

Electronic Introspection in FL Learning

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ARTICLE INFO

Article history

Received: December 14, 2020

Accepted: February 10, 2021

Published: March 31, 2021

Volume: 10 Issue: 2

Advance access: March 2021

Conflicts of interest: None

Funding: None

ABSTRACT

This work tries to revive interest in introspection and accommodate it in foreign language e-learning. It sets up a theoretical construct to probe into learners' mental processes during acts of learning. The aspiration is to involve learners in acts of self-directed verbalizations of thoughts to externalize their learning mechanism and make it manageable object of study. It is believed that opening such a window on learning trends can illuminate our understanding of important concerns that are usually in question.

Key words: Introspection, Retrospection, Selfiespection, Procedural Knowledge, Declarative Knowledge

INTRODUCTION

Linguists have always been intrigued by the way foreign language (FL) learners react to language teaching material. Theorists and practitioners working in this field have worked out tools of investigation to probe into learners' learning mechanism to come up with ideas on what may facilitate or slow down learning during the learning *process*. This kind of research interest is often introduced against the background of the more tangible area of *what* learners can produce during acts of learning.

The distinction between learning process and learning product is sometimes maintained in linguistic science representing two major styles of research. Process-oriented studies are interested in the course of actions during which learning is supposed to take place. It may look into issues like *how* learners negotiate language elements, what queries go into their minds and what decisions they make while they attempt to piece together those elements. Product-oriented studies, on the other hand, are interested in *what* this course of action has brought about, i.e. what learners were able to produce at the end of a learning event. It may take the form of devising ways of examining learners product, pointing out cases of deviation from language norms then categorizing such cases and, perhaps, trying to explain the causes behind them. So, while the process orientation is interested in *how* learning takes place the product orientation addresses issues like *what* has been learnt.

This separation, indeed, may look arbitrary in a sense since both process and product are two integral parts that are naturally simultaneous during learning. Each is evident only when the other part is there. The separation, however, is maintained to provide a degree of research focus while studying the highly complex issue of FL learning.

AN EARLY UNCERTAINTY

But a research hazard may immediately light after this separation is made clear. How can possibly one study learning process? It is definitely something inaccessible since it takes place in the learner's mind. With product, one would be dealing with feasible spoken or written material that can be directly worked on. But mental processes are elusive entities that may look difficult to pin down to scientific investigation.

Linguistic science, therefore, has set itself the goal of designing tools of investigation to study the course of mental activities that take place during FL learning. The expectation is that opening a window on such processes could illuminate our understanding of the nature of FL learning. It is in this direction that the present work intends to make a contribution making use of one of the electronic facilities of the present age.

THE EARLY BEGINNINGS

A style of research broadly known as introspection took shape over long periods of time. It was assigned the job of externalizing what goes in the learners mind during acts of FL learning. This enterprise seems to be originated in clinical psychoanalysis (Freud, 1914) which rests on the assumption that causes of mental disorders can be arrived at through spontaneous flow of verbalization of thoughts. During treatment sessions, the psychotherapist tries to make the patient aware of past experiences in order to trace the connection between such experiences and present behaviour and judgments. This is where linguistics could enter upon a new phase of history. It made use of the concept to arrange for sessions in which FL learners were requested to verbalize

their thoughts while engaged in FL use, receptively when they were comprehending language in acts of reading or listening, or productively when they were speaking or writing. It was believed that learners' verbalized judgments could disclose the type of experience they had had with the FL. This style of research seems to have been popular in the eighties when evidence was usually collected, categorized and formalized to help in drawing a reconstruction of learners' abilities and modes of learning (See Cock, 1986 & Tarone, 1988 for thorough discussions of the issue, and Cavalcanti, 1987 & Gillette, 1987 for actual implementation of introspection). The concept of verbalization of thoughts was developed later into the think-aloud method which is often used to collect language users' protocols while involved in acts of language use (van Someren et al., 1994).

This style of research, we believe can be accommodated into e-learning, an advancement in science still in its infancy awaiting more research but which points to impressive prospects. But before any attempt is made in this direction, it is, perhaps, important to acquaint ourselves more with introspection as a mode of human behaviour and the types of human learning it can reach. It seems to be useful to know about any possible interface between human knowledge and the human capacity to express in words certain aspects of this knowledge.

COGNITIVE JUSTIFICATION

We alluded above to the idea that introspection has its roots in psycho-analysis which goes back to the beginnings of the last century. More recent studies, however, have tried to find justification for introspection in terms of cognitive psychology. One of the concerns of this discipline is to account for the means by which people acquire, organize and use knowledge about the world (cf. Bower & Cirilo, 1985). The ability to use language is considered one form of that knowledge.

Cognitive studies distinguish between two types of knowledge. The first is the one we use in everyday life in certain well established and controlled manners. This is called procedural knowledge. We usually employ it in the form of routine procedures. The second requires slow pace of performance and attention. Its deployment in everyday life has not been mastered yet. While the first type of knowledge goes unnoticed, the second is usually *attended to* and can be commented on by the person conducting the activity. This is why the latter type is called declarative knowledge (See Anderson, 1976 for an overview; and Berge & Hezewijk, 1999 for a more recent view).

Now, FL learning and use involves both types of knowledge, knowledge which is (or believed to be) controlled and knowledge which is not. Introspection is believed to be capable of tapping evidence on both types of knowledge through verbalization sessions (See Nation & McLaughlin, 1986 for example). Instances where language use goes smoothly undisturbed represent procedural knowledge while declarative knowledge is represented by hesitations, false starts, back tracking, and the like during manipulation of language material. The crucial point here is that cases of the latter type can

be commented on by the FL learner in sessions organized and structured for this purpose. This is, of course, not to deny other areas of study where introspection fits in. The idea of insight into the self, for example, has also been developed into the concept of self-awareness (Eurich, 2017). Attending to one's own perceptual experiences provides a focus on what is going on inside and what kind of response is in preparation.

TYPES OF INTROSPECTIVE METHODS

Our treatment of introspection has been sketchy so far. We need to know in some detail in what forms it may exist before we propose any further use of it. We indicated earlier that the term introspection is used to refer to a tool of investigation whereby FL learners can be requested to report to investigators what goes in their minds regarding a learning event. This use of the term, however, is a catch-all one. Indeed, theorists have worked out a range of possibilities which are often covered by the term introspection, each has different research potentials and could suit different research objectives (See Zimmermann & Schneider, 1987).

As a start, a distinction is usually made in the relevant literature between processes which go on while a learning activity is being performed and *memory* for such processes. A learner's verbalization of thoughts concurrent with the activity is called introspection while the term retrospection is reserved to cover thoughts *after* the activity. In an introspection session, for example, a learner (usually called subject of, or informant in, a study) may be asked to speak up his mind while engaged in, say, role playing or dialogue completion exercises. This could tap learners' immediate reactions to language material, a skill needed, for example, in situations where the FL user has to give an instantaneous response. Retrospection, on the other hand, is suitable to disclose processes related to experiences a learner could have had during a language activity; as in a session structured to elicit judgments made during composition writing, for instance. The term introspection, however, is sometimes used in a general sense to cover both introspection and retrospection.

But theorists seem to have noticed that learners are sometimes capable of correcting themselves when they have enough time to reconsider a performance they have made. This is reflected in a distinction often made in linguistics between language competence and language performance (Chomsky, 1965). The first is concerned with knowledge *about* the system of language, as in knowledge of rules of grammar, while the second is concerned with the ability to deploy this knowledge in actual language *use*. This separation is clear in cases where a learner *knows* but fails to perform correctly. Corder's (1973) distinction between errors and mistakes is also relevant here. The first is related to deviations from language norms that reflect defects in competence while the second designates lapses that learners can correct when they have time to. The defect in the second case is in the ability to make use of competence at a certain incident.

Theorists, therefore, thought of delayed retrospection as an elicitation procedure performed hours or even days

after the language event. This is to give the FL learner the opportunity to reconsider what he produced earlier, perhaps, away from the constraints of the moment of its production.

So, on the basis of time proximity from the moment of language use we can speak of introspection, immediate retrospection and delayed retrospection as tools of obtaining “intuitive data” which is often distinguished from “textual data” (Ibid). The first is concerned with learners’ intuitions and judgments about the FL, the second with the linguistic substance they produce.

ADAPTATION OF INTROSPECTIVE METHODS IN E-LEARNING

The bulk of literature on introspective methods seem to suggest that these tools of investigation have influenced, and may continue to influence, scientific research in the area of FL learning. We make no apology for repeating that introspective methods can be adapted into e-learning in response to the ever-changing learning requirements and environments of the present age.

This kind of adaptation may take different forms. The underlying principle is that FL learners are given a chance to verbalize their intuitions about learning tasks. Verbalizations can be conducted while the learner is concurrently involved in the task, immediately after the task is over or/and later on. The investigator can make use of electronic devices like mobile phones, laptops, and e-learning management systems or internet platforms. This rough picture can be developed into a motivated research paradigm to elicit evidence on various aspects of FL learning. We are going henceforth to suggest one of such paradigms which we may call *selfiespection*.

The noun *selfie* is used to refer to a photo taken with a digital device by a device user who is usually included in the photo. The photo will be ready to share electronically in the form of image file. Such devices are capable of taking not only photos but can also record voices users are requested to verbalize during FL task accomplishment. The task will end up with a voice file which is shared with the investigator later on. The noun *selfie* is grafted here onto the *-spection* part to indicate that the recorded verbalizations are intended to be introspection or/and retrospection reports and evidence on mental activity that went on during FL task accomplishment.

The research paradigm we are proposing here is motivated by the fact that it can disclose some of the mental process involved in acts of FL use. This is believed to illuminate our understanding of the nature of FL learning of a particular group of learners. The paradigm therefore is a tool of investigation that tries to probe into and come closer to *how* learners learn, and hypothesize on their learning mechanism while involved in actual language use of a point of interest to the investigator. What we are proposing, however, seems to require effort and preparation to make it work.

Points of interest to the investigator will decide the type of task the investigator prepares and presents to the learners. It could be a reading comprehension task, composition writing, the use of a particular tense, and so on. The type of task has to be suitable to the type of learners the investigator may like to choose. The learners have become now informants in

an investigation where elements like age, level of learning and sociolinguistic background become instrumental factors crucial to the investigation. Large groups of homogeneous informants are desirable if the results are to be generalized as a common style of learning. The learning styles of two or more groups can also be compared to point out differences and similarities in the hypothesized learning mechanisms. Evidence can be collected at one particular time in a *cross-sectional* investigation, or alternatively at different stages of learning in a *longitudinal* configuration intended to detect any progress in learning.

Once the type of task and learner choice are decided the investigator can proceed to ensure that the task will be conducted in a manner that promotes proper tapping of useful evidence. The informants are given instructions telling them what they are required to do. Instructions can be in the form of prerecorded tutorials given through an internet platform or in the form of illustrated written instruction. In the case of online platform use the investigator can talk live to the informants, ask for collective warm up trials and watch from a distance how the selected informants are doing. In certain cases the investigator might need to remind of verbalization of thoughts without pauses, but always avoiding feeding the informants unrequired information.

The investigator can schedule the task over an internet platform or request the informants directly to get down to a writing task verbalizing their thoughts about language use while a nearby device is recording whatever an informant is saying. In the case of writing tasks, informants are requested not to delete unrequired parts of what they have written. They can, instead, mark them by a strikethrough or any other means so that they remain transparent. They can be significant to the investigator later on as they may carry traces of mental processes that went on during task accomplishment. The task will end up with two files one carrying textual material and the other a voice file representing the informant’s verbalized intuitions about FL use.

The files are immediately shared with the investigator who subjects them to analysis isolating points of interest. If required, the investigator can request more supplementary data which might come in the form of verbalized comments on previously submitted material. This is what we called above immediate retrospection which discloses intuitions after the language event took place. Such intuitions can come a little later in the form of *delayed* retrospection especially in the case of investigations involving large groups of informants.

At such a stage the investigator will be working on textual and intuitive data trying to infer evidence on aspects like learners’ perceptions, reasoning, and discerned thoughts. The list of research interests can be extended to great lengths to include how learners make their linguistic judgements about language material and where they derive their information from. Investigator search can be motivated by already specified objectives or general trawling through available data. Inferred process are later formalized and appear in infographic shapes accompanied by statistics. Results can initiate further concerns in the same learners or in different learners at

various learning levels or learners who come from different linguistic backgrounds.

The main components of the above research paradigm can be schematized in the following illustration in Figure 1,

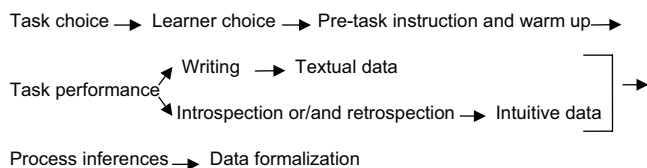


Figure 1. The main components of a *selfiespection* research paradigm

PROCESS EXTERNALIZATION POTENTIALITY

It is hoped that the above research paradigm will open a window on learners' course of action during a structured event of FL use. It could bring us nearer to learners' choices and the reasons behind them. Systematic results coming from large scale investigations can help in hypothesizing on learning strategies and regular routes learners follow in their learning endeavors. The observations the paradigm may disclose can be varied in nature and intensity. For *illustrative* purposes, we mention here some possible contributions which may be of interest to research.

Effect of the Native Language (NL) on FL use

FL teachers have always noticed traces of NL elements in their students' production of FL. Such interfering elements are believed to be the causes behind certain deviations from FL norms. The Contrastive Analysis hypothesis (CA) is a linguistic enterprise that surfaced at the scientific arena at different periods of time and tried to account for the effect of NL on FL (Lado, 1957; James, 1980; Enghels et al, 2020). CA has addressed itself to the job of comparing related NL and FL elements to point out similarities and differences between them and *predict* instances of ease or difficulty in learning the FL part. When transferred onto the FL, NL elements are believed to speed up FL learning when they are similar to FL elements but differences will slow it down.

It seems that *selfiespection* can make a contribution in this regard. The introspective and retrospective accounts it provides can show with a considerable degree of certainty whether deviations from FL norms are attributable to NL interference or not. It can do that because it involves the learner himself in a live descriptive narrative about the language event at hand and does not rely on predictions as CA does.

Error vs. Mistake

Another conceivable contribution *selfiespection* can make is showing whether a FL deviation is an error or mistake. The first is a deviation because of ignorance of the underlying language rule(s) while the second is an accidental deviation and something the language user has already learned but may have forgotten (Corder, 1973). The distinction is

important to both FL learners and instructors. It can decide the type and amount of corrective measures to be used and the type of practice to be given. Mistakes are annoying to the learner but would require only minor remedial practice and, perhaps, more attention on the part of the learner. Errors on the other hand require the introduction of language rules which are to be learned for the first time.

The interesting thing about mistakes is that they may be corrected if given back to the language user to reconsider. This is where *selfiespection* can enter the scene. Retrospection sessions can provide a chance to see whether a deviation has just slipped out or because of lack of the relevant knowledge. Subsequent follow up of mistakes and errors in retrospection can lead to interesting findings like learners' memory span in the case of mistakes and degree of FL illiteracy in the case of errors.

Sporadic vs. Recurrent Observations

Observations tapped through *selfiespection* can be sporadic and become significant in the output of *individual* learners. But they can be more significant if they show systematicity of recurrence in the output of a group of learners. Their incidence and distribution can be calculated to postulate a reconstruction of learners' learning trends. Postulations like these can be an important phase in an enterprise dedicated to delineate a simulation of learners' mental processes during acts of learning. For example, a group of learners may show a tendency not to use a specific FL tense, fail to produce cohesive texts or simply fail to express a certain meaning. Documenting learning trends like these and the reasons behind them can help textbook writers, teachers and educationists in general map out plans of action to handle learning issues.

Indeed, the interest in the systematicity of learner 'language' is not new. Linguists have often spoken about the existence of separate linguistic entities in the output of FL language learners. Nemser (1971) calls such entities 'approximative systems' pointing to the formation of learner 'language' during FL learning. Selinker (1972) has postulated the formation of 'Interlanguage' "which results from a learner's attempted production of a TL [Target Language]" (p.214). *Selfiespection* practices, however, would not stop at the level of postulations but would go a step further to document actual instances of learner 'language' and, more importantly, try to externalize the mental processes behind their formation.

METHODOLOGICAL CONSIDERATIONS

Working on cognitive mental processes may prove to be a delicate issue that requires careful preparation and procedural prudence. Verbalization of thoughts may not flow smoothly and verbalized expressions may come at certain intervals indistinctly and in a low tone. Learner cooperation, therefore, seems to be a crucial factor in the investigation to ensure a reliable picture of learner cognition. The pre-task training and warm up trials we suggested earlier (section 6 above) can, perhaps, prepare the learners for the activity

and raise their awareness of the setting. Pre-task training, however, should not influence the learners and pre-condition their cognitive processes.

A carefully selected FL task seems to be necessary in the case of investigations targeting a chosen aspect of FL use. The task should serve the purpose and does not waste researcher and learner resources by providing irrelevant information. Verbalization, especially in retrospective sessions should be administered in such a way so as to eliminate learner indefinite generalizations and off-track routs.

The chain of procedural difficulties may extend to point to the possibility of investigator bias in the case of targeted elicitation, particularly at the stage of final data formalization. The investigator has to avoid at this stage any pre-occupation with a certain aspect of data interpretation at the expense of other possible by-products.

CONCLUSION

Presumably, if well prepared and well implemented, electronic introspective and retrospective sessions, can produce useful evidence on how people learn. The fact that declarative knowledge is part of the very existence of human beings makes it worthwhile to invest time, money and effort and try to approach this kind of knowledge. In the field of FL learning, *selfiespection* sessions can be arranged to come nearer to learners' mental routes during learning tasks. The challenges involved in such an enterprise can repay and may fill many of the credibility gaps linguistic science has left behind.

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