

تاریخ وصول: ۱۳۸۶/۱/۲۵

تاریخ تأیید: ۱۳۸۶/۹/۱۱



Searching for a proper data collection method to reveal the cognitive processes taking place in EFL writer's mind while writing

جستجوی روش جمع‌آوری اطلاعات برای پی‌بردن به فرایندهای ذهنی نویسنده به هنگام نوشتن

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با صدای بلند* مناسب‌ترین روش برای دسترسی به اطلاعات مربوط به فرایند ذهنی نویسنده باشد.

کلیدواژه: نوشتن، فرایندهای ذهنی نویسنده، پرسشنامه، مصاحبه، فکر کردن با صدای بلند.

چکیده: در این مطالعه شش روش مختلف جمع‌آوری اطلاعات برای پی‌بردن به فرایندهای ذهنی نویسنده در هنگام نوشتن مورد بررسی قرار گرفتند. نتایج نشان داد در روشهایی (چه کتبی و چه شفاهی) که با فاصله از زمان نوشتن انجام می‌شود (به عنوان مثال پرسشنامه و مصاحبه) احتمال زیادی برای از بین رفتن اطلاعات وجود دارد. از بین متدهای بررسی شده به نظر می‌رسد که «فکر کردن

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I. Introduction

The selection of the data collection method in any language study is mainly based on two important factors: 1) the objective of the study, 2) the language skill involved in the study. In this article, the advantages and disadvantages of six different data collection methods, which have been categorized under two main categories of retrospective and introspective methods, will be examined to identify which method is a better approach to reveal the cognitive processes that are involved in the writing process.

II. Retrospective methods

Retrospective (recollective) methods require subjects to think back to the time they wrote and to attempt to reconstruct how they did it. Although these methods can be useful in providing information about the general behavioural sequences in the process of writing such as planning and revising, they do not seem to be able to provide the necessary information about the time of writing. This is due to the fact that the time distance between retrospection and writing increases the probability of losing information.

II. 1 Questionnaire

Questionnaire is considered a retrospective method because in this method questions are

presented to be answered by the respondents after the activity of writing has taken place. Questionnaires are rather popular methods of data collection in language studies.

A written questionnaire can be administered in different ways such as hand-delivering, sending by mail or gathering the respondents in one place and letting them fill out the questionnaires. Questionnaires can range from highly structured questions that require yes-no responses to semi-structured and less structured questions asking respondents to describe or discuss their language use behaviour. Certainly questionnaires have their place in determining people's attitudes about what they want and what they believe they do. However, they cannot reveal the complex processes that take place during a writing task. For example, Scherff and Piazza (2005) did a survey on their students' perceptions of their writing instruction. They wanted to know how often their students write and what kinds of writing do they do in English language classes. Furthermore, they asked their students if they believed their teachers provide models. Although the answers to these questions could have been elicited through questionnaire, they admitted that: "these data provide only one snapshot of a complex phenomenon (p: 271). They also point out that researchers have to be cautious about reaching definitive conclusions based on a survey because it is never a complete

one. Baker and Bonkit (2004) came to the same conclusion when they studied the use of learning strategies in reading and writing. They used questionnaire as one of their data collection methods and realized that due to the limited number of strategies that could be listed in the questionnaire, the use of some strategies were not as high as the other ones.

In spite of the fact that questionnaires are attractive means of collecting data, because responses can be readily quantifiable and analyzable, they cannot be used in studies of cognitive processes of writing due to the fact that asking subjects in general terms what they do while writing may not necessarily lead to an accurate answer to the question. Once learners move away from instances of language use behavior, they may also become less accurate about their actual strategy behavior (Cohen 1987). Learners may overestimate or underestimate the frequency of use of certain strategies and they may also be unaware of when they are using a given strategy. Besides, there is the problem of memory deterioration between the experience of writing and the time of recollection. Cohen (1998) mentions another problem which is the time lapse between the two tasks which can increase the subjects' reinterpretation of what took place during the writing process and the data is likely to be influenced by the subjects' notions of what they should have done.

II. 2 Interview

An interview is a data-collection method which involves oral questioning of respondents. Answers to the questions posed during an interview can be recorded by writing them down or by tape-recording the responses, or by a combination of both. Interviews can be conducted with varying degrees of flexibility and based on this, they can be divided into three types: unstructured, semi-structured and structured. As the names suggest, the amount of control over the questions in each type is different. Some researchers consider interviews as the oral form of questionnaires; therefore, most of the problems that were mentioned about using questionnaires to collect data on the writing process do apply to using interviews as well. However, it should be mentioned that if used in conjunction with other methods of data collection, interviews can be fruitful sources of information.

II. 3 Diary

The third possible retrospective method is diary in which the learners are asked to focus on their writing process and to keep a record of what they do when they write over a period of time. There are two drawbacks to study the writing process using this method. The first one is the problem of the co-operation of the subjects and their concentration on the task to record the details of their writing process. The

second one is the typically small number of subjects in diary studies which can restrict the data (Nunan, 1992).

III. Introspective methods

Introspective methods are used at the time when the activity of writing is taking place and examine the thoughts and strategies that are used by the writers when they are involved in the process of writing.

III. 1 Observation

Observation is a method that involves the systematic watching and recording the behaviour of subjects. There is more to observation than just looking. In fact, in observation there are a range of skills involved and observing is just one of them. Others include listening, participating, contributing, pursuing, questioning, and so on. There are two main kinds of observation: 1) participant observation and 2) non-participant observation. The former has the observer take part in the situation he/she observes; however, in the latter the observer watches the situation, openly or concealed, but does not participate. It seems that the most important disadvantage of observation as a method to study the writing process is that what happens in the mind of the writers while writing cannot be observed; therefore, researchers suggested another method which is observation followed

by retrospection.

III. 2 Observation followed by retrospection

This method has been used as a method to study the writing process by researchers like Matsuhashi (1979). They videotaped their subjects while they wrote and after each session the researchers reviewed the tapes with the writers. Then the writers were asked to provide information concerning what went on in their minds at crucial points. Apart from the problem with retrospective methods mentioned earlier, providing the necessary equipment to videotape a rather large number of subjects is a problem that not many researchers can easily deal with.

III. 3 Think aloud

Since writing is generally an internal or mentalistic process, a record of what goes on in the writer's mind during the act of composing is needed. O'Malley and Shamot (1990) consider writing and its problem solving strategies as covert ones that require introspective forms of data collection. They state: "since the strategy application becomes proceduralised, the data collection requires a technique that interrupts ongoing mental processes." Nunan (1992) has the same view and believes that retrospective techniques in which subjects think back over actions performed at some prior time do not reveal

the actual mental processes. Therefore, it seems that think aloud (also called verbal report or self-revelation), which has been successfully used to study cognitive processes is one of the best methods to study the writing process. Think aloud data, obtained by asking people to tell us what they are doing when they perform certain tasks, is only available at the time that the language learning or use take place and according to Ericsson and Simon (1984) produce verbalization of at least a subset of the thoughts heeded while completing a task. These verbalizations reflect states of heeded information and do not describe the details of information nor why particular information was heeded. The transcript of think aloud which is called a verbal protocol is often extraordinarily rich in data and together with the writer's notes and manuscript it can give a detailed picture of the writer's composing process.

III.3.a History of verbal report in writing

Using verbal reports, according to McDonough (1995), has a long history in both psychology and social science, though it has only recently been introduced into second language learning research.

Verbal reports in the study of writing originated from the new approach to writing research in which researchers should shift their study of writing from product to process.

In order to study the writing process, researchers began observing writers at work, a move that necessitated the adaptation and development of a new approach to study composing. Emig (1971) was the first to attempt using the think-aloud methodology. Since then, studies in writing shifted from analyzing written texts to understanding how texts are constructed and verbal protocols have been useful in helping researchers understand more about the 'how' of writing by documenting some strategies and processes of invention that underlie written texts. Central to the effort was the work of Flower and Hayes (1981, 1984). In their early work, think-aloud protocols and cognitive psychology converged in a theory of composing. Think-aloud has also been used in L2 writing (e.g. Zamel 1983, Cohen and Cavalcanti 1990) to investigate the writing process of L2 learners. It has to be mentioned that these studies concentrated on the process of writing and other writing studies such as error analysis studies and also many of the dictionary studies were product-oriented and therefore inferred process from product.

III.3.b Criticisms and defenses

Critics of the think-aloud method have pointed to several methodological problems that will be briefly reviewed here. One group of criticisms concerns the potential distorting

side effects that verbal reporting may have on the task, for example, the writing process itself. The related point is that verbal report might put too much burden on the learners' memories for them to report mental processing with accuracy. The same type of potential effect that might arise when subjects do a task in the target language and report it in their L1 or another language has been mentioned by Faerch and Kasper (1987). They believe the problem is that the subjects are likely to be recording the information, which may in itself cause information to get lost due to limits of memory capacity as well as other factors such as inaccuracy during the translation of thoughts. The reporting may alter the original thought processes more than when no recording takes place.

The above concerns have received attention and response. For example, people talking through their solutions to problems were compared to people performing silently. The results showed that the actual steps people take to solve the problems are the same under both conditions; but talking aloud reveals these steps and decisions overtly. Studying comparing reading aloud and reading silently showed that skilled readers comprehend as much by either method but take longer to complete the text when reading aloud. Ericsson and Simon (1987) confirmed the results and reported that giving a

concurrent verbal report may slow down but does not change the process. Following these results, Smagorinsky (1989) argues that while thinking aloud during other perceptual-motor processes can seriously interfere with expert and novice subjects' performance, it is unlikely to do so during writing and text-revision tasks, because perceptual-motor processes associated with transcription (using pen/pencil) are highly automated for adult subjects.

Some other critics argue that the most data provided by verbal report can do is help generate hypotheses that are not valid to verify cognitive processes. Ericsson and Simon (1984) who have made the most comprehensive defense of think-aloud protocols, have argued that the mentioned criticism is not in fact inconsistent with the idea of verbal reports. They point out that just as with any other kind of data, it is crucial to establish the limits of applicability. Thus, they argue that people can only report what they can pay attention to. It should be mentioned that it is not to deny that there are processes which are not available for attention.

Another aspect of verbal report data that has been criticized is that its coding and interpretation cannot be objective. Cooper and Holzman (1983) argue that no data collection method can elicit all cognitive activity. Protocols which are the result of think aloud

method are therefore incomplete and the gaps in the protocols require the researcher to infer processes. Therefore, the readers must trust the insights of the investigator for an understanding of the protocols' significance. It is undeniable that encoding and analyzing empirical data, whether verbal reports or other kinds of data, always takes place in some kind of theoretical context. In coding and generalizing we cannot ever achieve complete independence from theory.

IV. Conclusion

All in all, it seems that the data collection methods that require the subjects to think back to the time of writing are not proper methods to collect data about the cognitive processes that exist in the process of writing. Regardless of how critical some have been of studying composing through analysis of protocol data, such research has contributed significantly to how writing is presently understood. Certainly, protocols demand coding and interpretation, but so do all other forms of data, whether verbal or non-verbal. Verbal protocol data and the methods of analyzing it are likely to miss some data; however, they are able to reveal cognitive processes that are not accessible through other data collection methods.

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