Information Processing Theory and Intensive English Speaking Course

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Psychological mechanism of language learning is explored, especially through Information Processing Theory. Although Krashen's Input Hypothesis raises one of the most important issues for the Japanese teachers of English whose teaching is basically based on Grammar-Translation method, it doesn't seem to offer very practical suggestions. In order to obtain clearer theoretical perspectives in everyday learning-teaching of language, theoretical analysis is applied into the real situation of a short, intensive speaking course, where the learners' improvement of speaking ability is the main goal.

Through the discussion, the importance of the role of teaching(learning) in teaching of English is confirmed in order to foster learners' acquisition of language.

1. Introduction

Krashen attempts to display that teaching forms will not provide language acquisition by his Input Hypothesis(1986). It offers an attractive explanation for teachers who have been teaching form-centered English based on the Grammar Translation Method with uncertain feelings about the method they daily employ. Intuitively many teachers doubt the relevance of the Grammar Translation method because it does not lead to better communicative competence in students. Moreover, the Hypothesis by giving reasons for the inability of the Grammar-Translation method in some way absolves teachers.

The Monitor Hypothesis offers a distinction between learning and acquisition that denies what a Grammar Translation teacher is doing in his classes and equally encourages the teacher to change completely the style or method of his teaching. The acquisition of language is the fundamental goal of a teacher therefore the Hypothesis is crucial.

It may be easier to apply the Hypothesis into learning or teaching in a country where the language is spoken. Moreover, success is more probable when the learner is very young, and can take his/her time to acquire the language. In other words, the Hypothesis could be more beneficial for those who are, in every aspect of learning / growing up conditions, similar to first language acquisition. The greater the alienation of the conditions, the more difficult it becomes to apply the Hypothesis.

On this learning / acquisition issue Ellis(1994:360) rightly says: "the important point here is to note that these studies (Pienemann 1989; White, Spada, Lightbown, and Ranta 1991) suggest that 'learning' can sometimes turn into 'acquisition'."

The imperative question is whether the learning and acquisition of language are totally different. In this paper, the mechanism of learning will be explored by focusing on the Information Processing Theory. The Information Processing Theory offers the most comprehensive and basic explanation available on psychological development when learning is taking place. Long (1983) examined the research on this issue by applying statistical analysis which is powerful but does not offer a psychological explanation of language learning.

2. Information Processing Theory

Based on research in Cognitive psychology, McLaughlin(1987) explains language learning as a cognitive process. He uses the terms 'skill' and 'learning' in the sense which innatists deny. McLaughlin(1987:133-134) states:

"To learn a second language is to learn a *skill*, because various aspects of the task must be practised and integrated into fluent performance. This requires the automatization of component sub-skills. Learning is a *cognitive* process, because it is thought to involve internal representations that regulate and guide performance. In the case of language acquisition, these representations are based on the language system and include procedures for selecting appropriate vocabulary, grammatical rules, and pragmatic conventions governing language use. As performance improves, there is constant restructuring as learners simplify, unify, and gain increasing control over their internal representations (Karmiloff-Smith 1986)."

So, general mechanism of acquisition and use of language can be explained in figure 1, where the arrows pointing right show acquisition whereas the arrow going left represent use:
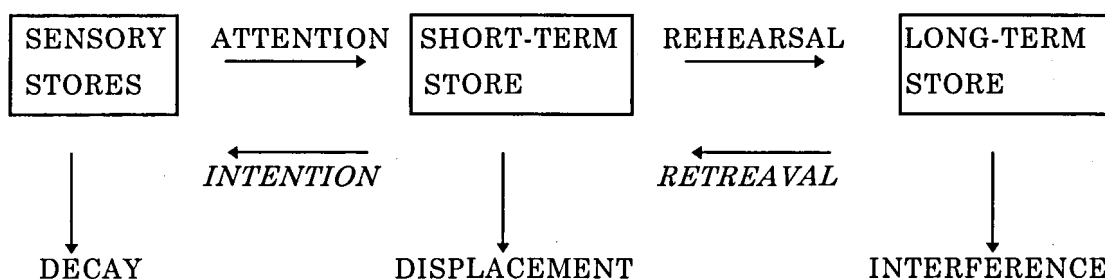

Figure 1   Based on Eysenck and Keane's multi-store model of memory 1993
with the addition of Italicized parts and left arrows

Figure 1 illustrates three information processes: automatic processing, controlled processing and restructuring. For example, consider an elementary language learner trying to use the inflectional forms of English verbs. Fair knowledge and competence is required to use the right forms relatively quickly, otherwise the learner may have problems when he wants to communicate, especially when spoken, to choose the right form with relative ease. Processing information with great speed is called automatic processing and can be best observed in the left direction arrows of the figure. When the same learner is using attentive control, which he may apply when both learning and using language, it is called controlled processing and is illustrated in the arrows of both directions.

According to McLaughlin, (1987:134-135) "automatic processing is a rapid process and once it occurs it is difficult to suppress or alter. ... Controlled processes are thus tightly capacity-limited, and require more time for their activation. But controlled processes have the advantage of being relatively easy to set up, alter, and apply to novel situations."

Furthermore, McLaughlin relates this automaticity to learning and states(1987:135) "In this framework, learning involves the transfer of information to long-term memory and is regulated by controlled processes. That is, skills are learned and routinized(i.e., become automatic) only after the earlier use of controlled processes." However Eysenck and Keane(1993:125) cautiously stated: "There is general agreement that prolonged practice is of fundamental importance to the development of automaticity, but it is much less clear how practice produces automaticity. ... what happens is that practice leads to an increase in the knowledge base, and this in turn permits rapid retrieval of relevant information and fast action."

Heading restructuring. In figure 1, restructuring is displayed in the arrow pointing from short-term store to long-term store. The information is simplified, generalized, associated with something else or reorganized to be stored in the Long-term Memory.
If we consider an elementary level learner who is learning the rules of inflection in English verbs, he has to first know that verbs can be divided to two categories: regular types, and irregular types. The latter verbs are relatively limited in their total number and there are certain patterns in the way they inflect. Without these processes, it appears to be impossible to simply memorize every inflection of a large number of verbs. It seems that this process of automatization through restructuring distinguishes the human brain from computers in terms of information processing.

The account offers an explanation of what occurs in our mind when acquisition is taking place, but is not a full explanation, as McLaughlin(1987:150) rightly says, in

the evaluation of the Cognitive theory, that "Learning a second language does involve the acquisition of a complex cognitive skill, but it involves the acquisition of a complex linguistic skill as well. Thus, as has been pointed out(McLaughlin *et al.* 1983), the cognitive perspective to second-language learning is not a complete one. Such a perspective is only one way of looking at language learning.   It becomes more powerful if it is complemented by linguistic research."

The learning and acquisition distinction problem is crucial, although Eysenck and Keane did not draw a clear line or connection between them.   In her article, Lightbown(1985:176-177) lists generalizations drawn from second-language research.   Two statements, out of a list of ten, are relevant to the present discussion :

"(1)*Adults and adolescents can 'acquire' a second language.*
The term 'acquire' is meant to reflect somewhat the same thing Krashen means by the term—child-like internalization of the rules underlying the target language. ... Some adult—especially those who are literate and accustomed to formal instruction—can also benefit from formal instruction in the language, ...
(2) *Practice does not make perfect.*
Even though there are acquisition sequences, acquisition is not simply linear or cumulative, and having practiced a particular form or pattern does not mean that the form or pattern is permanently established."

The generalizations indicate that there is no single, decisive answer to the question on learning and acquisition of language.

It is apparent that form-centered learning(teaching) has its own role to play in the acquisition of language, as Ellis(1994:22) clearly says: "... there is growing evidence to indicate that the grammar instruction does work, providing learners are ready to assimilate the new target rule into their mental grammars, although instruction does not appear to enable learners to 'beat' a developmental sequence."

3. Application to a Teaching Situation

The learning and acquisition distinction can be interpreted from a practical standpoint as Littlewood(1992:35) states: "... it seems sensible to use all the learning capacities that people possess and, therefore, to try to exploit both (learning languages as a form of skill learning, and as a form of natural growth)."   The account appears plausible.   The description and discussion so far is from a general perspective, application to the practical situation can also be somewhat generalised.

To consider what generalizations can be drawn from practise a case study is outlined. Colleagues and I have been providing a short conversational course of three days in

summer for the past 12 years with the assistance of native speakers of English. It differs from everyday classes in various aspects, the two main distinctions are: emphasis on spoken aspects of English and the teacher-students ratio. The students are immediately asked and encouraged to use English when the course begins. The number of students is limited to approximately twenty to thirty with four to five instructors. Thus, the teacher-student ratio is less than eight to one. The ratio is less than one fifth of every day classes in the college, which mainly focus on forms and vocabulary learning through reading. The course is open to any students interested in improving their spoken competence, functioning as a complementary course for the students. Although the college does not offer any official credits to the participants, there are enthusiastic students who repeatedly participate over the years.

If we evaluate it from the satisfaction of participants, the course is successful. A colleague (K) took initiative of last year's course as one of the native speaker instructors, wrote the following description and problem. On Thursday , 22 Aug 1996, K wrote (in personal communication):
"The summer camp went extremely well in my opinion. The students were asked to make speeches based on their reflections on the camp, and they were very deep. Most said how much they enjoyed THIS camp in particular because it was not focused on the textbook and lesson times.
But I have a sinking feeling that the Japanese staff will want to return to the old style (which I don't think is necessarily bad, but this year's plan was not well received) next year."

First of all the course has a compensatory role in the teaching of a language which is mainly form focused and non-intensive over a long period of time. The learners have an opportunity to really use whatever knowledge of the language they have in a more acquisition rich situation. This situation is valuable, and more of this kind of course would be beneficial if instructors wish learners to acquire the language. The problem outlined is in the style of having the course: whether it should have a textbook or not.

The textbook mentioned is organized to develop learners' spoken competence by situational conversation models. The models are familiar to the college students, with vocabulary which can be used for substitution practice. The textbook or similar ones have been used for several years. There had always been time allocated for 'free' conversation, too.

The content of the course last year was received with the following explanation. It was sent on Mon, 26 Aug 1996 and said (personal communication):

"With lots of help from the foreign instructors this year's summer seminar was
revamped to accomplish two things: 1) to get students to acquire a global
vision; and 2) to have students use English as much as possible.

We told students that this year the moment they would enter Kurohime Lodge
vocabulary which were 20 characteristics of any country: name, founder,
form of government, currency, national sport, etc. They were free to choose
the name and characteristics of their country.   Also they were told to prepare
a passport-size photo of themselves.

When they arrived at Kurohime, they had to fill in passport forms.   Actually I
don't know what was the name of the country of Kurohime Lodge, but the
currency (which was decided by the foreign instructors) was chocolate.   Each
student was given 20 chocolates. They had to carry their passport around and
speak in English at all times OR they would be fined a chocolate.   In addition
the students were involved in various English games and activities in which the
winners would collect chocolates from the losers.   One notable activity was in
which the students in their groups had to collect the 20 characteristics of the
other three countries.   The students within their groups were divided into
writers and inquirers.   The inquirers had to memorize the question and ask it
correctly to the other groups and get the answer WITHOUT WRITING
ANYTHING OR READING ANYTHING.   They had to report back as accurately
as possible to the writers.   The activity went very well and finished sooner
than expected.   The accuracy ratio was also high: all the groups scored over
50 out of a possible 60.
The students were quite motivated as a result. ... "

Thus, the course was a successful attempt to teach fluency in the second language by
carefully providing finely tuned and understandable tasks.   It is certainly a form of
automaticity acquiring practice in a more input-rich environment than using the
textbook with the provision that the participants had an adequate grasp of the
language for the kind of task activities. The gap between the Japanese instructors
and English speakers is not so large as K implies.   Brown's (1993:285) table below
suggests possible pathways toward the more proficient speaker of the second
language.   Brown claimed, "It is important to note that these cells are described in
terms of one's processing of and attention to *language forms* (grammatical,
phonological, discourse rules and categories, lexical choices, etc.)."

Brown continues, "If, for example, peripheral attention is given to language forms in
a more advanced language classroom, focal attention is given to language forms is
given to meaning, function, purpose, or person. ...   Most adult second language

learning forms in the classroom involves a movement from cell A through a combination of C and B, to D. Peripheral, automatic attention-processing of the "bits and pieces" of language is thus an ultimate communicative goal for language learners."

Table 1   Practical Applications of McLaughlin's Attention-
                    Processing Model (Brown, 1993:285)

	CONTROLLED: new skill, capacity limited	AUTOMATIC: well-trained, practiced skill capacity is relatively unlimited
FOCAL intentional attention	A • grammatical explanation of a specific point • word definition • copy a written model • the first stages of "memorizing" a dialogue • prefabricated patterns • various discrete-point exercises	B • "keeping an eye out" for something • advanced L2 learner focuses on modals, clause formation, etc. • monitoring oneself while talking or writing • scanning • editing, peer-editing
PERIPHERAL incidental attention	C • simple greetings • the later stages of "memorizing" a dialogue • TPR / Natural Approach • new L2 learner successfully completes a brief conversation	D • open-ended group work • rapid reading, skimming • free writes • normal conversational exchange of some length

The Japanese organizers view the present learners in cell C, or that learners require this kind of practice. On the contrary K positions the learners in cell D. The learners' needs and wants have to be appraised, and move towards cell D. To attain the skills of an expert, a native speaker in this case, training or simulation would be inadequate and thus first-hand experience shows its real value. So, the difference of the method by the Japanese organizers and K is from the difference in their assessment of the learners. What is required is common criteria.

4. Conclusion

The paper has considered a thesis of the very basic mechanism of learning a language. It is clear that learning could similarly lead one to acquire a second language, though other inputs are required in order to acquire better competence in the second language. More detailed and comprehensive conditions or models for learning / acquisition of language that are based on Cognitive psychology which incorporates language theory are required. The defects of Krashen's Monitor Hypothesis was apparent, however until a more adequate hypothesis is offered it allow a further insight into language / acquisition of language.

References

1) Brown, H. D. 1994. *Principles of Language Learning and Teaching.* Englewood Cliffs: Prentice Hall Regents.

2) Ellis, R. 1994. *The Study of Second Language Acquisition.* Oxford: Oxford University Press.

3) Eysenck, M. W. & M. T. Keane. 1993. *Cognitive Psychology : A Student's Handbook.* Hove: Lawrence Erlbaum Associates.

4) Krashen, S. 1985. *The Input Hypothesis: Issues and Implications.* London: Longman.

5) Lightbown, P. 1985. Great Expectations: Second-Language Acquisition Research and Classroom Teaching. *Applied Linguistics* 6(2) 173-189.

6) Littlewood, W.T. 1992. *Teaching Oral Communication.* Oxford: Blackwell.

7) Long, M. H. 1983. Does Second Language Instruction Make a Difference? A Review of Research. *TESOL Quarterly* 17(3): 359-382

8) McLaughlin, B. 1995. *Theories of Second-Language Learning.* London: Edward Arnold