

A study of the use of spell and grammar checker in texts by second foreign language learners of Spanish.

Henrietta Carolsson Godolakis, Spanish department at the University of Lund

Abstract

This study was made in order to evaluate the didactic use of the spell and grammar checker in texts by second foreign language learners of Spanish at an upper secondary school in Sweden. Four students participated in the study.

It was shown in the study that *Microsoft Word 2010* detected about 40% of the mistakes found in the students' texts. Out of the by *MS Word* detected mistakes, the programme gave the correct feedback on 69%. Thus, it is concluded that *MS Word* correctly detected, i.e. detected and provided the correct feedback, to 28% of the mistakes made by the students. Furthermore, it is understood that there was a difference between the efficiency of *MS Word* when detecting spelling and grammar mistakes. 59% of all the spelling mistakes found in the students' texts was detected correctly by *MS Word*, while no more than 15% of the grammar mistakes were correctly detected.

The article gives an overview on how efficiently *MS Word* detected different types of mistakes concerning spelling as well as grammar. Furthermore, an analysis on how the students used the feedback by *MS Word* is provided.

It is concluded in the article that the spell and grammar checker provided by *Microsoft Word 2010* is not alone a sufficient tool for a second foreign language learner of Spanish in order to improve their written texts, but could be used in order to improve a text superficially.

Keywords:

Spanish, foreign language, spelling, grammar, mistakes, *Microsoft Word*, student

1. Introduction

Apart from Swedish and English, all Swedish students have the opportunity to study at least one more foreign language in school, Spanish being one of those. As expressed in the curriculum of languages, the students should develop comprehensive communicative skills. This involves receptive skills, as well as productive and interactive skills. Furthermore, the students should be given the opportunity to develop strategies in order to support their communication and to solve problems caused by their limited proficiency. The teaching should enable the students to speak, interact and write with the support of different means and media¹.

One example of how students could be supported in the development of their language is to use the spell and grammar programme provided by word processors. Today a considerable amount of all written production in school is made on a computer. This provides the students the possibility to use different programmes to check spelling and grammar when revising a text. *Microsoft Word* is a widely used programme on computers today and for students, it is a commonly used tool. However, little is known about the didactic capacity of the tool in foreign language learning. Thus, this study was designed to study how the students use the feedback provided by the programme in order to process their texts.

2. Background

A couple of studies have been made concerning learner responses on corrective feedback and the use of a spell and grammar checker. Trude Heift, professor at the Linguistics department of Simon Fraser University, conducted a study in order to find out the response on corrective feedback from a computer programme of Canadian university students. It was concluded that the students responded more correctly when given feedback that provided an explanation of the error and that also highlighted the error. Proficiency level and gender did not affect the results². The following year Anne Rimrott, linguist at the Linguistics department of Simon Fraser University, and Trude Heift made an evaluation of the performance of the programme *MS Word* using learners of German. The investigators examined spelling mistakes made by learners of German and reached the conclusion that 80% of the spelling mistakes were competence errors rather than typographical mistakes, i.e. performance errors. It was also concluded that the spell checker failed “to detect or provide a correction for 48% of the spelling mistakes” made by the students³. Another study was made by Heift and Rimrott in 2008 that was meant to investigate the “learner responses to three distinct types of corrective feedback for misspellings produced by English learners of German while using the E-tutor, a parser-based online CALL program”⁴. It was concluded in this study that the students submitted the target word more often when given as an option in the feedback provided by the programme. Also it was suggested that the order in which the words appeared influenced the students’ choice.

3. This study

The material for this article was gathered at an upper secondary school in Sweden in February, 2013. A total of 314 errors from texts made by four students of Spanish of the second grade were analysed.

¹ <http://www.skolverket.se/forskola-och-skola/gymnasieutbildning/amnes-och-laroplaner/mod>

² Heift, T. (2004) Corrective feedback and learner uptake in CALL. . *ReCALL* 16 (2). Cambridge University Press, p 413-431.

³ Rimrott, A. & Heift, (2005) T. Language Learners and Generic Spell Checkers in CALL. *CALICO Journal*, Vol. 23, No. 1, p 17-48.

⁴ Heift, T. & Rimrott, A. (2008) Learner responses to corrective feedback for spelling errors in CALL. *System* 36, p 196–213.

3.1. Study participants

The four students studied a course of Spanish equivalent to B1.1⁵ according to the Common European Framework of Reference for Languages (CEFR)⁶. They all had studied Spanish for four years in school and one and a half year at the upper secondary school where they all attended the programme of social science. All informants were female turning 18 this year. The informants' proficiency level was measured by the grade they received in June 2012 when they finished their last course of Spanish⁷. The students participating in the study had received the following grades at the end of their last Spanish course:

Table 1. INFORMATION ABOUT INFORMANTS⁸.

| Informant | Grade | Length of text (words) |
|-----------|-------|------------------------|
| Ana | B | 344 |
| Berta | A | 381 |
| Cecilia | B | 337 |
| Dora | F | 208 |

Dora was attending course 4 of Spanish whilst studying extra to be able to pass the previous course. The texts the students produced were of different length and of different proficiency level. Ana wrote her text in the past tense as well as Berta. Both Dora's and Cecilia's texts were written in the present tense.

3.2. Procedures

The students were given the instructions to write a text in Spanish describing a journey to Italy, as shown in a series of pictures made by Malin Ågren⁹, to a person who could not see the pictures. They were advised to write something about each picture and additionally they were asked to be detailed in their descriptions. They had no time limit in order to complete their texts. However, the students used between 40 and 50 minutes to write. The programme used when writing had no spell or grammar check and the students could not use any other tools when writing. All the students wrote their texts simultaneously. The texts were saved in their original version and thereafter, the texts were copied into an *MS Word* document in order to use the spell and grammar checker of this programme.

The students were then instructed to revise their texts using the spell and grammar checker. They were made aware of the fact that *MS Word* does not always give the correct answer. Also they were instructed on how to use the programme and that they could work in whatever order they liked. All students were already familiar with the spell and grammar checker saying that they used it frequently when writing in English and to some extent in Spanish as well. Ana and Berta worked through their texts the same day, while Cecilia and Dora did it the following day. All students worked through their texts by clicking on the marked words in the text, thus not receiving the extra feedback given by *MS Words*.

When revising their texts, the editing process was recorded by a programme called *Screen-cast-o-matic*¹⁰. When their work was finished, the film was saved. Directly after the revision of the texts the students took part in a stimulated recall, an introspective method suitable for examining processes. The method is often used to study learning processes¹¹. The student was asked to comment on her errors, the response from *MS Word* on her mistakes and other interesting observations made on the film. The introspection was audio recorded. One problem occurred during the stimulated recall of Ana which resulted in the fact that no

⁵ In Sweden you can study all together seven different courses during the second part of the 9-year comprehensive school and upper secondary school.

⁶ http://www.coe.int/t/dg4/linguistic/CADRE1_EN.asp

⁷ The Swedish grades are A, B, C, D, E and F. An F indicates that you do not have sufficient knowledge to pass the course.

⁸ The students' names have been changed.

⁹ Malin Ågren, 2008. Appendix 1.

¹⁰ This programme is a web based recording programme used for free. <http://www.screencast-o-matic.com/>

¹¹ <http://srmo.sagepub.com/view/the-sage-dictionary-of-qualitative-management-research/n100.xml>

recording was made of the interview. The investigator noted this directly and documented the interview immediately. Finally, the students were asked to grade the spell and grammar checker according to a Likert-scale¹².

The material was finally coded according to the type of error committed, the possible detection of the mistakes, the possible response given by *MS Word* and also the response the students gave to the feedback provided by *MS Word*.

3.3. Classification of Errors

In order to be able to code the mistakes made by the students, the definition of a spelling error used by Rimrott & Heift was used. According to them, a misspelling is “a nonexistent word in a given language independent of the source of the error”¹³. The classification of errors used in this study was influenced by Rimrott and Heift when it comes to classifying the spelling errors by *performance* and *competence errors*, but also the subdivisions within these two. *MS Word* was originally developed in order to detect performance errors made by adult native writers, but a non-native writer makes more competence errors. In their study, Rimrott and Heift concluded that *MS Word* has difficulties in finding competence errors¹⁴.

Table 2. CLASSIFICATION OF PERFORMANCE ERRORS. Examples.

| | | |
|-----------------------------------|----------------------|------------------------------|
| Single letter violations | Addition | *receptción/recepción |
| | Omission | *vistaron/visitaron |
| | Substitution | *numero/número |
| | Transposition | *pusieorn/pusieron |
| Multiple letter violations | | *receptionista/recepcionista |
| Word boundary violations | | *largo.Lisa |

Adapted from Rimrott & Heift (2005)

The examples above explain rather explicitly the different subdivisions within the category of performance errors. The last example shows one of the few mistakes made concerning word boundary violations, where the student’s performance error violates the word boundary of the intended words.

The codes used within the category of *competence errors* were *interlingual*, *intralingual* or *wrong word errors*. The *Unclassified* –category was removed from the original coding schedule since there were no examples put into this category. *Interlingual errors* were mistakes influenced by the students’ mother tongue or possibly English¹⁵. *Intralingual errors* were mistakes made by the influence of the target language. The *Wrong word error* was used when the student had produced a misspelt word that was an incorrect word in the context.

Table 3. CLASSIFICATION OF COMPETENCE ERRORS. Examples.

| Language influence | | |
|--------------------------|----------------|--------------------|
| Interlingual | Intralingual | Wrong word |
| *guitarra/guitarra | *juego/jugó | *de mas/ demasiado |
| *restaurante/restaurante | *granda/grande | *camninas/camas |

Adapted from Rimrott & Heift (2005)

¹² Appendix 2.

¹³ Rimrott, A. & Heift, T. (2005) Language Learners and Generic Spell Checkers in CALL. *CALICO Journal*, Vol. 23, No. 1, p 21.

¹⁴ Rimrott, A. & Heift, (2005) T. Language Learners and Generic Spell Checkers in CALL. *CALICO Journal*, Vol. 23, No. 1.

¹⁵ English is studied by Swedish children from an early age. Furthermore, the input of English is immense in Swedish society.

Additionally, the category of *grammar* was added to the study in order to better suit the learners of a second foreign language, who are more likely to make grammar mistakes. To this category were added the mistakes that were not coded as a spelling mistakes, according to the earlier definition. Codes used here were *agreement*, *grammatical word*, *verb form/tense*, *verb form/wrong verb*, *verb form* and *other*. *Agreement* contains mistakes in general concerning adjectives, verbs and articles that do not concord with their context. *Grammatical words* are for example wrong choice of preposition, missing preposition or wrong usage of part of speech. Swedish learners of Spanish generally make many verb mistakes since the verb system differ largely from their mother tongue. Hence the verb form category was divided into three. When the student chose the wrong tense, the mistake was coded as *Verb form/tense*. *Verb form/wrong verb* was used when the student had inflected the verb correctly but had used the wrong verb in the context. These mistakes were included in the study even if they were of a more semantic character. When the student used an inflected form of a verb that should be in the infinitive, or the opposite, *verb form* was used to code the mistake. When a student used a word that did not work in the context, the code *other* was used. This category was also used when the student repeated the same word twice.

Table 4. CLASSIFICATION OF GRAMMATICAL ERRORS. Examples.

| | |
|----------------------|-----------------------------------|
| Agreement | un/una; rubio/rubia; amo/ama |
| Grammatical word | por/para; -/de; delante/encima |
| Verb form/Tense | van/fueron; pueden/podían |
| Verb form/Wrong verb | había/hacia; es/hace |
| Verb form | va/ir |
| Other | mira/vista; repetition of a word; |

3.4. Research questions

The main object of this study was to explore the potentials of *Microsoft Word 2010*, a tool originally designed for native speakers, within the foreign language education area. What mistakes does the programme detect and does it give correct feedback on these mistakes? Furthermore, how do the students use of the feedback given by the spell and grammar checker? Can the tool be seen as beneficial for students learning Spanish as a second foreign language? The aspect of proficiency was taken into consideration when analyzing the material.

4. Results

Firstly, the results of the errors coded as *spelling mistakes* and the *grammatical mistakes* will be analysed. Secondly, an analysis of the *learner responses* will be made and, finally, the results of the *stimulated recall*.

4.1. Evaluation of spell and grammar checker

In the study there were 314 mistakes made by the students. Out of these mistakes there were 91 spelling mistakes and 223 grammar mistakes, i.e. 29% of the mistakes were spelling mistakes and 71% grammar mistakes. Naturally, there were individual differences between the students depending on their level of proficiency in their texts. Roughly speaking, one third of the students' mistakes were spelling mistakes and two thirds were grammatical errors.

Out of the 314 mistakes, 127 were detected by *MS Word*, i.e. approximately 40% of the mistakes. Out of the detected errors, 88 were correctly detected, i.e. 69% of the detected errors. By correctly detected it is meant that *MS Word* supplied the correct feedback. It is interesting to point out that only 88 out of 314 mistakes were correctly detected, i.e. 28% of the mistakes made were correctly detected. In only one case did *Word* flag a mistake that was not a mistake, i.e. a *false alarm*.

Table 5. STUDENT ERRORS.

| | | Student errors | Errors detected by Word | | | | | |
|----------------|----------|----------------|-------------------------|------------|--------------------|--------------|----------|-----------|
| Subject | Domain | Total | Total | | Correctly detected | False alarms | | |
| | | | Occs | Perc | Occs | Perc | Occs | Perc |
| Ana | Spelling | 16 | 15 | 94% | 11 | 73% | 0 | 0% |
| | Grammar | 81 | 10 | 12% | 7 | 70% | 0 | 0% |
| Berta | Spelling | 16 | 15 | 94% | 10 | 67% | 0 | 0% |
| | Grammar | 34 | 18 | 53% | 15 | 83% | 1 | 6% |
| Cecilia | Spelling | 28 | 25 | 89% | 18 | 72% | 0 | 0% |
| | Grammar | 48 | 7 | 15% | 7 | 100% | 0 | 0% |
| Dora | Spelling | 31 | 31 | 100% | 15 | 48% | 0 | 0% |
| | Grammar | 60 | 6 | 10% | 5 | 83% | 0 | 0% |
| Total | | 314 | 127 | 40% | 88 | 69% | 1 | 1% |

4.1.1 Spelling mistakes

Examining the spelling mistakes made by the students, we see that 91 mistakes were made. 86 of these were detected, i.e. almost 95%. However, only 54 mistakes were successfully corrected by *MS Word*, i.e. 63% of the detected mistakes and 59% of the total amount of spelling mistakes.

Table 6. SPELLING ERRORS.

| | | Student errors | Errors detected by Word | | | | | |
|----------------|----------|----------------|-------------------------|------------|--------------------|--------------|----------|-----------|
| Subject | Domain | Total | Total | | Correctly detected | False alarms | | |
| | | | Occs | Perc | Occs | Perc | Occs | Perc |
| Ana | Spelling | 16 | 15 | 94% | 11 | 73% | 0 | 0% |
| Berta | Spelling | 16 | 15 | 94% | 10 | 67% | 0 | 0% |
| Cecilia | Spelling | 28 | 25 | 89% | 18 | 72% | 0 | 0% |
| Dora | Spelling | 31 | 31 | 100% | 15 | 48% | 0 | 0% |
| Total | | 91 | 86 | 95% | 54 | 63% | 0 | 0% |

Examining the difference between *competence* and *performance errors* we can conclude that *MS Word* more correctly detects *performance errors*, as concluded by Rimrott and Heift as well¹⁶. 50 performance errors were made, 47 of these were found, i.e. 94%. Out of the detected *performance mistakes*, 42 were correctly detected, 89%. This means that 84% of all performance errors were correctly detected.

Table 7. PERFORMANCE ERRORS.

¹⁶ Rimrott, A. & Heift, (2005) T. Language Learners and Generic Spell Checkers in CALL. *CALICO Journal*, Vol. 23, No. 1.

| Subject | Domain | Corrected | | Uncorrected | | Undetected | | Total | |
|----------------|--------------------|-----------|------------|-------------|------------|------------|-----------|-----------|-------------|
| | | Occs | Perc | Occs | Perc | Occs | Perc | Occs | Perc |
| Ana | Performance errors | 8 | 89% | 0 | 0% | 1 | 11% | 9 | 100% |
| Berta | Performance errors | 5 | 100% | 0 | 0% | 0 | 0% | 5 | 100% |
| Cecilia | Performance errors | 16 | 80% | 2 | 10% | 2 | 10% | 20 | 100% |
| Dora | Performance errors | 13 | 81% | 3 | 19% | 0 | 0% | 16 | 100% |
| | Total | 42 | 84% | 5 | 10% | 3 | 6% | 50 | 100% |

Adapted from Rimrott & Heift (2005)

When analyzing the performance errors the majority of the students' mistakes were coded as *substitution*, i.e. 58% of the mistakes. This is explained by the fact that errors where students had substituted a letter with an apostrophe with a regular letter, or the opposite, the error was coded within this category. *Omission* counted for 14% of the mistakes.

Table 8. CLASSIFICATION OF PERFORMANCE ERRORS.

| | | Ana | | Berta | | Cecilia | | Dora | | Total | |
|-----------------------------------|----------------------|----------|-------------|----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|
| | | Occs | % | Occs | % | Occs | % | Occs | % | Occs | % |
| Single letter violations | Addition | 1 | 11% | 0 | 0% | 4 | 20% | 0 | 0% | 5 | 10% |
| | Omission | 1 | 11% | 2 | 40% | 1 | 5% | 3 | 19% | 7 | 14% |
| | Substitution | 5 | 56% | 2 | 40% | 11 | 55% | 11 | 69% | 29 | 58% |
| | Transposition | 0 | 0% | 1 | 20% | 3 | 15% | 1 | 6% | 5 | 10% |
| Multiple letter violations | | 0 | 0% | 0 | 0% | 0 | 0% | 1 | 6% | 1 | 2% |
| Word boundary violations | | 2 | 22% | 0 | 0% | 1 | 5% | 0 | 0% | 3 | 6% |
| Other | | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Total | | 9 | 100% | 5 | 100% | 20 | 100% | 16 | 100% | 50 | 100% |

Adapted from Rimrott & Heift (2005)

All in all, 41 *competence errors* were made, out of which 39 were detected, 95%. Only 12 of them were correctly detected, i.e. 29%. It was concluded that 66% of the *competence errors* detected were left uncorrected.

Table 9. COMPETENCE ERRORS

| Subject | Domain | Corrected | | Uncorrected | | Undetected | | Total | |
|---------|-------------------|-----------|------------|-------------|------------|------------|-----------|-----------|-------------|
| | | Occs | Perc | Occs | Perc | Occs | Perc | Occs | Perc |
| Ana | Competence errors | 3 | 43% | 4 | 57% | 0 | 0% | 7 | 100% |
| Berta | Competence errors | 5 | 45% | 5 | 45% | 1 | 1% | 11 | 100% |
| Cecilia | Competence errors | 2 | 25% | 5 | 63% | 1 | 13% | 8 | 100% |
| Dora | Competence errors | 2 | 13% | 13 | 87% | 0 | 0% | 15 | 100% |
| | Total | 12 | 29% | 27 | 66% | 2 | 5% | 41 | 100% |

Adapted from Rimrott & Heift (2005)

Looking closer at the different types of competence errors, we can conclude that close to two thirds of the errors were due to *intralingual interference* and almost one third was due to *interlingual interference* from mother tongue. These findings confirm the results found by Rimrott and Heift¹⁷.

Table 10. CLASSIFICATION OF COMPETENCE ERRORS.

| Subject | Language influence | | | | | | | | Total | |
|--------------|--------------------|------------|--------------|------------|------------|------------|-----------|-------------|-------|--|
| | Interlingual | | Intralingual | | Wrong word | | Total | | | |
| | Occs | % | Occs | % | Occs | % | Occs | % | | |
| Ana | 1 | 14% | 6 | 86% | 0 | 0 | 7 | 100% | | |
| Berta | 3 | 27% | 7 | 64% | 1 | 9 | 11 | 100% | | |
| Cecilia | 3 | 38% | 4 | 50% | 1 | 12 | 8 | 100% | | |
| Dora | 4 | 27% | 9 | 60% | 2 | 13 | 15 | 100% | | |
| Total | 11 | 27% | 26 | 63% | 4 | 10% | 41 | 100% | | |

Adapted from Rimrott & Heift (2005)

4.1.2.

Grammar mistakes

Out of the 314 mistakes in the informants' texts, there were 223 grammar mistakes. Out of the 223 grammar mistakes only 41 were detected by Word, 18%. Out of the 41 detected mistakes 34 were correctly detected, i.e. 83%. This indicates that only about 15% of the grammar mistakes committed in the informants' texts were actually corrected successfully by *MS Word*. It is obvious that the programme has difficulties in detecting all kinds of grammatical errors that the students make. One mistake detected by *MS Words* was a *false alarm*.

Table 11. GRAMMAR

¹⁷ Rimrott, A. & Heift, (2005) T. Language Learners and Generic Spell Checkers in CALL. *CALICO Journal*, Vol. 23, No. 1.

MISTAKES

| | | Student errors | Errors detected by Word | | | | | |
|----------------|--------------|----------------|-------------------------|------------|-----------|--------------------|----------|--------------|
| | Domain | | Total | Total | | Correctly detected | | False alarms |
| | | | Occ | Perc | Occ | Perc | Occ | Perc |
| Ana | Grammar | 81 | 10 | 12% | 7 | 70% | 0 | 0% |
| Berta | Grammar | 34 | 18 | 53% | 15 | 83% | 1 | 6% |
| Cecilia | Grammar | 48 | 7 | 15% | 7 | 100% | 0 | 0% |
| Dora | Grammar | 60 | 6 | 10% | 5 | 83% | 0 | 0% |
| | Total | 223 | 41 | 18% | 34 | 83% | 1 | 2% |

As shown in the table below, most of the students' grammar mistakes were mistakes concerning *agreement*, 37%. The *grammatical word* mistakes and those of *verb form/tense* roughly represented one quarter of the mistakes each. For a Swedish learner, this is not a surprising result.

Table 12. GRAMMAR RESULTS

| | Corrected | | Uncorrected | | Undetected | | Total | |
|------------------------------|-----------|------------|-------------|-----------|------------|------------|------------|-------------|
| | Occs | Perc | Occs | Perc | Occs | Perc | Occs | Perc |
| Agreement | 29 | 85% | 0 | 0% | 54 | 30% | 83 | 37% |
| Word order | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Grammatical word | 4 | 12% | 1 | 17% | 54 | 30% | 59 | 26% |
| Verb form/ Tense | 0 | 0% | 4 | 66% | 51 | 28% | 55 | 25% |
| Verb form/ Wrong Verb | 0 | 0% | 0 | 0% | 16 | 9% | 16 | 7% |
| Verb form | 0 | 0% | 1 | 17% | 4 | 2% | 5 | 2% |
| Other | 1 | 3% | 0 | 0% | 4 | 2% | 5 | 2% |
| Total | 34 | 15% | 6 | 3% | 183 | 82% | 223 | 100% |

From the table above, it is concluded that 85% of the by *MS Word* correctly detected mistakes was *agreement errors*. However, studying these mistakes closer it is concluded that *MS Word* was unable to correct the agreement errors concerning verbs. When analyzing the undetected words it is seen that three categories of mistakes, *agreement*, *grammatical word* and *verb form/tense*, each counted for almost a third of the mistakes.

Looking at the individual results we can see that Berta stood out in contrast to the others. 44% of her grammar mistakes were successfully detected by *MS Word*. Compare this to the 15% of the overall result. Almost 40% of her grammatical mistakes were *agreement errors* and all of these were detected. She also made fewer grammar mistakes compared to the other. This partly explained her differentiated results.

4.2. Learner responses to correction suggestions

When the students revised their texts they used *MS Word 2010* spell and grammar checker. The feedback provided by *MS Word* was coded, as well as the students' response, and then analysed.

4.2.1. Spelling mistakes

In total, the informants made 91 spelling mistakes, 88 were correctly detected. In 78 of the cases the students made a correction taken from the feedback provided by *MS Word*. In 50 of the cases the student chose the target word, i.e. 64% of the cases. In 47 of these cases the target word was found in the first position of the list provided by *MS Word*. In 28 of the cases the students chose an incorrect word from the list provided by *MS Word*. In 19 of these cases the students chose the first word of the list, 68%. This indicates a general tendency among the students to choose the first word provided by *MS Word*. In 85% of the cases the students chose a word from the first position of the list provided by *MS Word*.

Tabell 13. LEARNER RESPONSES TO FEEDBACK ON SPELL-CHECKING ERRORS

| Subject | Action | Position of selected word | | | | | | | | | | Total | |
|--------------|--|---------------------------|------------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|-----------|-------------|
| | | 1st | | 2nd | | 3rd | | 4th | | >4th | | Occs | % |
| | | Occs | % | Occs | % | Occs | % | Occs | % | Occs | % | Occs | % |
| Ana | Submits target word | 9 | 90% | 0 | 0% | 1 | 10% | 0 | 0% | 0 | 0% | 10 | 100% |
| | Submits a wrong word that is in the list | 2 | 40% | 0 | 0% | 1 | 20% | 2 | 40% | 0 | 0% | 5 | 100% |
| Berta | Submits target word | 9 | 100% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 9 | 100% |
| | Submits a wrong word that is in the list | 1 | 50% | 0 | 0% | 0 | 0% | 0 | 0% | 1 | 50% | 2 | 100% |
| Cecilia | Submits target word | 16 | 94% | 1 | 6% | 0 | 0% | 0 | 0% | 0 | 0% | 17 | 100% |
| | Submits a wrong word that is in the list | 5 | 100% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 5 | 100% |
| Dora | Submits target word | 13 | 93% | 1 | 7% | 0 | 0% | 0 | 0% | 0 | 0% | 14 | 100% |
| | Submits a wrong word that is in the list | 11 | 69% | 4 | 25% | 0 | 0% | 1 | 6% | 0 | 0% | 16 | 100% |
| Total | | 66 | 85% | 6 | 8% | 2 | 3% | 3 | 4% | 1 | 1% | 78 | 100% |

Adapted from Heift & Rimrott (2008)

4.2.2. Grammar mistakes

All in all the students made 223 grammar mistakes but only 40 of them were detected. Out of the 40 detected mistakes, 34 were correctly detected, 85%. In 32 of the cases an appropriate change was made by the student, 94%. *MS Word* is rather successful in giving the correct feedback in these cases and the students made an appropriate change given the feedback from the programme. Many of the correctly detected mistakes were mistakes concerning agreement, mistakes that are easily understood by the students. In the 6 cases where *MS Word* found the mistake but failed to give the target word, in 15% of the cases, the students made an inappropriate change each time, something that indicated that the students relied on the feedback given *MS Word*.

4.3. Learner comments in stimulated recall session

In this part a few interesting examples of how the student worked or reacted to the feedback that *MS Word* gave them will be presented. The results will be presented individually. This part of the article ends with the students' evaluation of the spell and grammar checker by *MS Word*.

4.3.1. Ana

As mentioned earlier Ana's retrospection was never recorded but the investigator wrote down the comments made by her directly after the interview.

Ana was very conscious when processing her text. She read carefully through her text when working with the spell and grammar check. She pointed out that *MS Word* was not suitable for correcting verb forms though. Still she chose the incorrect verb form from the list provided by *MS Word* a couple of times. She took time to really think about what she wanted to express before she made any corrections. Ana finished her work by reading through her text dividing it into paragraphs.

4.3.2 Berta

Berta made few mistakes in general and worked rapidly through her text. When doing so she was reading her text though. A couple of times she pointed out that *MS Word* did not provide any good alternatives at all and that she trusted herself even more. At one time *MS Word* indicated an error that was actually a false alarm, and Berta changed her form according to the feedback given. When finished processing the text, she went back and had a second look at it. She commented on having changed an incorrectly inflected verb into another verb that she knew how to inflect in order to please *MS Word*.

4.3.3. Cecilia

Cecilia worked through her text quickly. The performance errors she had made were successfully detected and she corrected them easily. She stopped for a longer time twice to think about the feedback given by *MS Word*. Once when she had to choose a verb tense, and once when she had made up a word that *MS Word* did not recognise. When finished revising her text she had a second look at some mistakes that had occurred after making some corrections.

4.3.4. Dora

Dora worked rapidly through her text being used to the tool provided by *MS Word*. She easily corrected the performance errors since she recognised the word directly from the feedback given. Sometimes when she did not know a word, she had invented one from her previous knowledge of Spanish or English. When *MS Word* was unable to guess the target word, Dora just chose one from the list that she thought would do, something that at times made the sentence more confusing. Dora focused only on the feedback from *MS Word*. At one time she went back in the text to see what she had written in the sentence before. Her revising of the text lacked reflections to what *MS Word* meant by its feedback.

4.3.5. Likert-scale.

At the end of the retrospection the students were supposed to evaluate the spell and grammar check provided by *MS Word* according to the Likert-scale. The students' evaluation is summarised in the following table:

Table 14. EVALUATION OF SPELL AND GRAMMAR CHECKER.

| Likert scale | |
|--------------|-------|
| Informant | Grade |
| Ana | 3-4 |
| Berta | 3 |
| Cecilia | 4 |
| Dora | 3 |

Ana graded the programme by a grade between 3 and 4 explaining that it worked rather well with simple spelling and agreement mistakes, but that it had its flaws when it was dealing with grammar mistakes. Berta affirmed that *MS Word* helped her out, reminding her about the masculine form of certain nouns. Using the Likert-scale she evaluated the programme by giving it grade 3. Cecilia did not feel that she had learnt anything from the use of the feedback provided by *MS Word*. She was used to working with the programme and thought that it was suitable for correcting spelling mistakes, referring at the types of mistakes coded as performance errors in this study. She thought that *MS Word* was good, that it found the mistakes you tend to make and also correct them. Using the Likert-scale Cecilia gave the programme a 4. Dora rejected having learnt anything from working with the feedback given from *MS Word* saying that she did not trust the programme since it often failed to give the correct feedback. She also explained that the tool was more useful when she wrote in English. She makes fewer mistakes in English compared to Spanish. When writing in Spanish she frequently looks the word up on the internet when she is uncertain of how to spell it. In Dora's final evaluation she gave the programme a grade 3 on the Likert-scale, saying that she could not rely on it to help her out.

5. Conclusion and further suggestions and research

From the results of this study it is concluded that *MS Word* efficiently detects all types of spelling errors made by students of Spanish as a second foreign language, and that the programme successfully gives correct feedback when the errors are so called *performance errors*. However, the programme is not efficient enough in giving correct feedback on the *competence errors*. Furthermore, the programme fails when it comes to detecting *grammar errors*. The programme provides a high amount of correct feedback on the grammar errors that it does detect, though. These grammar mistakes mostly concern *agreement*, excluding verb agreement though. It is concluded that *MS Word* fails to detect and correct verb errors, in general. Since verbs are considered one of the most important grammatical features in Spanish in order to communicate successfully, this is alarming.

The proficiency of the students seems to affect the success of the programme, since a more proficient user makes fewer mistakes, or of a more simple character, and thus these errors are more easily detected by *MS Word*. More complicated grammatical errors go undetected. According to this study, the beneficial use of the programme increase with the proficiency of the students both when it comes to errors detected and how to use the feedback. The students in general have an excessive belief in the ability of the programme even though they state that they are critical in their use of it.

To answer the general question of this study, it is concluded that the tool can be used beneficially by a student learning Spanish as a second foreign language when it comes to polishing up their texts. The didactic implications of this study would be to improve students' own ability to detect their own mistakes, e. g. the students should revise their own texts looking at for example agreement and verbs, these being their most frequent mistakes. Then, after scrutinising their texts, they should be taught how to use the programme more efficiently, using all feedback given by *MS Word*. However, when in need of a more thorough revision of a text, a teacher is more efficient than *MS Word*.

In order for a second language learner to be able to rely more on *MS Word*, it is needed to develop it in order for it to detect more mistakes correctly, especially when it comes to grammar mistakes, and improve the programme in order for it to increase the correct feedback on for example the competence errors that it

detects but is unable to correct today. It would also be interesting to conduct further investigation on a larger scale, thus receiving a more complete picture of the mistakes made by second language learners and the mistakes detected and corrected by the programme. Additionally, it would be interesting to investigate if working with *MS Word* can actually develop the students' grammatical awareness in or if it limits the students' way of expressing themselves in order to please the programme.

References

Council of Europe. (2013) *Common European Framework of Reference for Languages: Learning, teaching, assessment (CEFR)* at Council of Europe [on-line]. Available at: http://www.coe.int/t/dg4/linguistic/Source/Framework_en.pdf [2013-04-07]

Heift, T. (2004) Corrective feedback and learner uptake in CALL. *ReCALL* 16 (2). Cambridge University Press, p 413-431.

Heift, T. & Rimrott, A. (2008). Learner Responses to Corrective Feedback for Spelling Errors in CALL. *System*, 36(2), pp. 196-213.

Knutsson O., Ceratto Pargman T., Severinsson Eklund K. (2003) *Transforming Grammar Checking Technology into a Learning Environment for Second Language Writing*. p 38-45

Rimrott, A. & Heift, T. (2005) Language Learners and Generic Spell Checkers in CALL. *CALICO Journal*, Vol. 23, No. 1, p 17-48.

The SAGE Dictionary of Qualitative Management Research. [on-line] Available at: <http://srmo.sagepub.com/view/the-sage-dictionary-of-qualitative-management-research/n100.xml> [2013-03-08]

Screen-cast-o-matic. Available at: <http://www.screencast-o-matic.com/> [2013-03-08]

Skolverket. (2011) "Ämne-Moderna språk" at Skolverket [on-line]. Available at: <http://www.skolverket.se/forskola-och-skola/gymnasieutbildning/amnes-och-laroplaner/mod> [2013-03-17]

Ågren, M. (2008) *À la recherche de la morphologie silencieuse : sur le développement du pluriel en français L2 écrit (Le voyage en Italie)*; Lunds universitet.

Appendix 1 El viaje a Italia



Appendix 2 The Likert-scale

Knutsson O., Ceratto Pargman T., Severinsson Eklund, K. (2003).

| | | |
|---------|------------------|---|
| Grade 5 | Excellent | <i>-I understand exactly what Word suggests.</i> |
| Grade 4 | Good | <i>-Word is a quite good help for me.</i> |
| Grade 3 | Acceptable | <i>-It is hard for me to make up my mind on what Word says, but I take a chance that Word is right.</i> |
| Grade 2 | Bad | <i>-It is hard for me to make up my mind on what Word says, I have to look in my grammar book. With the help of the book I can decide if I should follow Word or not.</i> |
| Grade 1 | Incomprehensible | <i>-I do not understand what Word says. I have to ask the teacher or some other competent person for help.</i> |