the southeastern region of the United States. Over the past 3 years, the school had received a letter grade of C, which, according to the No Child Left Behind Act (NCLB; 2001), indicated no substantial academic improvement schoolwide. Writing scores for schoolwide fourth-grade students

were only 35% compared with the state average of 60% on the 2007 state-initiated standardized test.

Students participating in this study represented a general education classroom with special education inclusionary students. The students were equally divided between boys and girls. Classroom demographics comprised 4 students designated as requiring special education services, 2 students requiring gifted services, plus 16 general education students. Of the 16 general education students, 10 were identified as at risk because of ethnicity and SES, according to the school district's policy.

During the instructional time set aside for writing, several of the students were pulled out for various other services. Educators pulled out 2 students receiving exceptional student education (ESE) services for occupational therapy. General education students were also pulled out (4 students for violin instruction, twice weekly; 1 student for technology instruction). On average, 6 students were missing valuable instructional time in the area of writing. In addition, 10 of the 45 min scheduled for writing were lost to the schoolwide morning announcements. Other delays that encroached on the instructional period were caused by patrols and the late arrival of students from reading the morning announcements. One of the instructional implications is that students could only receive minimal instruction on effective writing skills and objectives during the 25 min of uninterrupted instructional time. Therefore, this time was wisely used to motivate students to incorporate conventional writing mechanics throughout their writing assignments. Typically, this is done by using verbal reminders at the beginning of the lesson.

Procedure

We observed through early writing assignments that many of the students still made punctuation and capitalization errors. This was the case even though basic writing conventions are taught as early as in the second grade. Furthermore, additional observations revealed that student work was not receiving any type of feedback, written or verbal, from the primary teacher. Therefore, it became apparent that some students were not completing the writing assignments at all. The goal of the intervention was to determine whether students could be motivated to not only complete the writing assignments, but to do so also with correct punctuation and capitalization when provided written feedback from the teacher. The study was conducted for 6 weeks. Two to three times per week, the intervention was supplied to the students.

Also, 5 min before the end of the instructional time for writing, students were handed half sheets of paper with five typed sentences that were missing capitalization and punctuation. This technique was in line with research that Cali (2008) conducted. Cali wrote that teaching writing mechanics in isolation from actual writing was ineffective. Students needed opportunities to apply the conventions of writing.

However, Cali suggested that introducing writing conventions too early in the process would “interfere with the student’s development of automaticity” (p. 3). Therefore, 5 min of the daily writing schedule were used to accomplish the intervention.

The experiment sentences were drafted from the fourth-grade *Language Arts Handbook* by Steck-Vaughn (Heyworth, 1999). Each sentence was presented to the students in all lower case characters. The sentences began with simple capitalization requirements (e.g., beginning of sentence) and progressed to more difficult capitalization and punctuation requirements (e.g., proper nouns). Students were asked to correctly copy the sentences below each sentence but to insert proper punctuation and capitalization. The first few sets of sentences only required the first letter of the sentence to be capitalized and the insertion of an ending punctuation (e.g., period). Each set of sentences carried a thematic story line such as school or a visit to the doctor. Therefore, student interest remained consistent throughout the experiment. In a few cases, the story line carried over from one intervention sheet to the next. This exercise was presented to the students three times per week for 6 weeks. The days of presentation were varied during the week to include as many students with varying exceptionalities as possible. At times, 1 student who received services from occupational therapy would take his sentences with him, thereby receiving extra assistance.

The goal was for each paper to be graded within 24 hr with written feedback from the teacher. Each paper was graded on the basis of the number of items to be capitalized and punctuated. Before the sentences were distributed, students were encouraged to do their best work. Once the sentences were distributed, the teacher would not answer questions about the content. The grading scale was based on smiley faces. Five earned smiley faces represented one mistake or no mistakes. Four earned smiley faces represented two mistakes. Three earned smiley faces represented three mistakes. Two earned smiley faces represented four mistakes. One earned smiley face represented five or more mistakes. Therefore, all students would earn at least one smiley face per session.

The smiley faces were tabulated on a class graph and listed by student. For simplicity, once a student had accumulated 10 smiley faces, these were exchanged for one blue smiley face on the graph. Papers that had been graded with

teacher written feedback indicating the number of incorrect answers and corrected capitalization or punctuation were returned to the student during the next school day. A graph displaying all of the student results was shown for approximately 2 min on the overhead projector during the transition between the end of instructional writing time and the beginning of the next instructional period.

When looking at the graph, students were encouraged to look only at their results and not at the results of others. Students were discouraged from comparing the number of smiley faces they had earned with those of other students. Generally speaking, only the general education students were interested in comparing scores. The students receiving special education services were content with their progress on the graph. Afterward, the graph was removed from the projector, and no further discussion was encouraged.

Data collection

I used four methods of data collection to examine the effectiveness of the intervention. The first source was my anecdotal notations. The second source of data was a sampling of completed sentences used in the trial. The third source of data was a student interview survey. The final data source was writing samples from students. These samples were not class assignments and are presented in the present article to show the transference of writing conventions.

Anecdotal data. The first source of data I collected was anecdotal notations that I composed at two separate points. At the beginning of the trial, I collected data from letters that the students wrote to a county official. I prompted the students to write about the things that they liked about county policies that affected them. Then the students were asked to address any grievances with county policies that pertained to them. In addition, at the midway point of the study, I examined another sampling of student writing. In both instances, I collected data on proper punctuation and capitalization. The data collected did not address any other writing conventions. Samples of these data are noted in Table 1 (initial point) and Table 2 (midway point).

Sentences data. The second source of data was a sampling of the completed experiment sentences that were given written teacher feedback, as noted in Figure 1. On the basis of

Table 1. Sampling of Anecdotal Notations Prior to Intervention

Student	Capitalization errors	Punctuation errors	Receiving services	Anecdotal notation
1	Yes	No	No	Improper capitalization of proper nouns
2	Yes	Yes	Yes	Capitalization errors; punctuation errors
3	Yes	No	No	Improper capitalization sentence beginning
4	Yes	Yes	Yes	Only “I” capitalized; punctuation errors
5	No	Yes	No	Missing sentence punctuation
6	No	Yes	No	Missing sentence punctuation

Table 2. Sampling of Anecdotal Notations Midway Through Study During Intervention

Student	Capitalization errors	Punctuation errors	Receiving services	Anecdotal notation
1	No	Yes	No	Punctuation of contractions
2	Yes	No	Yes	Capitalization error with proper noun
3	No	No	No	Well written sentences to express views
4	Yes	Yes	Yes	Only “I” capitalized; punctuation errors
5	No	No	No	Capitalization error with proper noun
6	Yes	No	No	Capitalization errors at sentence beginning

the written feedback from the teacher, I compiled student achievement on a graph. The students’ written feedback graph was displayed for all of the students on an overhead projector, as noted in Figure 2. The graph represented the accumulative written feedback received. Figure 3 shows an interpretation of this data information. The teacher encouraged the students to focus on the progress that they personally were making. They were discouraged from comparing their successes with the successes of other students. For approximately 2 min, the graph was displayed without the teacher’s comments.

Survey data. The third data source was a survey completed by the students. To complete the survey, students

were encouraged to answer the five questions in full sentences. The questions were open-ended in design, thereby requiring the students to answer in their own words. The first question asked the student for his or her opinion about the intervention. The second question asked whether the student would like to continue the intervention indefinitely. I counted the responses to these questions as positive (receiving a score of 1) or negative (receiving a score of 2). Questions 3 and 4 asked for students’ opinions about the best or worst part of the intervention. I summarized the answers to these questions by similarity in response (e.g., progress per smiles). The final question concerned the students’ view of how well the intervention transferred to other

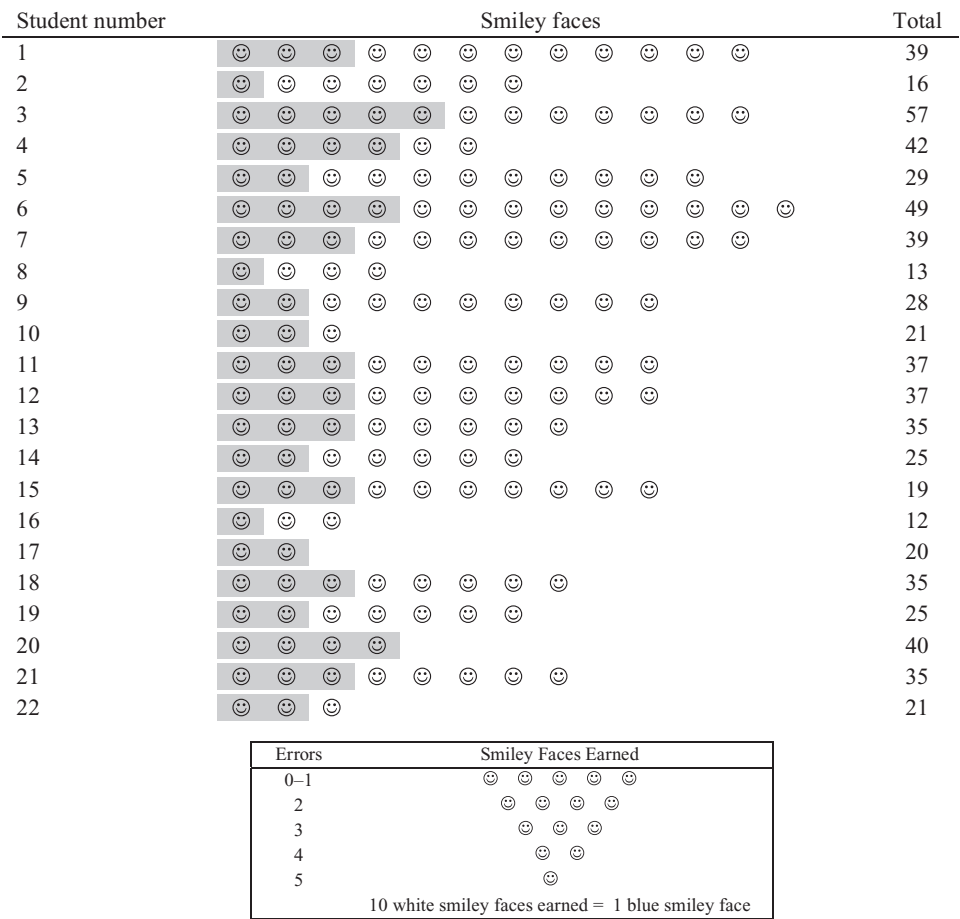


Fig. 1. Smiley faces graph.

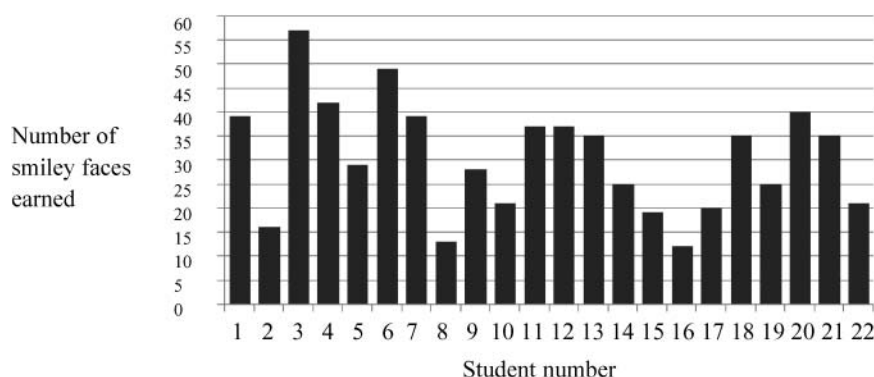


Fig. 2. Interpretation of a smiley face graph.

assignments. I counted these answers as positive or negative in the same manner as I counted the answers to the first two questions. I used this information to determine whether the written teacher feedback affected the self-esteem of the students.

This data source was also graded in the same manner as the experiment sentences, thereby determining whether the intervention was successful in raising the students' ability to consistently use proper writing conventions. I did not include these scores in the smiley face graph presented to the students.

Writing sample data. The final source of data was writing samples from students, as noted in Figure 4. These samples were considered to be free writes because they are not the result of any assignment from the teacher. The samples are good indicators of the transference of writing conventions. The first sample in Figure 4 was written 3 weeks after the end of the trial. The second sample, a letter mailed by the student, was written more than 1 month after the intervention period ended. Student identities were concealed. The first sample was written by one of the general education students designated by county policy as at risk. The other sample was written by a student receiving ESE services.

Name _____ Date _____

1. i live on snow street
2. the grocery store is on blizzard avenue
3. the dogsled flies along husky boulevard
4. my grandmother lives on salmon lane
5. elk circle is the location of my new school

Write the sentences with correct capitalization and punctuation.

1. I live on Snow Street
2. The Grocery Store is on Blizzard Avenue
3. The dogsled flies along Husky Boulevard
4. My grandmother lives on Salmon Lane
5. Elk Circle is the location of my new school

Fig. 3. A sample of trial sentences with corrective feedback.

Results

Because of the continuous demands placed on teachers, some of the long-established teaching practices have begun to fade away. The capability of providing students with written feedback on a regular basis is one such area of concern. Students traditionally expect teachers to provide this feedback more often than the obligatory report card does. This study aimed to determine whether the lack of written feedback from the teacher affects student ability to learn or transfer information. Another aim of this study was to determine whether receiving written teacher feedback would lower the self-esteem of students with learning disabilities or their general education peers.

I established that the problem was that students were directed to complete work that was ungraded for a number of weeks. For example, the teacher would assign one or two pages in student mathematics journals. Students were directed to work on these pages during class time. As

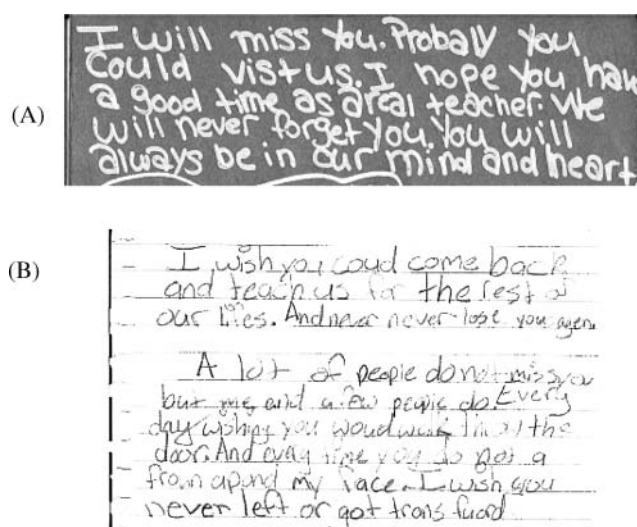


Fig. 4. (A) Letter written by a general education student considered to be at risk according to county policy; (B) letter written by a student receiving exceptional student education (ESE) services.

the school year progressed, the students would rarely complete the assigned pages. This was confirmed when I graded the mathematics journals on three separate occasions. Graphing those results showed that the mean was 35% correct answers for the first time I graded the mathematics journals. The mean was 26% correct answers for the second time I graded the mathematics journals. This is in spite of the fact that several students raised their scores by completing more assignments. The final grading of the mathematics journals showed a mean of 23% correct answers. I did not collect data on the average number of mathematics journal pages that received a score of 0 for not being done. This pattern of noncompletion of work continued across the curriculum areas. The one exception was spelling. Most of the students would complete the spelling test because they graded it immediately after the test.

The results from this study confirm that the students need written teacher feedback to progress academically. At the onset of the study, my anecdotal notes reflected that 31% of the total student body of the class demonstrated correct capitalization for the first letter of a sentence. Once the intervention was in place, the percentage of correct capitalization increased to 47% at the midpoint check according to my anecdotal notes. By the conclusion of the study, there was an 8% decrease from the midpoint percentage, resulting in 39% correct capitalization. Despite this result, there was an overall 8% improvement in the total student body's ability to apply correct capitalization. This fluctuation may represent an increase in the level of difficulty in the materials (e.g., proper nouns, abbreviations).

In the area of punctuation, 37% of the total student body in the class demonstrated the ability to punctuate sentences according to accepted writing conventions. Once the intervention was in place, this percentage increased to 39% by the midpoint check, according to my anecdotal notes. At the conclusion of the study, this percentage had significantly increased to 67% of the students applying standardized punctuation.

In contrast, the students receiving ESE services had an even lower percentage of correct application of writing conventions than did their peers. Regarding capitalization, these students correctly applied proper capitalization only 20% of the time. At the conclusion of the intervention, there was no significant improvement in capitalization. Regarding punctuation, at the start of the study, this group of students was at 50% correct application. By the end of the study, their ability to apply correct punctuation had increased to 66%. This is slightly lower than that of their general education peers.

In the matter of written feedback affecting the self-esteem of the students, the results are positive. I observed that students welcomed the opportunity to receive feedback on their completed work. Two pieces of evidence addressed this concern. First, when students viewed the smiley face graph, I observed that student comments were positive. Although

they were discouraged from comparing their accomplishments with those of a peer, students were quick to commend each other. It was apparent that the students were proud of each other's successes. Second, the survey completed at the end of the study provided additional positive evidence that no harm was done to the student's self-esteem.

Concerning the research intervention, 78% of all students rated the experience as positive. Regarding students' interest in continuing the intervention for the remainder of the school year, 63% said they would like to continue. Regarding what the students liked the most about the process, 66% of the students indicated the written teacher feedback in the form of the smiley face graph. Last, 72% of the students believed that the intervention made them better writers.

In contrast, 100% of the students receiving ESE services rated the best part of the intervention as teacher written feedback in the form of the smiley face graph. In addition, these students were in 100% agreement that this intervention helped them with their writing. On the question of whether it was a positive experience and whether they were interested in continuing the intervention, 75% of these students agreed.

In sum, the beginning of the intervention, the class percentage as a whole was 61% in terms of errors in the writing conventions of capitalization and punctuation. By the end of the experiment, when I tabulated the final capitalization and punctuation errors from the survey questions, the rate of error decreased to 26% total errors. The students receiving ESE services reduced their rate of errors in writing conventions from 80% to 33% total errors.

Last, I observed that rather than diminish student self-esteem, written teacher feedback bolstered student self-esteem. Students became more conscious of the need to complete assignments. Samples from students that were considered free writes showed that the students were able to transfer to other activities the skills they had been practicing.

Discussion

Various stakeholders in education expect students to meet certain achievement goals. The expectation is that teachers will support students in reaching these goals. One of the key components of this support process is the amount and quality of teacher feedback. I conducted this research project to determine how teacher modifications—specifically written feedback—affect student achievement. Teachers have developed feedback modifications because of the time constraints that various stakeholders in education have imposed. Teachers devote several noncompensated hours to noninstructional tasks, such as grading papers, to keep up with the demands placed on their time (NEA, 2003). In the process, written teacher feedback on in-class assignments is no longer considered a necessity in the classroom. Considering the data collected and the research literature

consulted, this is a disservice to students. Key points addressed in this project include types of feedback, timing of feedback, self-esteem, and the role of feedback on acquiring content knowledge.

In recent years, verbal feedback has become the mainstay of the classroom. Verbal feedback, although quick and easy, does not necessarily involve clear academic expectations for student learning. In some instances, verbal feedback is all that is required, as in the example of correcting oral reading errors. Yet, extensive verbal feedback in other academic areas can mislead a student into believing that he or she is proficient in the specified content material and that he or she has an understanding of content material; however, that understanding may not be accurate. As a result, it is possible that continuous use of only verbal feedback may provide students with a false sense of accurate knowledge.

In contrast, written feedback takes more of the teacher's time. Nonetheless, it serves as a clear indicator of whether the students have met the academic expectations. Furthermore, written feedback provides an opportunity for teachers to model correct responses, as in the example of spelling words (Matsumura et al., 2002). Using written feedback in this manner provides students with concrete examples on which to pattern future work.

Corrective feedback, by either oral or written use of open-ended questions, when implemented in the classroom during instructional periods, provides teachers with valuable data without interrupting the natural flow of the lesson. With the use of open-ended questions, teachers have the ability to test student comprehension of content material. Partially correct answers are valued as stepping stones to the correct answer (Ehrlich & Zoltek, 2006). Similarly, when responding to student work with written feedback, teachers can include open-ended questions that promote additional consideration by the student.

Researchers have noted that the timing of teacher feedback can have additional implications on student learning. Immediate or delayed feedback represents different benefits to students with learning disabilities. Immediate feedback may take the form of verbal cues (as in oral readings) that the learner will continue to replicate. Delayed feedback gives the student time to forget the incorrect answer and replace it with the correct answer in his or her memory.

Professionals working with students who require ESE services are naturally concerned about the emotional effect that teacher feedback would have on the students. The data demonstrate that providing teacher feedback actually encourages the students receiving ESE services. Characteristically, students receiving ESE services have the tendency to judge their performance on the basis of the feedback, whether verbal or written, from the teacher (Bear & Minke, 1996). Those students in the study who were receiving ESE services made noteworthy advancement in the area of punctuation. By the end of the intervention, these students had improved their ability to correctly punctuate sentences al-

most to the level of their general education peers. However, it should be noted that continuously praising student efforts without correcting content misconceptions only provides students with false self-esteem.

All students need a clear sense that their understanding is correct. Kulhavy (1977) said that by confirming correct answers for students, teachers engage in the most important characteristic of feedback. This is because it allows the learner to identify content information already learned and to contrast it with content knowledge yet to be gained. Kulhavy confirmed that this was the most important function with the most positive affect (p. 229).

As this research project has shown, timely and understandable written feedback plays an integral part in the learning process. Students, both those requiring ESE services and those in general education, agreed that receiving timely written feedback on their work improved their ability to transfer those writing skills, though limited, to other facets of their academics. There is no doubt that timely written feedback is an effective learning tool that empowers students to focus on their ability to learn.

Results of this action research show the necessity for students to receive feedback from their teachers. Teachers are overwhelmed by responsibilities to various stakeholders in the field of education. However, the major implication of this action research for the field is that students need feedback from teachers. Students should not be expected to complete assignments that will never be graded. Neither should they be required to complete assignments that will be graded so long after the lesson has ended that they will have no useful meaning to the student. It is imperative to the academic progress of students that they be given feedback that is informative and relative to the current unit of study. Because students rely on the feedback from the teacher to ascertain their level of academic achievement, teacher feedback needs to be informative, specific, and positive.

Teachers need to be careful not to fall into the habit of only providing verbal feedback. Verbal feedback has become the feedback of choice in the classroom, but it should not be discounted. Verbal feedback certainly has its place in the classroom. It can be an immediate correction to misspoken words in reading or verbal responses to content questions. Use of the verbal corrective feedback technique of open-ended questions serves to engage students in higher level critical thinking exercises without discouraging initial responses. The use of such questions encourages students at all levels to move beyond the obvious answer.

Teachers who expend themselves to provide written feedback to their students have the additional advantage of providing concrete examples of correct responses. Nonetheless, the time constraints teachers experience may limit the number of instances of written feedback they can provide to students. Therefore, teachers correcting sections of in-class assignments as they walk around the classroom would be beneficial. The teacher placing a checkmark or other such

Table 3. Guide for Teacher Feedback

<i>Recommendations for teacher feedback</i>	<i>Example</i>	<i>Comment</i>
Verbal feedback Open-ended questions Whiteboard slates	How would you explain . . . ? What do you think . . . ? Mathematics practice drills Group review	Avoid questions that can be answered with one or two words. Teacher can quickly scan and respond to correct answers. Encourage critical-thinking skills as students meditate on teacher feedback questions.
Written feedback Open-ended questions In classroom	We do this because . . . ? What is another approach . . . ? Checkmark completed work	While moving about the students, checkmarking completed sections reduces grading time and provides additional reinforcement.

indicator on a section that was completed correctly allows the student to refer to the section with confidence for additional guidance in completing newer concepts.

Timing of feedback is critical in the absorption of new concepts. Immediate feedback is similar to positive reinforcement for a correct answer, thus promoting the possibility that the student will produce the same correct answer at some future time. Similarly, delayed feedback allows the student to forget the incorrect answer, thereby allowing the student's mind to correct erroneous thinking or misconceptions. It should be noted that delayed feedback ought not to linger indefinitely. Students should have the opportunity to master a concept before moving on to the next one.

How teacher feedback is presented has the potential to either harm the self-esteem of students or build it up. Therefore, when providing students with corrective feedback, teachers should be mindful that this interchange should not have a negative tone. In contrast, the focus should be on the positive aspects of student answers. For this reason, it is imperative that teachers use open-ended questions to draw out and build on the level of comprehension from all students. This type of interaction fosters self-esteem in the students while building critical thinking skills. Table 3 provides examples of effective verbal and written feedback open-ended questions.

Teacher feedback has many functions in the classroom. It nurtures academic advancement and addresses or explains student misconceptions on key elements of the subject content. Feedback also provides an avenue for the teacher to model correct responses. Not to be overlooked, though not addressed in this study, is the motivational value of teacher feedback. Notably, students receiving ESE services evaluate their level of academic success on the basis of the feedback they receive from the teacher. For this reason, feedback lets students know that the teacher values their hard work and that it is not merely an endless stream of busy work.

Author note

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