The Jigsaw Puzzle of Teaching Writing in English Now Resolved with Self-Regulated Learning

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Abstract

Society is experiencing growth and profound changes. Among other aspects, we take into account the rapid development of new technologies, which requires new approaches and methodological principles for handling, processing and information processing. All students have the power and ability to become smart if learners learn and use techniques of self-regulation. Thanks to the self-regulated learning cyclic program, students evaluate themselves and establish objectives, strategies and adjust according to their needs and specific learning context, thus improving their outcomes. This article is a reflection based in a wide bibliographic study attempts to shed light on the importance of self-regulated learning in bilingual contexts.

Keywords

Self-Regulated Learning, Creativity, Outcome, Intervention Programme, Writing Competence

1. Introduction

Self-regulated learning is a non-stop inquisitiveness, that power and motivation that needs to be embedded in a student so that he/she always searches for the best possible strategy in relation to studying in order to achieve the greatest efficiency in his/her studies and be an effective and efficient student (Roces & González, 1998).

The majority of the self-regulation theoreticians conceptualize learning as being a multidimensional process involving personal components (cognitive, motivational and emotional), behavioural and contextual (Zimmerman, 1986, 1989).

For (Zimmerman, 1986, 1989; Schunk & Zimmerman, 1994), the self-regulated construct can be defined as...
the process in which the students activate and maintain cognitions, behaviours and affections, all of which are oriented towards the achievement of their goals, or as the process through which goal-driven activities are instigated and maintained, all of which are produced cyclically (Zimmerman, 2000).

There are two known types of self-regulations: active and dynamic. While dynamic self-regulation is subconscious learning, active self-regulation is “conscious, intentional, effortful and involves the regulation of attentional resources, cognitive and metacognitive strategies and presumably motivational, volitional and behavioural recourses as well” (Pintrich, 2000: p. 214). As such, in their synthesis of the research related to the role of internal feedback in self-regulation, Butler & Winne (1995) refer to self-regulation as a deliberate, judgemental, adaptive process.

According to Pintrich (2004), self-regulated learning is a new intellectual tool that assists teachers in managing their classes from another perspective and provides the students with the ability of self-regulating themselves.

2. Objectives and Hypothesis

The general objective is to carry out an intervention programme for improving primary school students’ writing competency in English and the corresponding self-regulation of the process. In addition, the secondary objectives are to augment the students’ motivation and their self-sufficiency and personal initiative in the actual learning process.

The primary contents consist in reading various stories in a cooperative manner and using different self-regulation and gamification techniques to teach students to think about how to write stories in English.

The hypotheses are as follows:

Hypothesis 1: Is there a statistically significant increase between pre-test (pilot/experiment phase or pre-trial) and post-test (after applying the processing) in the writing competency of individual subjected to this processing?

Hypothesis 2: Is there is a statistically significant increase between pre-test and post-test in the self-regulation of the writing process of individuals subjected to this processing?

3. Methodology

3.1. Design

The research conducted follows a quasi-experimental design used for checking the effect of a pilot programme to favour learning self-regulation in primary school students. As such, we have used an experimental design with pre-test–post-test, based on previous researches that use this type of design for evaluating intervention programmes (Hernández, Rosario, & Cuesta, 2010; Nocito, 2013; Núñez, Glz-Pienda, & Rosario, 2006).

3.2. Participants

The participants of this study consisted of 41 5A and 5B primary school graders from C.E.I.P Las Cumbres, located in the south of the Community of Madrid (30 boys and 11 girls with an average age of 10.5). All the subjects (non-native English speakers) have been in a bilingual education system since the first grade, since the school has been providing bilingual education since then, in line with the legal guidelines established by the regional government. The group of students were selected in a random manner, based on the grouping of the various lines in place at the school.

3.3. Instruments

To evaluate the writing competency in English, a rubric-based evaluation system has been used. It comprises 7 levels of competency based on a series of performance criteria, which are identified in the writing production of the subject. The evaluation methodology used is commonly accepted within the scope of English language teaching (Alderson, 2005) and is the same one used at Trinity College in the tests it gives for issuing its diplomas (Trinity College, 2005). The institution uses this rubric-based evaluation instrument because it provides the evaluators with standardised criteria and more objectives to evaluate, in addition to a common framework to
language students on the objectives they are expected to achieve. These standardized rubrics, as such, improve the task of more easily establishing the equivalents between the criteria used by Trinity College and other organisations, such as, for example, Common European Framework of Reference for Languages (CEFR), which measure the levels of the foreign language students and thus establish standardized criteria and objectives that may be used internationally.

To evaluate the writing self-regulation of the subjects, due to the practical inexistence of instruments present for evaluating this specific aspect in the age group of the subjects object of the research (10 - 11 year old children), we have opted to create an ad-hoc one, which is completely validated. The instrument is a self-regulation survey (cognitive, behavioural and environmental) in which the subjects indicate whether or not they perform certain skills before, during and after the writing process. We have opted to use this instrument format based on the recommendations of McClelland & Cameron (2011); Pintrich, Wolters & Baxter (2000); Winne & Perry, (2000); Winne, Jamieson-Noel, & Muis (2002). The self-regulatory skill survey was created using existing instruments, (all of the ones mentioned in chapter 7, and Cleary, 2006; Garcia-Duncan & McKeachie, 2005; Glez-Cabánach et al., 2009; Ramírez et al., 2013; Rizzo, Steinhausen, & Drechsler, 2010; Samuelstuen & Bråten, 2007; Zimmerman & Bandura, 1994), as well as the writing process analysis used to identify functions denoting self-regulation, based on the works performed by Ferrari, Bouffard, & Rainville (1998); Fidalgo et al. (2010); Garcia & Fidalgo (2008); Graham and Harris (1997); Zimmerman & Risemberg (1997). In the first analysis, we identified 75 functions, which we later reduced to 51 after consulting with experts in self-regulated learning (4 professors from the Developmental and Educational Psychology Department at the Universidad Complutense (Madrid)) and language and literature (4 professors from the Spanish Language and Literature Department at the Universidad Complutense (Madrid)).

3.4. Procedure

First, we requested permission from the school to proceed with the implementation of the intervention programme in the existing two lines of 5th graders in the school (as experimental groups). Once we obtained the required authorisation, we proceeded to send the parents a letter requesting their collaboration. The letter explained what was going to occur and the parents were informed they could choose to remove their child (children) from the programme whenever they so desired.

The intervention programme was carried out on eighteen 60-minute sessions on Tuesday (every two weeks), during school hours, from 12:15 to 13:15, from September 16th to October 28th. The programme took place on the first quarter. It was then repeated in the second quarter and finally in the third quarter. The reason to repeat this was to demonstrate again its efficiency and check whether the results improved even more.

The intervention process was developed in the cyclical model of Zimmerman. The first phase involves teaching students the techniques to teach them what to write before thinking. The second phase involves teaching students the techniques to teach them how to monitor their activity. The third phase involves revising what they have written prior to actually submitting their jobs.

During the sessions, the objectives of each session were explained, encouraging the teachers to participate and attempting to create a relaxed environment between the students with controlled activities, as well as guided, free-form production activity to develop creativity and autonomy and personal initiative on the part of students, along with all the benefits of the self-regulation programme.

During the development of the programme, new technologies and other types of activities will be used to help develop all the intelligences of the students. It is another way to achieve the same objective and in this way, we can ensure the students learn self-regulation strategies.

3.5. Data Analysis

Based on the information obtained in the first phase and considering the hypotheses outlined, the data were analysed based on the design specified as the baseline of this study. The data were analyzed using the statistic programme SPSS (Statistical Package for Social Sciences) version 22.0. In order to process and analyse them, the comparison parametric test on the differences between means (paired means) using the t-Student statistic and establishing a significance level of $p < 0.05$.

Once the comparison of the means of the two related samples was established for the indicated significance value, it was concluded that there are significant differences ($p < 0.05$) between the pre-test and post-test phases.
in the Self-regulation level and in the linguistic comprehension level in English.

Considering the total sample in the different timeframes of this study, the results obtained indicated there were significant differences between the means obtained in the self-regulation dimension and in the writing competence dimension in English language at pre-test and post-test time used in this research; as such, it is possible to confirm, at the set confidence level (95%) that the programme (Title) is effective and valid for the reference population.

### 3.6. Results

After the descriptive analysis, the results obtained confirmed the existence of significant differences before and after applying the intervention programme, both at the writing competence and the self-regulation levels of the students. As such, we can certify that the programme is effective.

**Table 1** shows the results obtained in the comparison of self-regulation between pre-test and post-test of the first school quarter (initial phase of the research), where a considerable increment was observed in the intervention programme after the initial execution ($M = 14.98 - 20.85$, $SD = 8.070 - 12.479$).

**Table 2** contains the calculated correlation for related samples ($r = 0.490$), corresponding to the pre-test phases and the first post-test phase of the first school quarter for the self-regulation variable. The correlation value is medium, positive and significant, with a confidence level of 95%.

In **Table 3**, through the $t$-Student statistic, there is a reference to an analysis of the differences between the mean for related samples in the self-regulation variable, where statistically significant differences were obtained ($t = −3.404$, $p ≤ 0.002$) in the initial execution phase, with post-test values that were greater than the pre-test values. Consequently, the null hypothesis is rejected and the alternative is accepted. Consequently, one can state that statistically speaking, there are significant differences between the pre-test and post-test phases due to the execution of the intervention programme.

**Table 4** illustrates the comparison of the self-regulation variable in the second quarter (development phase of the research), where a considerable increment was observed in the intervention programme after the execution in the development phase. ($M = 22.15 - 24.88$, $SD = 12.082 - 15.294$).

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**Table 1.** Comparison self-regulation pre-test (September) and post-test (December).

<table>
<thead>
<tr>
<th>Statistics self-regulation Quarter I</th>
<th>Mean</th>
<th>N</th>
<th>SD</th>
<th>Standard error of mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1 Pre1/A/Sept</td>
<td>14.98</td>
<td>41</td>
<td>8.070</td>
<td>1.260</td>
</tr>
<tr>
<td>Post1/A/Dec</td>
<td>20.85</td>
<td>41</td>
<td>12.479</td>
<td>1.949</td>
</tr>
</tbody>
</table>

**Table 2.** Correlation self-regulation pre-test (September) and post-test (December).

<table>
<thead>
<tr>
<th>Correlations self-regulation Quarter I</th>
<th>N</th>
<th>SD</th>
<th>Standard error of mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1 Pre1/A/Sept and Post1/A/Dec</td>
<td>41</td>
<td>0.490</td>
<td>0.001</td>
</tr>
</tbody>
</table>

**Table 3.** Related samples self-regulation pre-test (September) and post-test (December).

<table>
<thead>
<tr>
<th>Related sample test self-regulation Quarter I</th>
<th>Related differences</th>
<th>95% Confidence level for the difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>SD</td>
<td>Standard error of mean</td>
</tr>
<tr>
<td>Inferior</td>
<td>Superior</td>
<td>$t$</td>
</tr>
<tr>
<td>$gl$</td>
<td>Sig. (bilat.)</td>
<td></td>
</tr>
<tr>
<td>Pair 1 Pre1/A/Sept-Post1/A/Dec</td>
<td>−5.878</td>
<td>11.057</td>
</tr>
<tr>
<td></td>
<td>−9.368</td>
<td>−3.404</td>
</tr>
<tr>
<td></td>
<td>−2.388</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>0.002</td>
<td></td>
</tr>
</tbody>
</table>
Table 5 details the correlation of the related samples \((r = 0.959)\). This demonstrates a positive and significant correlation during the second quarter (with a 95% confidence level) after the execution of the programme in the development phase.

In Table 6, through the \(t\)-Student statistic, there is a reference to an analysis of the differences between the means for related samples in the self-regulation variable, where statistically significant differences were obtained \((t = -1.135; p \leq 0.001)\).

Table 7 corresponds to the comparison of self-regulation in the third quarter (final phase of the research), where a considerable increment was observed in the same, due to the intervention programme after its final execution \((M = 22.15 - 25.56; SD = 12.082 - 15.351)\).

Table 8 provides data corresponding to the correlation of the related samples \((r = 0.914)\) for the self-regulation variable in the pre-test y post-test phases of the third quarter. The correlation value is positive and significant after the final execution of the intervention programme, with the confidence level that has been in use (95%).
Table 9, through the t-Student statistic, contains an analysis of the differences between the means for related samples in the self-regulation variable, where statistically significant differences were obtained (t = −3.344, p ≤ 0.002) in the final execution phase of the intervention programme.

Table 10 illustrates the comparison of English variable between pre-test and post-test of the first quarter (initial phase of the research), where a considerable increment was observed in the intervention programme after the initial execution of the intervention programme for the English language competency. (M = 3.98 - 4.54, SD = 1.107 - 1.051).

Table 11 illustrates the correlation of the related samples (r = 0.398). This value indicates it involves a positive and significant correlation between the pre-test and post-test phases for the first quarter in relation to the execution of the English variable in the two specified time periods (with a confidence level of 95%).

Table 12, through the t-Student statistic, contains an analysis of the differences between the means for related samples in the English variable dimension, where statistically significant differences were obtained (t = −3.033, p ≤ 0.004.) in the initial execution phase, because the post-test values are greater than the pre-test values. Consequently, the null hypothesis is rejected and significant differences are admitted between the means in English between the pre-test and post-test phases of the study.

Table 13 displays the results of the English variable in the second quarter of the school year. Based on the values obtained between the pre-test and post-test phases (M = 4.61 - 4.80, SD = 1.202 - 1.346), it is possible to
verify the significance of the intervention programme in English after the implementation has been completed.

Table 14 illustrates the correlation of the related samples \( (r = 0.787) \), corresponding to the comparison in English of the results obtained in the second quarter of the school year between the two indicated phases. This correlation is high, positive and significant, with a confidence level of 95%; as such, we can state the relationship between the two indicated time periods (December phase (Pre-test) and the April phase (Post-test), after the execution of the programme.

Table 15 provides the results corresponding to the differences between the means for related samples in the English dimension. The t-Student statistic was used. The t value obtained \( (t = -1.482, p \leq 0.146) \) allows the null hypothesis to be rejected and accept the negative one; as such, the influence of the execution of the programme in English between the indicated phases is accepted, with a confidence level of 95%.

Table 16 shows the comparison of comprehension in the English competence for the third quarter of the school year (final phase of the research), where there is a significant increase of the intervention programme after the final execution in the English variable \( (M = 4.61 - 4.73; SD = 1.202 - 1.323) \).

Table 17 shows the correlation of the related samples \( (r = 0.687) \) between the pre-test and post-test phases for the third quarter of the school year, with a confidence level of 95%, after the final phase of the execution of the programme.

Table 18, through the t-Student statistic, references an analysis of the differences between the means for related samples in the English dimension, where statistically significant differences were obtained \( (t = -0.777, p \leq 0.442) \) in the final phase of the execution of the programme.

In summary, it can be concluded that the two variables of this study increase significantly in the three phases as a consequence of or due to the execution of the intervention programme (in its initial phase, intervention/development phase and final phase). Nonetheless, based on the referenced data, there is a greater influence in the self-regulation variable than in the English variable due to the execution of the programme.

In short, everything leads to affirm that there are significant differences between the previous and subsequent phases when the intervention programme is applied, both in the writing competence and in the self-regulation of students; as such, we can conclude with the confirmation of the effectiveness of the execution programme used in this study.
Table 16. Comparison English pre-test (April) and post-test (June).

<table>
<thead>
<tr>
<th>Related sample statics English Quarter III</th>
<th>Mean</th>
<th>N</th>
<th>SD</th>
<th>Standard error of mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre2/I/Apr</td>
<td>4.61</td>
<td>41</td>
<td>1.202</td>
<td>0.188</td>
</tr>
<tr>
<td>Post2/I/Jun</td>
<td>4.73</td>
<td>41</td>
<td>1.323</td>
<td>0.207</td>
</tr>
</tbody>
</table>

Table 17. Correlation English pre-test (April) and post-test (June).

<table>
<thead>
<tr>
<th>Correlations English Quarter III</th>
<th>N</th>
<th>Correlation</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1 Pre2/I/Apr and Post3/I/Jun</td>
<td>41</td>
<td>0.687</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Table 18. Correlation English pre-test (April) and post-test (June).

<table>
<thead>
<tr>
<th>Related sample test English Quarter III</th>
<th>Related differences</th>
<th>95% Confidence level for the difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Pair 1 Pre2/I/Apr-Post3/I/Jun</td>
<td>−0.122</td>
<td>1.005</td>
</tr>
</tbody>
</table>

4. Discussion and Conclusion

Based on the results obtained and the statistical analysis conducted, it is confirmed that there are significant differences before and after applying the intervention programme, both at the writing competency and the self-regulation levels of the students; therefore, we can confirm that the programme is efficient.

As such, we can confirm that the general objective of the thesis, which was to carry out an intervention programme in order to improve the writing competency in English of primary school students and their self-regulation of the process has been accomplished.

The first hypothesis was to determine if there was a statistically significant increase between pre-test and post-test in the writing competency of subjects submitted to this. This hypothesis has been confirmed based on the data obtained in the repeated measurement test.

Regarding hypothesis 2, it was whether there was a statistically significant increase between pre-test and post-test in the self-regulation of the writing process in individuals subjected to this process. After the statistic analysis, this hypothesis was confirmed.

This piece of data is in line with the latest researches conducted in relation to self-regulation at the writing level, as per Ferrari, Bouffard, & Rainville (1998); Fidalgo et al. (2010); García & Fidalgo (2008); Graham & Harris (1997); Zimmerman & Risemberg (1997).

The bibliographical review of this study on self-regulation in relation to writing stories in English is supported on the current ideas, which consider that learning self-regulation is a skill par excellence that places us in the active gravity of the control over the action and define learning self-regulation as a complex cognitive process that involves the construction of knowledge on the part of the learners, who are in charge of implementing certain strategies so that they can create their knowledge, based on the new information they are attempting to integrate. So that learning is self-regulated, these activities are planned in advance and they need to be controlled while they are being executed. As such, it is essential to develop the ability of managing the process and to use different types of strategies, both cognitive and motivational, through which the learning-related processes are carried out, before, during and after the delegated task. Likewise, regulation and control over the various aspects related to context and the actual behavior are required.

In future research efforts, the aim is to replicate the results obtained in this particular research in other sam-
gles, as well as implement the intervention programme in other academic contexts. It would be equally interest-
ing to conduct qualitative analysis during the intervention to better understand the self-regulation process of
students.

Regarding the limitations of the study, the following ones are particularly noteworthy:

**Absence of Control Group:** It should be included in subsequent studies.

**Unequal Gender Make-up of Sampling:** There is not an equal number of boys and girls. Even though this
was not the target of the study, it could be developed in subsequent ones.

Regarding implications and future decisions for the research and intervention, these are evident. First, there is
a need to develop reliable measurements, which are valid and noticeable at all levels of self-regulation and
which can be used by a wide range of children groups. Second, it is important to design interventions targeted to
key components of self-regulation during different human development periods, which also translates into eve-
day contexts.

In summary, this research is the first step that supports a line of work aimed at favouring learning self-regula-
tion in bilingual primary school students.

Finally, the following arguments should be considered:

Carrying out a theoretical review and attempting an exercise involving the measurement of a complex con-
struct which is at the same time so current, as is the case of self-regulated learning, can at first seem unuseful,
 boring and gruelling, due to the large amount of information available presently. Nonetheless, a new attempt to
organise and conceptualise this accumulation of information is relevant, because many of the sources of info-

mation available come from English-speaking countries, which may often lead to confusion in clarifying con-
cepts so that they can be used in considerable research being conducted in Spanish-speaking countries.

Secondly, it is worthwhile delving into this complex world of human learning, because students in particular
and human being in general are currently being required to use cognitive strategies so that they can continue
learning through their entire life and also self-regulation strategies of their actual behaviour, which makes them
more efficient subjects in this ever-changing word full of changes.

On the other hand, because in everyday educational practice, teachers can easily recognise self-regulated stu-
dents, this situation should be taken full advantage of by professors in order to implement teaching strategies so
that students can develop their self-regulation strategies accordingly. On the other hand, the success in the use of
self-regulatory strategies requires input from a variety of sources and one that is fundamental are teachers, who
when they know and develop the principals of self-regulated learning open a whole new set of possibilities to
their students.

In summary, self-regulation is a critical indicator of the social and academic results and the reaffirmation of
these skills may help children demonstrate positive development at an early age.

Writing composition cannot be understood without comprehending how the writing processes are invoked and
sorted and how the environment and behaviours of the writer are orchestrated and managed accordingly. We
hope this self-regulation programme will contribute to the development of writing models, through the stimula-
tion of more thoroughly developed descriptions of the control process in writing, as well as to the promotion of
more interest in research in this field. I hope that these ideas and reactions in this respect will promote an active
and constructive dialogue among people interested in the development of writing and self-regulation.

In conclusion, we are at the threshold of understanding how writing becomes self-regulated. Writing is one of
the most complex skill set taught at school and there is generalised evidence that it is something that is learned
poorly. According to evidence at the bibliographical and empirical level, the development and use of these val-
uable skills require high levels of self-regulation. Finally, we already know that writing self-regulation is not a
single ability but rather a complex system of interdependent processes that are closely linked to an underlying
sense of self-efficiency as a writer. Even though this complexity adds a challenge to teaching writing, a social
cognitive account of these processes and self-beliefs may serve to guide future lines of research and instruc-
tional development.

If so, what makes someone a good writer? Few would be so arrogant to attempt to find a complete response to
this question. Even so, while our conclusions are still somewhat speculative, we suggest that at least in part what
makes someone a good writer is an extensive rhetorical and linguistic knowledge as well as a clear appreciation
of how ones objectives in writing will be received by different types of audiences. Nonetheless, good writers al-
do write properly, with precision and beautifully in order to bewitch and inform their target audiences. It is that
mysterious and indescribable beauty of a well-written phrase which is so difficult to capture in an empirical study.
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