



Analysis of the Written Competence of Secondary Education Students in Bilingual and Non- Bilingual Programmes

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Abstract

The present study aims to analyse and compare the written competence of two groups of secondary education students: one enrolled on a bilingual programme and another group enrolled on a non-bilingual programme, including in the analysis grade and gender. Three hundred and ninety-three students in the third and fourth year of compulsory secondary education participated in the study. For the present study, the data come from a written composition activity, which was administered to participants in their own classroom. Four writing measures were used to analyse the written production of the learners: fluency, accuracy, grammatical complexity and lexical complexity. A statistical analysis was carried out with the program R Development Core Team 2012, version 2.15. The results obtained show that: (a) there are significant differences in written competence between the bilingual and the non-bilingual programme groups, with the bilingual program group outperforming the non-bilingual programme group; (b) a trend of development in written competence from third to fourth grade is observed in both groups indicating that the measures of fluency, accuracy, grammatical and lexical complexity progress at the same rate; (c) bilingual programmes may help to diminish the differences observed in favour of female students when learning a foreign language; and (d) there are significant relationships between all the writing measures studied.

1. Introduction

As Larsen-Freeman (2006) [4] states, language development is a complex dynamic process. Written competence as a subset of language competence is also complex and cannot be totally accounted for by performance in any one subsystem. In this study, written competence is characterised by three dimensions of language proficiency: fluency, accuracy and complexity.

The aim of this study is to compare the written competence of third and fourth grade secondary education students enrolled on bilingual and non-bilingual programs. There has not been much work published to date specifically on the comparison of the written production of these two groups of students and this research work intends to shed some light on this question as well as on the more frequently approached one of the effectiveness of bilingual programs.

2. A review of the literature

Highly significant differences were found among three course levels (beginning, intermediate and advanced) for holistic score, mean length of T-units, number of error-free T-units, and mean length of error-free T-units in Tedick's (1990) [6] study on ESL graduate students' writing performance. Beginning and intermediate students were not significantly different from one another in terms of mean length of T-units and overall length, but both were significantly different from the advanced group on these measures. The intermediate and advanced groups were not significantly different from one another with regard to holistic scores, number of error-free T-units, and mean length of error-free T-units, but both were significantly different from the beginning group with regard to these measures (1980: 131-132).

Lasagabaster (2008) [5] examined foreign language competence including written competence in content and language integrated learning (CLIL) contexts. The sample used include a group made up of non-CLIL students in the fourth year of secondary education, another group made of CLIL students in the fourth year of secondary education and a third group made up of CLIL students in the third year of secondary education. Competence in the foreign language was measured via four English tests corresponding to grammar, listening, speaking and writing (2008: 35). Results (2008: 36-38) revealed that the CLIL groups significantly outperformed their non-CLIL counterparts in every single test and in the overall English competence score. Besides, the CLIL approach had a clear impact on all the language skills and the grammar test analysed in this study when students enrolled in the same grade were compared. The third year CLIL group not only did catch up with their fourth year non-CLIL counterparts and but also surpassed them in overall foreign language competence.



Jexenflicker and Dalton-Puffer (2010:169) [1] examined the effect of CLIL provision on written competence. They analysed the written work of students who followed either a traditional EFL curriculum or a CLIL curriculum. They found (2010: 180) that CLIL students showed a wider range not only of lexical but also morphosyntactic resources, which they deployed in more elaborate and more complex structures.

Whittaker et al. (2011) [7] present a study of written development in English as a foreign language produced in a content and language integrated learning environment. The aim of the study was to identify the linguistic resources used to create coherence and appropriate register in the CLIL students' written texts. Texts from history classes were collected annually over the four-year obligatory junior secondary education program from the same students (aged 12 to 16), in two state schools in Madrid, Spain (2011:348). Results (2011:358) showed development in the control of textual resources, as well as some increase in nominal group complexity, over the four years. The study suggests that CLIL settings provide suitable contexts in which to develop written discourse.

Some recent studies compare writers' competence development at different instruction periods. Knoch et al. (2014, 2015) [2] [3] examined students' ESL writing proficiency following a year's study in an Australian university. The study used a longitudinal design (one year) and investigated writing development using global writing scores, as well as measures of accuracy, fluency, grammatical, and lexical complexity. The results of both studies showed that global scores of writing showed no change over time. The only significant improvement participants in the current study showed was in their fluency (measured via text length). That is, they could write longer texts in the time allowed. There were no observed gains in accuracy, syntactic and lexical complexity.

3. Aims of the study

The literature reviewed above shows that students that follow bilingual programs tend to obtain better results in written competence. Moreover, the analysis of the writing measures used to assess such competence show significant differences among course levels and reveal improvement over time. The present study wants to contribute to this line of research in a different instruction context and aims to analyse and compare the written competence of two groups of secondary education students: one enrolled on a bilingual program and another group enrolled on a non-bilingual program, including in the analysis grade. The following research questions are the focus of the study:

Research Question 1: Is there a significant difference in written competence between the bilingual and the non-bilingual groups? Research Question 2: Is there a significant difference in written competence between the third and fourth year groups? Research Question 3: is there a significant difference in writing competence between men and women?

4. Method

4.1. Participants

The participants were 399 secondary education students enrolled in seven different state schools in Asturias.

4.2. Procedure

For the present study, the data come from a written composition activity, which was administered to participants in their own classroom. For the written activity, students had to write on the topic 'Do you think school uniform should be worn at the high school?' All the participants were given 30 minutes for the writing activity.

The writing measures used to analyse the written production of the four groups of learners have been classified into four areas following Wolfe-Quintero et al. (1998) [8]: fluency, accuracy, grammatical complexity and lexical complexity. To measure fluency we counted the total number of words. In addition, we used sentence length (total number of words divided by total number of sentences) as a measure of the fluency of writing. For accuracy, the measures used were error-free sentence ratio (total number of error-free sentences divided by total number of sentences) and errors per word ratio (total number of errors divided by total number of words). Regarding the grammatical complexity measures, we used the sentence complexity ratio (total number of sentences divided by total number of clauses). As an additional measure, we also counted the total number of connectors in the writing samples. Finally, for lexical complexity we used the ratio of the number of word types to the square root of two times the word tokens.

5. Results

A statistical analysis was carried out with the program R Development Core Team 2012, version 2.15. In what follows, we will see the results obtained for each research question formulated.



Research Question 1: Is there a significant difference in written competence between the bilingual program and the non-bilingual program groups?

The bilingual program group significantly outperformed the non-bilingual program group in the general quality of the composition, in three areas of writing (accuracy, fluency and lexical complexity) and in one measurement of grammatical complexity. The bilingual group obtained a higher mean for the composition score ($M=5.95$, Welch test, $p<0.001$). Moreover, bilingual program students' fluency in writing as measured by the total number of words was significantly higher than that of non-bilingual program students ($M=102.25$, Welch test, $p<0.001$). In addition, bilingual program students also significantly outperformed non-bilingual program students in sentence length measured as the total number of words per sentence ($M=20.75$, Welch test, $p<0.001$). Bilingual program students' accuracy in writing as measured by the percentage of error-free sentences and by errors per word ratio was significantly higher than that of non-bilingual program students ($M=0.35$, Welch test, $p<0.001$; $M=0.07$, Welch test, $p<0.001$). The bilingual group significantly outperformed the non-bilingual group in the lexical complexity measure ($M=1.46$, Student's t-test $p<0.001$). Grammatical complexity measures gave mixed results. On the one hand, bilingual program students significantly outperformed non-bilingual program students in one grammatical complexity indicator (the total number of connectors) ($M=3.78$, Welch test, $p<0.001$). However, the non-bilingual group obtained a higher mean ($M=0.57$, Welch test, $p<0.001$) in the sentence complexity ratio as measured as the total number of sentences per clause.

Research Question 2: Is there a significant difference in written competence between third and fourth grade students?

The results showed a trend of development in written competence from third to fourth grade in both groups. We found out that, in the bilingual group, fourth graders significantly outperformed third graders in the general quality of the composition ($M=6.37$, Welch test, $p<0.001$), and in the two measures of fluency in writing, i.e., total number of words ($M=115.50$, Student's t-test, $p<0.001$), and sentence length ($M=21.73$, Student's t-test, $p<0.03$). This trend was also observed in the two measures of accuracy in writing, i.e. percentage of error-free sentences ($M=0.42$, Student's t-test, $p<0.001$) and errors per word ratio ($M=0.05$, Student's t-test, $p<0.001$). Fourth graders also outperformed third graders in lexical complexity ($M=1.60$, Student's t-test $p<0.001$) and with respect to grammatical complexity, fourth graders outperformed third graders in the total number of connectors ($M=4.11$, Student's t-test, $p<0.04$). However, third graders outperform fourth graders in the sentence complexity ratio ($M=0.49$, Student's t-test $p<0.001$).

In the non-bilingual group, we found out that fourth graders significantly outperformed third graders in the general quality of the composition ($M=4.79$, Welch test, $p<0.001$), in the two measures of fluency in writing, i.e., total number of words ($M=93.11$, Student's t-test, $p<0.001$), and sentence length ($M=19.30$, Student's t-test, $p<0.001$), in accuracy in writing as measured by the percentage of error-free sentences ($M=0.22$, Student's t-test, $p<0.04$) and as measured by errors per word ratio ($M=0.12$, Student's t-test, $p<0.001$), and in lexical complexity ($M=1.30$, Student's t-test $p<0.001$). Regarding grammatical complexity, fourth graders outperformed third graders in the total number of connectors ($M=2.78$, Student's t-test, $p<0.001$). However, third graders outperformed fourth graders in the sentence complexity ratio ($M=0.65$, Student's t-test $p<0.001$).

Research Question 3: is there a significant difference in writing between men and women?

When we distinguish by gender, we observe that women outperform men in the general quality of the composition in both groups: $M=6.38$, Student's t-test, $p<0.04$; $M=4.50$, Student's t-test, $p<0.001$.

6. Conclusions

1. Bilingual programmes exert a positive influence on all the language aspects measured.
2. A trend of development in written competence from third to fourth grade was observed in both groups indicating that the measures of fluency, accuracy, grammatical and lexical complexity progress at the same rate.
3. We can affirm that there is a significant difference in written competence between men and women, with women surpassing men in both groups.

References

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