Cognitive Factors Influencing Second Language learning

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Abstract

This research paper aims to elaborate cognitivism and its implications to the second language learning by analyzing the three views on second language acquisition (the behaviorist view, the innatist view, and the interactionist view). In the second place, the present study describes language proficiency and the influence of cognition on second language acquisition. Then the study sheds light on intelligence and aptitude, and cognitive learning styles as key cognitive factors influencing second language (L2) learning.

Key words: cognition, second language acquisition, innatist, behaviorist, interactionist, intelligence, aptitude, learning styles.

Résumé

Ce document vise à clarifier les points de vue et les effets de l'école cognitive d'apprentissage cognitif langue seconde à travers les trois analyses principales de vues explicatives des mécanismes et des méthodes d'apprentissage ou d'une langue seconde (point de vue comportemental, le point de vue de soi ou mentale, et voir regard interactif). Deuxièmement, cette étude décrit la maîtrise de la langue et l'impact des méthodes d'apprentissage cognitif dans l'apprentissage et l'acquisition de la langue seconde. L'étude met finalement en lumière l'intelligence, la préparation et les mécanismes d'apprentissage cognitif en tant que facteurs cognitifs fondamentaux qui influencent le processus d'apprentissage de la langue seconde.

Mots clés: cognition, acquisition de la langue seconde, soi, comportemental, interactif, intelligence, préparation, méthodes d'apprentissage.

ملخص

تهدف هذه الورقة البحثية إلى توضيح آراء وآثار المدرسة المعرفية الإدراكية على تعلم لغة ثانية من خلال تحليل وجهات النظر الثلاثة الرئيسية المفسرة لآليات وطرائق تعلم أو اكتساب اللغة الثانية (وجهة النظر السلوكية، وجهة النظر الذاتية أو العقلية، ووجهة النظر التفاعلية). وفي المقام الثاني، تصف هذه الدراسة الكفاءة اللغوية وتأثير أساليب التعلم الإدراكي في تعلم واكتساب اللغة الثانية. لتسلط الدراسة الضوء في الأخير على الذكاء والاستعداد و آليات التعلم الإدراكي كعوامل إدراكية جوهرية تؤثر على عملية تعلم اللغة الثانية.

الكلمات المفتاحية: الإدراك، اكتساب لغة ثانية، الذاتي، السلوكي، التفاعلي، الذكاء، الاستعداد، أساليب التعلم.

Introduction

Chomsky is the leading figure in contemporary linguistics. Starting in the 1950s, his development of generative grammar was an important factor in the shift from behavioristic to cognitive approaches to language and mind.

An educational interpretation of L 2 teaching/learning needs a model that allows the identification of the factors that influence L 2 interactive teaching and learning processes at each stage of its development, mainly cognitive – related factors.

It should be noted that a great deal of EFL teachers' time is spent helping learners struggling with L 2 learning. Although many variables have been identified which account for success, this knowledge has not produced a universal theory of second language acquisition. Consequently, scholars are increasingly arguing that successful teachers and learners combine these factors in unique ways in the process of self-regulated learning.

In an attempt to understand this process more clearly, this research study investigates the existence of a link between cognitive style, intelligence, and learning strategies. Meanwhile, this research, generally, aims to elaborate cognitivism and its implications to the second language learning by analyzing the three views on second language acquisition (the behaviorist view, the innatist view, and the interactionist view). In the second place, the present study describes language proficiency and the influence of cognition on second language acquisition. Then the study sheds light on intelligence and aptitude, and cognitive learning styles as key cognitive factors influencing second language (L2) learning.

1 Theories of Language Acquisition/Learning

Second language acquisition borrows its theories from a range of disciplines and numerous theorists. These theories can mainly be classified into three groups on the ground of three prominent views: the behaviorist view, the innatist view, and the interactionist view.

1.1 The Behaviorist view

The model was very popular in the forties and fifties owing to the works of Ivan Pavlov, B.F. Skinner, John Watson, Bloomfield, and others. It is also related to the empiricist school due to its concern with the physical and the observable. N this view, the main focus in learning is change of behavior through habit formation, and the existence of stimuli and response. For several decades this school of thought was very dominant in various areas of learning, including language learning.. In Verbal Behavior, B.F. Skinner (1957) argued that language acquisition was a form of operant conditioning directly resulted from adult modeling and reinforcement, imitation, practice and habit formation on the part of child. Another main feature of behaviorist view is the existence of reinforcement – both positive and negative. A child will be given praise and physical rewards when he gives a correct utterance. On the other hand, if the utterance is not correct, the reward will be suspended.

1.2 The Innatist view

Partly in response to the apparent inadequacies in the behaviorist view, the innatist model of language acquisition/learning gained ground. It gives increased importance to innate factors in language acquisition. The earliest spokesman for the innatist view was Noam Chomsky, who asserted that humans have a special innate capacity for human language called Language acquisition Device (LAD). He maintained that every child is born with universals of linguistic structure or "universal grammar". Chomsky (1957) argued that when a child was exposed to the language of his community, this "language acquisition device" would be triggered and child becomes a speaker of that language.

This strong version of the innatist position received support from biologically based research relating to language development. Lenneberg (1964) drew attention to some important ways in which language acquisition is more akin to genetically determined skills, such as walking than to culturally transmitted ones which are the results of training. His work links language acquisition to biological maturation. According to him, humans have a specific predisposition for language acquisition and exposure in the environment is a necessary condition for language acquisition.

1.3 The Interactionist View

Observation of children' s language in natural setting, have forced to locate language acquisition within a social framework.

Piaget (1973) was concerned with general questions about the nature of knowledge and of human intellectual development. His theories are linked with language education programs involving process or activity rather product of content. According to him, human beings progress through a series of fixed stages at variable ratio. As we grow, we both assimilate (incorporate new information within an existing framework) and accommodate (adapt our behavior to the environment). Piaget concedes that language becomes increasingly important as intelligence develops, but he does not

view language as the source of thought. Dell Hymes (1971) also proposed a model of communicative competence. This competence will make persons able to express and interpret messages appropriately in specific communicative contexts (Goh, 2004: 17-22).

2. Language as a Cognitive Skill

Second language acquisition is better understood with a description of the interaction between language and cognition. In cognitive theory, individuals are said to process information, and thoughts involved in this cognitive activity are referred to as "mental processes". Learning strategies are special ways of processing information that enhance comprehension and learning.

Anderson (1983) has described cognitive skill acquisition as a "three-stage process". He distinguishes between what "we know about" or static information in memory, and what we know "how to do" or dynamic information in memory. All the things "we know about" constitute declarative knowledge, and the things "we know how to do" are procedural knowledge. Declarative knowledge is maintained in long-term memory in terms of meaning or propositional representation. Our ability to understand and generate language or to apply our knowledge of rules to solve a problem would be examples of procedural knowledge. Declarative knowledge or factual information may be acquired quickly, procedural knowledge such as language acquisition is acquired gradually and only with extensive opportunities for practice.

With a connection to the theories of second language acquisition, the behaviorist theory of learning portrayed the learner as passive receiver of information, whereas the cognitive view takes the learner to be an active processor of information (Ausubel et al., 1987). Learning and using a rule requires learners to think, that is, to apply their mental powers in order to distil a workable generative rule from the mass of data presented, and then to analyze the situations where the application of the rule would be useful or appropriate. Learning, then, is a process in which the learner actively tries to make sense of data, and learning can be said to have taken place when the learner has managed to impose some sort of meaningful interpretation or pattern on the data. This may sound complex, but in simple terms what it means is that we learn by thinking about and trying to make sense of what we see, feel and hear. (Hutchinson & Waters, 1987: 43).

The basic teaching techniques associated with a cognitive theory of language learning may cover the following activities: (1) problem based learning (problem solving), (2) discovery learning, (3) cognitive strategies, (4) project based learning, etc.

3. Cognitive factors influencing second language (L2) learning

Second language learners are different. They learn with different speed and different results. The general factors that influence second language learning include: intelligence and aptitude, and cognitive learning styles.

3.1 intelligence and aptitude

The studies on intelligence - (Intelligence Quotient) IQ tests scores – show a strong relationship between intelligence and acquisition of a foreign language as far as academic skills are concerned. Learners with high IQ achieve better results on language tests. It is proved that intelligence

can predict the rate and success of second language acquisition in the formal language classroom (Genesee 1976). "The ability to perform well in standard intelligence tests correlates highly with school related second language learning" (Spolsky 1989: 103).

It is assumed that some people are gifted and they learn foreign languages with ease. It was observed that learners acquire a language with different results despite the fact that they are at the same age and are equally motivated. It is not just intelligence that can explain these differences. Students need aptitude – some specific abilities, which are responsible for learning languages.

One of the tests that measured aptitude are Carroll and Sapon' s Modern Language Aptitude Test – MLAT - (1959). Carroll describes aptitude as a stable factor, which cannot be trained; it is separate from motivation , achievement and intelligence. It is an ability that allows to learn an L2 faster and with less effort. He identified four factors in language aptitude: phonemic coding ability, grammatical sensitivity, inductive language learning ability and rote learning ability.

Later studies conducted by Skehan (1989) were concentrated on the underlying complexity of language aptitude and its relation to first language acquisition and second language learning. He has shown two predictors of the language aptitude: "a general language processing capability" and "an ability to use language in a decontextualized way". Skehan' s findings show that aptitude consists of abilities identified be earlier researchers and the ability to deal with context-free language , which is connected with learning academic skills and intelligence (Ellis, 1994).

It is still not known whether intelligence is a part of aptitude or they are separate notions. Cummins (1983) distinguished language abilities into two: cognitive/academic language proficiency (CALP) and basic impersonal communication skills (BICS). He suggested that CALP might be related to general intelligence and BICS to aptitude.

3.2 Cognitive Learning Styles

Cognitive learning styles was described as "the characteristic cognitive, affective, and psychological behaviors that serve relatively stable indicators of how learners perceive , interact with, and respond to the learning environment" (Keefe 1979, Cited by Ellis 1994: 499). Students' learning styles can be influenced by many factors among which are their genetic background, , their culture and previous learning experience. It is said that if teachers match their teaching methods to the students' learning styles, the students will be more successful and more interested in the language..

Reid (1987) identified four learning modalities: Visual (seeing), auditory (listening), kinaesthetic (moving), or tactile (touching). Visual learners learn through seeing. They prefer to see a teacher during a lesson, learn by visuals: pictures, wall displays, diagrams, videos. They make notes during lectures and use lists to organize their thoughts. Auditory learners learn through listening. They prefer verbal instructions, like dialogues, discussions and plays, solve problems by talking about them, use rhythm and sound as memory aids. Kinaesthetic learners learn through moving and doing. Tactile learners learn through touching. They use writing and drawing.

The other learning styles are described by Willing (1987), who distinguished:

(1) Concrete learning style: direct means of processing information, people-oriented, spontaneous, imaginative, emotional, dislikes routinized learning, prefers kinaesthetic modality.

(2) Analytical learning style: focuses on specific problems and proceeds by means of hypothetical – deductive reasoning, object oriented, prefers logical didactic presentation.

(3) Communicative learning style: highly adaptable and flexible, responsive to facts that do not fit, prefers social learning and a communicative approach, enjoys taking decisions.

(4) Authority – oriented way of learning: reliant to other people, needs teachers' directions and explanations, likes a structured learning environment, intolerant to factors that do not fit (Ellis, 1994: 507).

Conclusion

From the elaboration in what is said above, the researcher can said that cognitive theory or approach can be grouped in the innatist model which focuses on the role of mental or psycholinguistic processes. This tradition is also known as 'mentalism', 'nativism', or 'rationalism'.

Additionally, cognitive approach that views the learner as a thinking – being and an active processor of information can be applied to improve the learners' intelligence. In other words, the type of activities will make the learner to think more critically towards certain educational topics. Meanwhile, teachers can benefit from this trend(cognitivism) in English language teaching.

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