Is writing an English essay on a word processor perceived as more beneficial for learning than writing it out by hand?

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80 undergraduate students studying English as a second language were asked whether they found a writing task based on the Hayes and Flower model for composition (1981) more beneficial for learning than the standard handwritten essay. The assignment was to be composed on a computer and students were expected to use reference materials. A questionnaire consisting of both a closed and an open-ended question was administered. Responses to the open-ended question were analysed by classifying students' answers as either advantages or disadvantages. The results indicate that the majority of the respondents (75%) found the new format to be more beneficial for learning. A total of 8 combinations of advantages and disadvantages were identified: some students listed two disadvantages but no advantages. Further investigation is required to analyse whether students' perceptions are consistent with their actual progress as measured by their grades or/and by the number of errors in their written assignments.

Keywords: CALL, ESL, Assessment, Learning outcomes.

1. Introduction

The aim of this study is pedagogic: as teachers of ESL for undergraduate students, we wanted to understand which form of assessment would generate the best learning outcome for students. Over the years, we have noticed that students make little, if any, progress in their written assignments from one year to the next, one reason being that they seldom use self-monitoring or cooperative strategies (Rubin, 1981) to improve the quality of their writing.

We investigated our students' own perceptions regarding essay writing using reference materials for their composition and word processing software. This form of assessment has at least two advantages: first, it corresponds, as stated by Beacco (2007), to a situation the students are more likely to encounter in everyday life; secondly, the assessment process itself offers as another learning opportunity.

The Hayes and Flower "cognitive process mode of the composition process" (1981) maps out the mental behaviours of writers at work as a flowchart of boxes. The model takes into account the writer's long-term memory (or her/his prior knowledge and language proficiency) and three types of processes: planning, translating and revising. The revising/reviewing box includes two subprocesses: "reading/editing". At all three stages, monitoring is also taking place. Our goal was to downplay the role of prior knowledge and to alleviate working memory (Baddeley 1990) by using reference materials. By eliciting metacognitive learning strategies, such as self-monitoring, we intended to help the students review-revise and edit their first draft.

The purpose of this research is to answer three questions:

1. What proportion of respondents perceived the new format of assessment as more beneficial?
2. How is the number of advantages and disadvantages distributed in the class?
3. What are the main advantages and disadvantages evoked by the students?

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2. Method

Subjects

The subjects were 80 third-year undergraduate students who were studying English for social sciences at a French university.

Assessment format

The previous assessment system evaluated two skills (reading and writing) and students were not permitted to use reference materials; the new format, which forms the subject of this investigation, involves the following:

- the essay should be written on a computer with word processing software;
- reference materials should be used;
- students should submit a list of ten items that they had looked up in order to complete the assignment;
- only one skill would be evaluated (*i.e.*writing).

While the previous format took into account language proficiency and prior knowledge, the new format downplayed the role of declarative knowledge (whether linguistic or content-related (Anderson 1994)) and alleviated working memory (Baddeley 1990). This in turn reduced the cognitive load (Sweller, *et al*. 2007).

Data

The data consists of students' responses to a questionnaire (n=80) composed of two questions. The first required students to decide whether or not they agreed with the following statement: "Writing my essay on Word using reference materials was more useful that writing it out in hand without using reference materials". The second question was open-ended and invited students to explain their answer to the first question.

Data analysis

First, the content of the open-ended question was analysed and classified in terms of perceived learning advantages and/or disadvantages. For example, in the following response, I identified two advantages (linguistic and content-related) and one disadvantage (the lack of time):

> « *I found it far more beneficial to be able to use reference materials because it helped me improve my content and using a dictionary helped me with vocabulary and with language in general. However, the time we were given was too short. Having an extra half an hour or one full hour would have been better* ».

Having collected all the advantages and disadvantages cited by the students, 8 types of combinations emerged. Eventually for each combination a "balance of advantages" was calculated as follows:

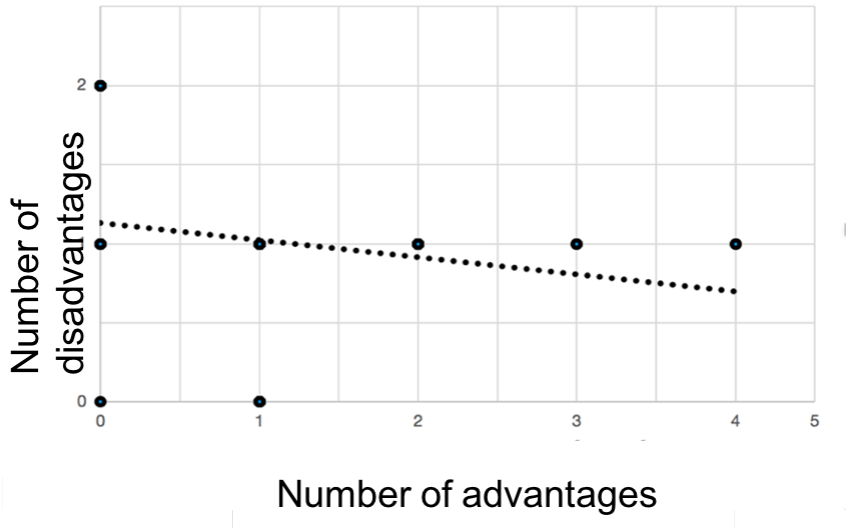
- equal number of advantages and disadvantages: neutral balance of advantages;
- more advantages than disadvantages: positive balance of advantages;
- fewer advantages than disadvantages: negative balance of advantages.

3. Results and discussion

Question 1: Proportion of respondents having perceived the new format as more beneficial
Three-quarters of respondents (59/80) found the new assessment format more beneficial for learning than the previous format. Analysis of students' responses to the open-ended question revealed 54 advantages *vs*. 45 disadvantages: the number of advantages mentioned in the open-ended question outnumbered the disadvantages by 20%. This is consistent with the answer to the closed question which suggested that students associated the new format with better learning outcomes.

Question 2: Group distribution of advantages
This graph shows the combinations of advantages and disadvantages as identified by the students: the *y* axis represents the number of perceived disadvantages; the *x* axis represents that of perceived advantages[2].

Graph 1. The 8 combinations of advantages and disadvantages



We can draw three conclusions from the graph. First, the maximum number of disadvantages listed is 2, while the maximum number of advantages is 4. Second, it is only those students that identify 2 disadvantages that do not identify any advantages. Finally, the remaining students find no more than 1disadvantage and up to 4 advantages. There are two groups: one with at least one disadvantage and no advantage and the others with at most 1disadvantage.

Question 3: The Main advantages and disadvantages identified by the students
The following table reveals the advantages and disadvantages listed in response to the second question. While the list of advantages is varied (4 types) the only recurring disadvantage mentioned by the students was the perceived lack of time to complete the assignment.

Table 1: Classification of the topics listed by the students

Advantages 54	Language	20
	Other	15

[2] The points on the graph do not take into account the total number of students: they show only the combination of advantages and disadvantages.

	Better content	8
	Relevance of learning	7
	Less stress	4
Disadvantages 45	Lack of time	35
	Other	9

This exploratory study has several limitations linked to the process of self-reporting.
First, approximately half of the students involved in the study provided answers to the questionnaire and it is not possible to know whether the remaining students would have responded in a similar manner.
Second, this survey does not question the adequacy of the students' perceptions of learning benefits and their improvement. The extent to which students' perceptions of progress reflect genuine progress could be measured by looking at how the grades obtained and the number of errors in their assignments vary according to the assessment format used. A hypothesis based on the depth of processing theory (Craig & Lockhart, 1972), suggests that the account of their research might have helped the learners encode the new words on a deeper level.

4. Conclusions

As language teachers, we hypothesised that the disadvantage mentioned most frequently (*i.e.* verifications and their account being even more time-consuming than the reading and writing task previously proposed) could be interpreted at least in two ways. The first interpretation is related to the learners' understanding of the assignment's objectives: one student stated that verification was as an extra task disconnected from the writing process. The second interpretation concerns students' familiarity with the task: students may have struggled with time management because it was the first time they had been assessed in this way. Both interpretations highlight the need to better implement self-monitoring for writing tasks.

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