

**THE ROLE OF TEACHER CORRECTION FEEDBACK IN THE SUCCESS OF STUDENTS' ERROR CORRECTION DURING REVISION AMONG HIGH SCHOOL STUDENTS IN BOTSWANA**

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**ABSTRACT:** *Arguments have risen about whether teacher corrective feedback is necessary for students or not; in other words, does error correction benefit students? Feedback is one of the factors in Skinner's operant conditioning model of learning closely tied to behaviourist learning theory. In this learning model, feedback is equated with positive or negative reinforcement. This paper sought to identify the role played by teacher correction feedback in the success of students in correcting errors during revision. The study is based on the hypothesis that there is a relationship between feedback mechanism applied to student errors and students' success in correcting errors during revision. The study makes use of a longitudinal, quasi-experimental design. Two Form 4 classes from one private co-educational secondary school were used comprising 28 males and 40 females of ages 16 years to 21 years. The results reveal that students manage to correct most of the errors made in the original essays after reviewing the correction feedback by teachers in the long term.*

**KEYWORDS:** Teacher correction, feedback, quasi-experimental design, error correction, revision, negative reinforcement

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## **INTRODUCTION**

Most of the published research on teacher correction as a form of feedback, such as Chandler (2003), Ferris and Roberts (2001), Kepner (1991), Lalande (1982), Lee (1997), Polio, Fleck, and Leder (1998) and Robb, Ross, and Shortreed (1986), has been carried out at university or college level. Except for one study that was carried out by Fazio (2001) at primary school level (Grade 5). The existing studies carried out at high school level made use of different forms of correction feedback such as peer correction but none on teacher correction feedback was found. In addition to this, most of these studies have been carried out in Western first world countries. This study seeks to find out the effect of error correction with revision at a secondary school and in a third world country.

The positive or negative aspects of feedback bring about either strengthening or weakening of behaviour (Chaudron, 1988). This can be demonstrated by Skinner's operant conditioning as discussed in (Brown, 1994). In terms of this theory it is argued that if teachers let errors go uncorrected, students may assume that they are correct in their writing. This means that the teacher has given positive reinforcement and it may lead to the errors becoming internalised in the speech patterns of the students. Once this happens then fossilisation of errors may take place, as the errors may persistently occur in the learners' speech or writing. On the other hand, if the teacher corrects the errors that have occurred it means that negative reinforcement has occurred and this could mean that the student will try to avoid the error occurring again and it

may be eradicated eventually. Some non-behaviourist scholars support teacher error correction. Schachter (1984, cited in Pica 1994, p. 68) argues that if learners do not get any form of feedback, then they may assume that their utterances are accurate. Other scholars who concur with the argument include Lalande (1982), Pica (1994) and Brown (1991). Pica (1994, p. 69) argues that calling student's attention to differences between the errors and their correct version is very important as it leads to their success in language learning. Brown (1991, p. 19) adds that, if errors are never corrected, the learners will not get the feedback that they need while Hendrickson (1978) points out that it is difficult for learners to identify their own errors and thus they need someone more knowledgeable to point them out.

Truscott (1996) argues that grammar correction is harmful and according to him it should be abolished. He takes this strong point of view by reviewing studies such as Kepner 1991, Semke 1984 and Sheppard 1992, which revealed that there was no significant difference across the various types of feedback that were given in each of the studies. Truscott argues that if grammar correction is helpful, then students who receive it should perform much better than those who do not. He goes ahead and says that if no significant difference is found between students who receive grammar correction and those who do not, then grammar correction is not helpful. Truscott adds that if students who do not receive grammar correction perform better than those who receive it, then in this case he considers correction as harmful (Truscott 1996, p. 329). According to Truscott on the studies that he reviews, teacher correction feedback was not considered to be helpful and he questions why it should be given, while such time could be used in more constructive work since the teachers spend too much time correcting student errors and likewise the students spend a lot of time going through their work.

Ferris (2004), in response to Truscott (1996), argues that the evidence given by Truscott in his article is not enough to arrive at such a conclusion that grammar correction is harmful. She argues that Truscott compares studies that differ in a lot of parameters such as: the type of writing that was used, the length of study, the design, type of feedback given and who gave the feedback, and says that it is actually like comparing apples and oranges. Chandler (2004) also challenges Truscott's (1996) argument and says that some studies such as Ashwell (2000), Ferris and Roberts (2001) and Lee (1997) found that all groups that received error feedback outperformed those that did not in measures of accuracy. Truscott is accused of just mentioning studies that support his view. Chandler (2003) found that students who received error correction and carried out revision performed much better in measures of accuracy and fluency compared to those who did no revision. Truscott also argues that Sheppard (1992) showed that teacher correction was not helpful yet in this study the content group improved in sentence boundary markers (periods, semi-colons and question marks). Chandler (2004) also argues that sometimes Truscott gives the wrong interpretation to some of the studies that he reviewed; for example, Truscott (1996) says that Robb, Ross, and Shortreed. (1986) revealed that error correction was not helpful, yet all the four groups that were used in the study showed improvement in syntactic complexity. The same study also did not have a control group yet Truscott wants to make us believe that the group that only had the number of errors in each line recorded was equivalent to a no-feedback control group. But this group received some form of feedback. Since Robb et al.'s study did not have a true control group; it is too easy for Truscott to argue that it is not the error feedback that produced the positive change.

Ferris (2004) advises teachers to make use of whatever research is available and deal with their own classroom situations with flexibility. Truscott (1999) concludes that the decision on

whether to correct or not should be left to the teacher's decision. Both Truscott (1996) and Ferris (2004) however agree that more research needs to be done so as to arrive at a consensus on whether to give feedback or not and the present study addresses this issue of how effective teacher error correction is for student writing.

Fathman and Whalley (1990) carried out a study amongst 72 ESL students who were enrolled in intermediate ESL composition classes. The subjects were asked to write a composition based on a picture sequence in 30 minutes. The students were divided into four groups and the four treatments given were: (a) no feedback; (b) feedback on content; (c) feedback on grammar and content; and (d) feedback on grammar. Grammar feedback consisted of underlining of all errors while content feedback consisted of general comments that were not text specific. The group that received both content and grammar feedback received both underlining of errors and comments on the text. All the subjects were asked to revise and rewrite their work after feedback had been given.

The findings of the study were that all of the students improved in grammatical accuracy for both groups that either received grammar feedback only or grammar and content feedback and this was significant for the former group. It was also noted that all groups showed an increase in the number of words in the revised and rewritten scripts. The no feedback group actually had the highest increase in number of words written in the rewrites, showing that they wrote more fluently in their rewrites. Fathman and Whalley (1990) had their data tested statistically, which is one of its strengths. The errors were not specified as the errors were marked comprehensively so it becomes difficult to tell whether there was improvement on any specific errors. The study was carried out in the short term since the writing that was assessed was revisions from draft to draft and so these results support my error correction success hypothesis but say nothing about longer term accuracy development.

Sheppard (1992) carried out a short term study for a period of 10 weeks amongst 26 immigrant English students from a USA college. He experimented with two different types of feedback in a writing class based on narrative writing. The students were divided into two groups of which group A received coded error correction whereby the type of error and the location were indicated. This was followed by a conference with the teacher and then the students were asked to make a second corrected copy. Group B received feedback that dealt only with the content of student writing. This group received requests for clarifications that were written in the margin of the students' papers. Conferences with the teacher were based on these comments in this group. When the revised texts for the two groups were compared, there was no significant difference. Regarding accuracy, both groups improved significantly in the verb form, however there was no significant difference between them. The content group improved significantly in punctuation while the correction group did not and the difference between them was significant. Truscott (1996) uses Sheppard's study to argue that if error correction was helpful, then the content group should have not shown any significant improvement at all.

Ferris (1997) used a different approach compared to the other studies discussed above in that the study made use of comments only. She carried out a study amongst 47 ESL students enrolled in three sections of an advanced University ESL composition course that were taught for 2 consecutive semesters. This study made use of personal, narrative, expository and persuasive writing. It therefore looked at a wider range of genres than any of the other studies reviewed here. The type of feedback given was that subjects received both endnotes and

marginal comments in their first drafts and revised their texts. The findings were that both types of comments led to successful revision. For the comments that were given on grammar and mechanics, endnotes led to more corrections than marginal notes. It was also found that some comments led to less successful revision probably because they were either ignored or deleted. Though the study made use of endnotes and marginal comments, it is relevant to my study in that the students were expected to do revision after receiving feedback and it supports my correction success hypothesis.

The second study by Chandler (2003) was carried out on the effects of various kinds of error correction amongst students in the same ESL writing course as the one above but in a different year with different students. The subjects wrote five assignments within the semester and were expected to do revision after the teacher had given feedback before they wrote the next assignment. Chandler's previous study marked errors by underlining comprehensively but this second study involved four different types of feedback: (a) correction; (b) underlining with description; (c) description of type only; and (d) underlining. Those who received correction got the correct versions of the errors made. In underlining with description, errors were underlined and an instruction of the type of error made was written in the margin. For description only, the type of error made was shown in the margin without pointing out where the error was, while with underlining, errors were simply underlined. In this study, each student received the four kinds of feedback in different orders (rotational). Accuracy was measured in terms of the number of errors made per 100 words on the revised and subsequent scripts, while frequency was measured in terms of the time spent writing each assignment.

The findings of the study were that student writing improved significantly over the semester in both fluency and accuracy. Correction was found to lead to the greatest increase in accuracy both for the revised texts and subsequent writing, while underlining and correction together led to more accurate writing on the next assignment compared to the other two feedback mechanisms.

The procedure was quite different from my study in that in my study each student received only the one feedback type that was assigned to them, while in Chandler's study, the students received each of the feedback mechanisms that were given in a rotational way. Over time it is difficult in Chandler's study to conclude what effect each feedback mechanism had on the student writing. Both studies discussed by Chandler above looked at autobiographical writing while my study looks at descriptive and narrative writing, though as with Chandler (and unlike Liu (2008), for example), all the subjects wrote on the same topics. This makes it easier to make comparison as the level of difficulty should be the same for all the students. Chandler's study supports the present study's hypotheses: correction success, fluency and accuracy development in students' writing.

Greenslade and Felix-Brasdefer (2006) compared coded and uncoded feedback which was similar to Hong's design although it lacked a control group. The subjects were 21 students of Spanish as an FL of Intermediate/advanced proficiency at a university in the USA. Two compositions were given in the study. In the first composition, errors were underlined while in the second errors were underlined and coded. Syntactic, lexical and mechanical errors were focused on and these totalled up to 19 error types. For both compositions, the subjects received feedback on their scripts and after feedback had been given they were asked to do corrections in 20 minutes. In order to correct the second composition, participants were given a list of codes

used in the feedback. The findings were that accuracy improved in the revised drafts under both conditions, but the coded feedback enabled the students to improve in accuracy more than the uncoded feedback. As with the other studies just discussed this particular study was done in the short term, in that students' compositions were studied from one draft to the next draft and only two compositions were considered, which therefore means that we should be cautious about drawing conclusions from it about the value of coded as opposed to uncoded feedback, but because it focuses on this distinction, this research is directly relevant to my study and supports the correction success hypothesis.

In a more recent study that compared direct and indirect feedback mechanisms Liu (2008) studied 12 first-year students in the USA who were involved in a course whose aim was to improve students' writing. The participants met for 50 minutes weekly for a period of 16 weeks and were taught by the same teacher researcher. Three genres were studied: a) a rhetorical analysis; b) an argumentative essay; and c) a reflective essay. All the genres were new to the students and the teacher had to demonstrate to the students what was expected of them before they wrote the essays. This was quite different from the present study, which looked at narrative and descriptive genres which were familiar to the students and so no demonstrations were done before the writing.

In the direct feedback group, students' errors were underlined and corrected while in the indirect feedback, errors were only underlined. Even though Liu's study indicates that the two groups received direct and indirect feedback, it is indicated that this was only done for the first essay while for the other essays, the participant received underlining and or description on latter essays. This was an inconsistency in the study as the feedback mechanisms were not used as they were supposed to be. The present study tried to eliminate such inconsistency by ensuring that each feedback group received one feedback mechanism throughout the experiment, making it easier to draw conclusions on the effect of each of the feedback mechanisms used.

Liu's study found that both groups corrected most of the errors when they wrote a different draft, which is similar to Ferris and Roberts's (2001) finding, where the two groups that received feedback outperformed those that did not receive any. Liu found that those who received direct feedback outperformed those who received indirect feedback concurring with Chandler's study (2003), where direct feedback was the best for correcting errors. Liu's results however were not tested for significance, making it difficult to conclude whether the improvement in the students' writing was significant or not. The study also lacked a control group.

Having reviewed several studies, certain conclusions can be drawn. On the effect of revision on student writing; all the studies reviewed had similar findings in that students wrote better texts when they revised their work compared to the original texts. Most of these studies were in the short term in that this was from draft to draft. It is difficult to tell if these results would remain the same in the long term. This study looks at both the effects of some correction feedback mechanisms in the short term (from draft to draft) and in the longer term, namely over a period of nine weeks.

## **MATERIALS AND METHODS**

The study was performed in Gaborone City of Botswana in One private co-educational secondary school. The school was chosen based on the feasibility and the willingness of the school administration to allow the study to be carried out. The school had students with a lower academic profile than their counterparts who had been admitted to senior government schools. The study involved 68 students comprising 28 males and 40 females of ages 16 years to 21 years and one teacher of English. The students were drawn from two Form 4 classes. All the students spoke Setswana as their first language and were learning English as their second language.

A quasi-experiment, a student questionnaire and a structured teacher interview were used in the data collection. The study made use of an experimental class and a control class. The experimental class had subjects assigned to three different groups which were: direct feedback group, coded feedback group and uncoded feedback group. The direct feedback group (n=11) had their essays marked by having their errors given the correct forms. The correct forms of the errors were written above the error that had occurred. The coded feedback group (n=11) had their errors coded. The errors were underlined and a code was written above the error. The codes were explained to the students at the end of their essays so that they could understand them. The uncoded feedback group (n=12) received feedback whereby the errors were underlined without an indication of what type of errors they were. The students were to try and work out the errors for themselves and correct them. The control group had 34 students and this group did not receive any form of feedback except for a summative statement. This was for ethical reasons such that the students had a feel that their essays were looked into. Students maintained their groups throughout the term to allow consistent comparisons to take place. The students were asked to write each essay (first draft) in about 300 words within a time limit of 80 minutes. All the essays were done in class.

Students were asked to write a first draft of the given essays and upon receiving feedback they were to rewrite their essays. The number of errors made was tallied according to the error categories. These were recorded and for the rewritten essays, the number of errors not corrected was also recorded. The percentage of errors corrected was calculated by dividing the number of errors corrected by the number of errors in the original essays and multiplying the result by 100. The scripts were marked according to the different feedback mechanisms that had been assigned to the eight essays. The errors were tallied according to the different error categories in the study for both the original and the rewritten essays.

## **RESULTS AND DISCUSSIONS**

In this study a total of eight essays were written of which four were descriptive and four were narrative. The first essay in each of the genres was the pretest. Feedback was given to students in the experimental groups on the pretest essay. The percentage of errors corrected was calculated by subtracting the number of errors not corrected in the rewritten essays from the number of errors earlier made in the original scripts. The results were then divided by the number of errors made in the original written scripts and then multiplied by 100 to arrive at a percentage. The results in Table 1, Table 2 and Table 3 below refer to the three essays which students had to correct after feedback. It was important to find out how the students performed

in each of the essays that they corrected and whether they got better at correcting over time. The fourth essay has not been included as this was the posttest and the students never received any feedback on it.

Table 1 shows the percentage of errors successfully corrected by students in their rewrites for the first narrative and descriptive essays.

**Table 1: Percentage of errors corrected (Essay 1)**

Type of Feedback	V	AR	Prep	P	SP	W W	TOTAL
<b>Direct (N=10)</b>							
<b>Narrative</b>	96	94	96	97	98	97	<b>97</b>
<b>Descriptive</b>	92	86	68	100	84	60	<b>84</b>
<b>Coded (N=11)</b>							
<b>Narrative</b>	81	67	92	75	85	80	<b>81</b>
<b>Descriptive</b>	79	100	88	48	10	84	<b>85</b>
<b>Uncoded (N=11)</b>							
<b>Narrative</b>	<b>80</b>	<b>67</b>	<b>78</b>	<b>75</b>	<b>81</b>	<b>91</b>	<b>80</b>
<b>Descriptive</b>	<b>25</b>	<b>83</b>	<b>73</b>	<b>84</b>	<b>86</b>	<b>41</b>	<b>58</b>

In both the narrative and descriptive essays, students corrected most of their errors in the rewrites. On the individual error categories, the spelling errors were corrected best in the direct feedback (narrative essay) and for both coded feedback and uncoded feedback in the descriptive essay. In both the narrative and the descriptive essays, the least explicit feedback (uncoded) led to the lowest corrections while direct feedback led to the most corrections in the narrative essay and coded feedback to the most in the descriptive essay.

Table 2 shows the percentage of errors corrected by students in their rewrites in the second narrative and descriptive essays.

**Table 2: Percentage of errors corrected (Essay 2)**

Type of Feedback	V	AR	Prep	P	SP	WW	TOTAL
<b>Direct (N=10)</b>							
<b>Narrative</b>	96	100	100	50	89	100	<b>95</b>
<b>Descriptive</b>	89	100	89	94	83	90	<b>89</b>
<b>Coded (N=11)</b>							
<b>Narrative</b>	87	100	93	0	92	73	<b>89</b>
<b>Descriptive</b>	73	45	100	55	68	84	<b>72</b>
<b>Uncoded (N=11)</b>							
<b>Narrative</b>	<b>88</b>	<b>0</b>	<b>40</b>	<b>90</b>	<b>45</b>	<b>100</b>	<b>83</b>
<b>Descriptive</b>	<b>85</b>	<b>80</b>	<b>75</b>	<b>92</b>	<b>46</b>	<b>62</b>	<b>79</b>

In the second essay for both narrative and descriptive genres, direct feedback showed the highest number of errors corrected in both the narrative essay (95%) and in the descriptive one

(89%). The percentage of errors corrected in all groups was high, ranging between 72% (coded feedback, descriptive) and 95% (direct feedback, narrative). Overall, the percentage of errors corrected in the narrative essay was higher (ranging from 83% to 95%) compared to the descriptive essay (from 72% to 89%). With regard to the error types, in some categories, students noticed and corrected all the errors, for both the narrative and descriptive essay as indicated by 100% in the above table. There are two instances where none of the errors made were corrected as indicated by 0% in the table. There does not seem to be a consistent trend in the correction of different errors in the set of essays.

Table 3 shows the percentage of errors corrected by students in their rewrites in the third narrative and descriptive essays.

**Table 3: Percentage of errors corrected (Essay 3)**

Type of Feedback	V	AR	Prep	P	SP	W W	TOTAL
<b>Direct (N=10)</b>							
Narrative	78	75	83	79	75	82	<b>78</b>
Descriptive	84	67	84	30	100	76	<b>79</b>
<b>Coded (N=11)</b>							
Narrative	61	67	44	81	63	77	<b>63</b>
Descriptive	75	82	42	53	54	65	<b>65</b>
<b>Uncoded (N=11)</b>							
Narrative	<b>62</b>	<b>89</b>	<b>67</b>	<b>53</b>	<b>42</b>	<b>56</b>	<b>65</b>
Descriptive	<b>60</b>	<b>50</b>	<b>69</b>	<b>48</b>	<b>50</b>	<b>46</b>	<b>53</b>

The percentage of the total errors corrected seemed quite low in this set of essays compared to the first and second sets. For the narrative essay, this ranged between 63% (coded feedback) and 78% (direct feedback), while for the descriptive essay, the total percentage of errors corrected ranged between 53% (uncoded feedback) and 79% (direct feedback). When all groups were compared, for descriptive and narrative essays, the highest percentage of errors corrected was by the direct feedback group. For the individual error categories, in the narrative essay, the highest error correction was in the punctuation category while in the descriptive essay, it was in the article category.

For the uncoded group, the highest error correction in the narrative essay was in the article category while in the descriptive essay, the highest correction was in the preposition category. For the direct feedback group, the highest error correction in the narrative essay was in the preposition category while for the descriptive essay, the highest correction was in the spelling category.

When the first, second and third essays were compared in terms of the percentage of total error corrections the direct feedback group had the highest percentage of errors corrected in both the narrative and descriptive essays in all instances except for the first descriptive essay. There was however no consistent indication of the ease with which different error categories was corrected. Overall, the result is a little strange in that the second essay was corrected best while the third essay was worst corrected for all three groups. This could be attributed perhaps to the

students getting tired of writing and rewriting, which they were not used to before. This result could however also just be due to random variation. This indicates that correction did not get more successful with time.

In order to arrive at a broader perspective, the results of all three sets of essays were amalgamated. Table 4 shows overall percentages for errors corrected for the experimental groups.

**Table 4: Overall percentage of corrected errors**

Type of Feedback	V	AR	Pre p	P	SP	W W	TOTAL
<b>Direct (N=10)</b>							
<b>Narrative</b>	90	90	93	76	88	93	<b>90</b>
<b>Descriptive</b>	88	84	80	75	89	76	<b>84</b>
<b>Coded (N=11)</b>							
<b>Narrative</b>	76	78	76	53	80	77	<b>78</b>
<b>Descriptive</b>	75	76	77	52	74	78	<b>74</b>
<b>Uncoded (N=11)</b>							
<b>Narrative</b>	<b>77</b>	<b>52</b>	<b>62</b>	<b>73</b>	<b>56</b>	<b>83</b>	<b>76</b>
<b>Descriptive</b>	<b>57</b>	<b>71</b>	<b>72</b>	<b>75</b>	<b>61</b>	<b>50</b>	<b>63</b>

The average percentage totals were calculated for each of the feedback types for the three essays as a whole in each genre. For the narrative essay the direct feedback group had the highest percentage of total errors corrected, followed at a distance by the coded feedback group with the uncoded feedback group slightly lower still. All three feedback groups' results revealed that the students were able to correct more than three-quarters of their errors when rewriting their essays. The overall trend remained the same in the descriptive essay, with the direct group highest, followed by the coded and then the uncoded. The results clearly indicate that the most explicit form of error correction (direct feedback) led to the most successful correction, even though this may not be surprising as in this kind of feedback the students were given the correct forms of the errors that they made and therefore they did not have to struggle to see where they went wrong. It is also worth noting that students made more corrections in the narrative essay compared to the descriptive essay for all the different types of feedback. This could be attributed to the fact that the narrative essay is thought to be a much easier genre for students, compared to the other genres. It could also be assumed that the students had had more practice in narrative essay writing compared to descriptive essay writing.

For the effect of type of feedback on different error categories, for the narrative essay, the results revealed that direct feedback led to the most successful correction in all the error categories. However, it was not automatic that it was followed by the coded feedback, as was the case in the average totals for all the errors. For example, the uncoded feedback group had more corrections in the verb, punctuation and wrong word categories compared to the coded feedback group despite uncoded feedback being the least explicit form of feedback.

For the descriptive genre the results did not duplicate findings from the narrative essay. The direct feedback group had the highest error corrections in four out of six of the error categories,

the punctuation and wrong word categories being the two exceptions. Uncoded feedback - the least explicit category - actually led to the most corrections for punctuation errors, though followed very closely by direct feedback. For the wrong word category, the coded group had the highest error correction level although this was again very close to the direct feedback group.

The results reveal that overall the rate of error correction varied between the narrative and the descriptive genres, with a clear indication that the students made more successful corrections in the narrative essay compared to the descriptive essay. The results also suggest that the more explicit a feedback type was, the higher the correction level, but not for all cases, and there were even instances where the least explicit form of error correction (uncoded feedback) led to higher correction levels than even the direct feedback.

To test the correction success hypothesis statistically, the total number of errors corrected and those not corrected for each of the feedback types for each genre was analysed using Chi-square: This test is designed to evaluate whether the differences between the observed frequencies and the expected frequencies under a set of theoretical assumptions is statistically significant (Frankfort-Nachmias & Nachmias 2004, p. 496).

The data presented in Table 5 and Table 6 was processed accordingly (using the VassarStats website: <http://faculty.vassar.edu/lowry/vassarStats.html>). Total errors corrected and not corrected in the narrative essay are shown in Table 5 below.

**Table 5: Narrative essay (a comparison of corrective feedback mechanisms)**

<b>Feedback group</b>	<b>Errors corrected</b>	<b>Errors not corrected</b>	<b>Total</b>
<b>Direct</b>	557	64	<b>621</b>
<b>Coded</b>	447	126	<b>573</b>
<b>Uncoded</b>	426	140	<b>566</b>
<b>Total</b>	<b>1430</b>	<b>330</b>	<b>1760</b>

For the narrative essay, the value of Chi-square was 46.32, well above the 0.05 threshold of 7.815 (two degrees of freedom and two-tailed, given the non-directional hypothesis) and the probability value was computed as  $p < 0.0001$ . For the narrative essay, then, there is a very significant relationship between the type of feedback provided on errors and student success in correcting them during revision. To establish if the three feedback mechanisms could be ranked in terms of correction success, subsidiary Chi-square tests were undertaken for each pair of feedback types relative to one another. These showed that direct feedback was very significantly ( $p < 0.0001$ ) better than the other types, but the latter were not significantly different to one another. Total errors corrected and not corrected in the descriptive essay are shown in Table 6 below.

**Table 6: Descriptive essay (a comparison of corrective feedback mechanisms)**

<b>Feedback group</b>	<b>Errors corrected</b>	<b>Errors not corrected</b>	<b>Total</b>
<b>Direct</b>	423	81	<b>504</b>
<b>Coded</b>	364	120	<b>484</b>
<b>Uncoded</b>	304	182	<b>486</b>
<b>Total</b>	<b>1091</b>	<b>383</b>	<b>1474</b>

For the descriptive essay the value for the Chi-square was 59.32 which is above the 0.05 threshold of 7.815 (two degrees of freedom and two tailed) and the probability value was computed as  $p < 0.0001$ . For the descriptive essay, there was thus also a very significant relationship between the type of feedback provided on errors and students' success in correcting the errors during revision. To establish whether the three feedback mechanisms could be ranked in terms of correction success, subsidiary Chi-square tests were undertaken for each pair of feedback types relative to one another. It was revealed that the direct feedback was very significantly ( $p < 0.0009$ ) better than the coded feedback and the coded feedback in turn very significantly ( $p < 0.0001$ ) better than un-coded feedback hence a very clear ranking for the descriptive essay.

These statistical results provide strong support for the hypothesis that there is a relationship between the feedback mechanism applied to student errors and students' success in correcting errors during revision. The results indicate that different types of feedback can make a difference to correction success. The results showed that students achieved significantly more success in correcting their errors during revision of both the narrative and descriptive essays if they received direct feedback. For the narrative essays there was no significant difference between the coded and uncoded feedback groups but the results for the descriptive essay indicated a definite ranking in terms of correction success from direct, coded and to uncoded feedback categories. This ranking goes from most explicit to least explicit feedback and so is not unexpected, although this does not apply so clearly to the narrative essays and various other exceptions that are discussed below with regard to specific error categories. The result is similar to that of Chandler (2003), where error correction led to the highest correction success compared to the other feedback mechanisms that were used. Delgado (2007) also found that students wrote better texts after receiving explicit (coded feedback) compared to when they received less explicit feedback (uncoded feedback). This finding concurs with those of Chandler (2003), Fathman and Whalley (1990), Hong (2004) and Ferris and Roberts (2001), where rewriting led to more accurate written essays.

## CONCLUSION

There is a strong relationship between the feedback mechanism provided on student errors and students' success in correcting errors both in the short term (draft to draft) and in the long term over a period of nine weeks. In both genres, the direct feedback mechanism gives the highest percentage of corrections in the revised versions of the essays. The most explicit form of error

correction (direct feedback) helps the students to correct most of their errors. Revision in the long term leads to improvement in writing just as it does in the short term.

## RECOMMENDATION

The study has been predominantly quantitative. However, there is need to make better use of a combination of quantitative and qualitative methods in future studies in order to arrive at better understanding of the role of teacher error correction feedback in successful error correction by students over time.

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