The influence of cognitive psychology in a second language instruction

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Cognitivism—the belief that much of human behavior can be understood if we understand first how people think—presently represents the mainstream of thinking in both psychology and education (Bower and Hilgard 1981).

The most prominent characteristics of the cognitive approach could be described as the focus on the processes underlying complex learning.

The development of cognitivism has influenced learning theory and research in several significant ways (Shuell 1986; Schwartz and Reisberg 1991).

Current cognitive approaches to learning stress that learning is an active, constructive, cumulative, and self-directed process that is dependent on the mental activities of the learner (Shuell 1986; Sternberg 1996). The cognitive orientation focuses on the mental activities of the learner that lead to successful learning. This explicitly acknowledges the role of metacognitive processes and the use of various learning strategies. Memory and learning both require the learner to actively construct new knowledge and strategies (Rumelhart and Norman 1981). Transfer of information into permanent storage is facilitated by rehearsal of the information (particularly if the information is elaborated meaningfully), by organization (e.g., categorization) of the information, by the use of metamemory strategies (e.g., writing lists or taking notes). The learners tend to remember better when knowledge is acquired through distributed practice across various study sessions, rather than through massed practise, although the distribution of time during any given study session does not seem to affect transfer into long-term storage (Anderson 1983; Sternberg 1996).

Since learning is goal-orientated, the learner must somehow organise his or her resources and activities in order to achieve the goal of learning. Learners selectively encode information, sifting out relevant from irrelevant information in the input, in order to select information for further processing (Deci and Ryan 1985). Motivation and interest are central in how learners select and persist in processing information: as a strong motivating force both individual and text-based interests have a profound facilitative effect on cognitive functioning and learning. Selectively encoded information is then selectively combined and compared, i.e. it is rendered meaningful by perceiving its relations to old information previously stored. This knowledge-acquisition processes operate on a variety of cues present in the material being learned, although utilization is affected by moderating variables such as a number of occurrences, variability of contexts and importance of the to-be-learned information.

Learning is cumulative in nature: nothing has meaning or is learned in isolation. Cognitive conceptions of learning place considerable importance on the role played by prior knowledge in the acquisition of new knowledge (Rumelhart 1980).

In view of the cognitive approach to learning, the notion of effective language learning requires the active involvement of the learner in the process. The approach emphasizes

learning as a process resulting in an extension of meanings the learner is capable of, as something that learners do, rather than being done to them (Kolb 1984). Moreover, the active nature of the way individuals learn is also seen as essentially interactive, that is social: in the process of personal construction of knowledge learners negotiate meanings. In this view learners are active and responsible participants, not passive responders. Personal experience is seen as the focal point of learning.

In addition to the cognitive factors, affective personality factors contribute to successful learning as well. Learning attitude and motivation are important predictors of achievement (Deci and Ryan 1985). Intrinsic motivation is an important element in successful learning, and it is seen as a general drive towards self-direction and self-determination. Self-direction describes an attitude to learning where the learner assumes increasing responsibility for his or her learning (Little 1991; Hammond and Collins 1991).

Changes in the way we think about learning and what we know about the way learning occurs have important implications for the way we think about teaching.

Understanding the nature of learning process elicits the active role of learners in the process where they are responsible participants and not simply passive responders. In fact what the student does is actually more important in determining what is learned than what the instructor does. What this means is that the instructor's role is different from the one frequently envisioned in traditional conceptions of teaching with instructors most often monopolising either parts of or the whole learning process in which, in fact, students ought to be gaining experience. What needs to change is the focus as well as the realisation that good teachers are not merely people who can articulate a large number of relevant facts and ideas; effective teachers must know how to get students actively engaged in learning activities that are appropriate for the desired outcomes. This task involves the creation of the appropriate selection of content, an awareness of the cognitive processes that must be used by the learner in order to learn content, and an understanding of how prior knowledge and existing knowledge structures determine what the student learns from the material presented.

With the advent of cognitive theories of learning and knowledge of how specific learning processes in the learner are engaged by specific instructional variables, we now have a more viable body of scientific knowledge on how best to capitalise on the active nature of learning and the variety of cognitive resources available to learners (Bereiter 1990).

To understand the complexity of the learning processes and the behaviours associated with it poses the need for a functional unit in which the wide range of psychological properties are represented. The concept of the contextual module synthesises the entire complex of knowledge, skills, goals, and feelings associated with the learning situation. On the one hand, all the components are separately represented in the mind, but, on the other hand, they are interrelated and form an organic whole. The contextual module embodies the learner's whole relationship to that context.

Rethinking language learning in view of the cognitive process involved in learning as well as the affective factors contributing to the process can provide effective guidance for the redesign of instructional contexts so that they would encourage the kind of intentional learning where learners perceive their active role as intelligent agents in the learning process. The goal is to enable the learner to become increasingly self-directed and responsible for his or her own learning. This process means a gradual shift of the initiative to the learner, encouraging him or her to bring personal contributions and experiences.

Another key issue is that of mindful, meaningful engagement, with students given opportunities to engage with instructional materials and become active contributors to their language learning rather than passive recipients of knowledge. A design model for a language learning environment should foster the sense of personal engagement and discovery essential

to successful language learning. The teacher provides the rich context of authentic language, and the students discover language rather than study it: they are actively engaged in negotiating meaning and developing strategies for discovery. Students then are cognitively involved in seeking answers, making generalisations, and testing their hypotheses.

The concept of the contextual module as the functional unit of cognition which synthesise learner: learning environment relations is adapted to the learning context. The aim is to develop a coherent instruction module which is organized around goals of personal knowledge construction. This will encourage students to engage in active and meaningful information processing.

The learning goals arise out of the basic theoretical premises in the discussion of the cognitive approach to learning and give emphasis on the development of message-based fluency integrating the language skills (Meskill and Rangelova, in press).

The basic theoretical considerations of the cognitive approach to language learning underlie the choice of instruction and learning procedures as well. Interactional patterns, instruction practises, and learning behaviours take account of the psycholinguistic and cognitive processes involved in language learning.

The learning and teaching activities that are selected to realise the objectives and the syllabus organization are guided by the understanding that what learners remember is the product of their interpretation, not the raw data themselves. Therefore, learning and instruction activities are designed to involve concrete experience; reflective observation; abstract conceptualization; active experimentation.

A final theoretical consideration is the development of autonomy-supporting structures that facilitate independence of learning, offering the learner opportunities for choice and decision making, and, in general, promoting the learner's self-determining status.

Direct learner involvement in activity development and organization enhances the self determining status of students. Moreover, such activities draw students into the teaching-learning process in an active and reflective manner; they involve learners in aspects of diagnosis and evaluation which are generally considered to be the teacher's prerogative.

The integration of language skills reinforces the learning process through the three part structure of the activities design: learning language, learning through language, learning about language. Students start with top-down processing: they are exposed to input which they process for meaning while at the same time selectively attending to specific language features. Students, by their prior knowledge generate expectations and combine them, with the language input to construct or reconstruct the meaning. While interpreting the language input, students assimilate and integrate new information to already existing schemata of stored knowledge. As a result, they record the gist of their experiences with the language input, an integrated understanding of the material, and not the exact original sentences and word order of the sentences. To get students to consciously focus on the specific linguistic features that have guided them in making their interpretations, are alerted to specific context details and language features.

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