THE MULTIDIMENSIONAL MODEL, PROCESSABILITY THEORY AND THE TEACHABILITY/LEARNABILITY HYPOTHESIS: SUGGESTIONS FOR THE JAPANESE CONTEXT

Melodie COOK

Background: General Teacher Education in Japan

In Japan, schoolteachers are educated at universities and junior colleges approved by the Ministry of Education. Of these, only 42 percent are prepared by colleges of education; the rest are trained in other faculties, junior colleges, and graduate courses in university (Sato & Asanuma, 2000). In addition to coursework, elementary school teacher trainees in particular are required to undertake a one-week training program and a short four-week practicum in which they "do case studies on pedagogical practices, micro-teaching, or listen to teachers' narratives" (p. 115).

Although since the 1990s, teacher education has been undergoing reforms, according to Sato and Asanuma (2000), "the teacher education curriculum is narrowly enclosed in a cafeteria-knowledge approach, composed of technical knowledge and practical routine skills. It educates teachers not as autonomous professionals but as public servants in a bureaucratic school system" (p. 113). The purpose of this educational efficiency model is primarily directed at managing students, giving them instructions, and transmitting academic knowledge. This knowledge-based curriculum consists of "packages of predetermined content knowledge and of standardized techniques" (Sato & Asanuma, p. 119). In addition, teacher-training programs focus more on the content that the trainees will have to "transmit" to their future students, rather than on pedagogical concerns. That content, in the case of language teachers, consists of what Ellis (1993) refers to as a structural syllabus, "a list of grammatical items, usually arranged in the order in which they are to be taught" (p. 91). As is usually the case in Japan, that order of arrangement is determined by the order in which grammar items are presented in the required textbook.

In short, teachers in Japan seem to be inadequately trained when it comes to pedagogy. Although they may have a strong background in their specific field of study, they may be less able to communicate that knowledge to their students. English teachers, in particular, unless enrolled in educational colleges within universities, may receive teaching certificates without ever having taken courses in language acquisition, curriculum design, or other pedagogically-related areas. Once they enter the workplace, many novice teachers end up emulating their mentors and perpetuating the cycle of teaching English primarily through the grammar-translation method. Lamie (2000) in a study assessing the amount of university-level teacher training in Japan, found that "a significant number of teacher trainees received no training in communicative language teaching

(CLT) methodology (77%), classroom management (77%), or team teaching (93%). The class with the most notable number of participants was Grammar Translation Methodology (GTM: 43%)" (p. 34). In an attempt to rectify this situation, however, the Ministry of Education, Culture, Science and Technology (MEXT) has mandated that junior high school students learning English for the first time be taught functional English as well as a fixed number of grammatical structures. However, no recommendations on how or in what order these structures should be taught is given. I believe that some knowledge of the Multidimensional Model, Processability Theory, and the Teachability Hypothesis would help these teachers, at least with the latter problem.

This paper will summarize and then discuss those aspects of the above-mentioned model, theory, and hypothesis that could be considered relevant to language teaching practice in general. Following will be suggestions for ways in which knowledge from this branch of SLA could be applied in the English language classroom in Japan. This paper concludes with a discussion of the advantages and disadvantages of incorporating this knowledge into practice with particular focus on the Japanese context.

Hypothesis

The Multidimensional Model/Processability Model

According to Cook (2001), the core idea of the multidimensional model is that some sentences are formed by moving elements from one position to another. Thus, "movement is seen as the key element in the learning sequence" (p. 29). At the beginning of learning the L2, the learner starts with sentences without movement, and gradually works his/her way from words to phrases, to sentences, to subordinate clauses. These stages are summarized in Table 1 (Cook, 2001, p. 31).

Table 1

Developmental stages of English grammar

Stage	Characteristics	Examples
1	Learners have access to individual content words and formulaic phrases	"see", "car"
2	Learners have access to grammatical function words	"see", "the car"
3	Learners can assemble phrases	"he see the car"
4	Learners combine elements inside and outside the clause	"the patient he looked after"
5	Learners can put phrases together within the sentence	"he will see the car"
6	Learners can work out both main and subordinate clauses	"If he looks out of the window, he will see the car"

According to Cook (2001), "the multidimensional model stresses that L2 learners have a series of interim grammars of English - interlanguages" (p. 31) as they move from one stage to the next. Another aspect of the Multidimensional Model is its recognition of the role of social-psychological factors, such as social distance from the target language group, intensity of contact, attitudes, and motivation, among others. According to Meisel, Clahsen, and Pienemann (1981) learners are likely to vary in their orientation along a continuum between segregative and integrative orientations; orientations which may change according to learners' circumstances.

Processability Theory

According to Pienemann (1998), Processability Theory deals with "the nature of computational routines (that operate on but are separate from the native speaker's linguistic knowledge) and the sequence in which they become available to the learner"; the objective of the theory is "to determine the sequence in which procedural skills develop in the learner" (pp. 1-2). L2 learners have to create language-specific processing routines.

Learnability/Teachability Hypothesis

The idea behind learnability comes from observations that second language learners follow a fairly strict route in their acquisition of certain grammatical structures, which "only become 'learnable' when the previous steps on this acquisitional path have been acquired" (Mitchell & Myles, 1998, pp. 77-78). According to Pienemann (1989) "the acquisition process cannot be steered or modeled just according to the requirements of formal instruction" because teaching "itself is subject to some of the constraints which determine the course of natural acquisition" (p. 57). Instruction then, can only promote acquisition "if the interlanguage is close to the point where the structure to be taught is acquired in the natural setting" (p. 60) (i.e., the Teachability Hypothesis). In addition, Pieneman points out that premature learning is counter-productive, in that learners don't "squirrel away" structures to be recalled later when they are ready to process them, and doing so may even "produce disturbances in the acquisition process" (p. 73). In other words, learners may avoid structures they cannot master in order to avoid frustration; such a strategy, instead of promoting acquisition, "limits the expressiveness of the learner's language" (p. 76).

Relevance to language teaching practice

Comprehensibility

These models, theories, and hypotheses could be seen as fairly clear and straightforward. If teachers are given a general table summarizing the stages, perhaps filled in with more specific grammar points for each stage, they could proceed from stages one to six sequentially (although there may be some backsliding). This would be of great benefit to Japanese teachers, as it would provide them with an overall guideline for the order in which to teach grammar points with maximum efficiency.

Predictive power

Another aspect that is relevant to language teaching practice is the idea of predictability. According to Pienemann (1989), "A hierarchy in the development of processing prerequisites [then] serves as a general grid for the prediction of acquisitional chronologies for a wide range of structures in morphology and syntax" (p. 55). Based on analyses of what a learner has already acquired, it is possible to predict what the next natural learning problem will be. Then, based on a linguistic investigation, the learner's orientation (the learner's own L2 acquisition path) can be assessed. Finally, because features of interlanguage are structurally interconnected, it will be possible to obtain a description of a learner's rule system at any given time.

A plan for sequencing

If learners are constrained by their current interlanguage stage and orientation, it follows that teachers should try to teach according to whatever stage their learners are at. Cook offers three possible suggestions: that teachers avoid teaching the '-s' ending of verbs at early stages, because it predictably comes late; that teachers concentrate on the main word order of SVO and do not expect learners to learn the word order of questions until later, and that teachers introduce sentence-initial adverbials as a way into the movement involved in questions (pp. 32-33). And since, according to Pienemann (1989), instruction has an accelerating effect on acquisition for learners who are ready for it (p. 61), formal teaching helps learners move through to the next developmental stage.

Ways in which knowledge from this branch of SLA could be applied to teacher professional development

Unfortunately, as mentioned in the introduction, Japanese teachers of English rarely receive instruction in SLA theory during their teacher-training courses or supplemental courses. However, teachers are required to attend training workshops and many are present at academic conferences as well. If the model is actively promoted and explained at workshops and academic conferences, teachers and teacher trainees would be able to learn the potential applications of this theory in a relatively short time. A useful activity may be to bring textbooks to teacher training sessions and to have trainees spend time looking through them. Trainees could be challenged to determine the order in which the chapters could be re-arranged in order to accommodate the stages of acquisition.

Advantages and Disadvantages of the Multidimensional Model, Processability Theory and the Teachability/Learnability Hypothesis

Advantages

According to Pienemann (1989), knowing about learners' developmental status and orientation is valuable to teachers generally, as it enables them to "predict and classify imminent learning 'errors,' be they a result of current stages of development or 'short cuts'" (p. 57). Then the teacher can choose teaching items based on student's current interlanguage grammar.

Another advantage is that if there is a fixed series of stages that learners move through as they learn English, and if Japanese English teachers in particular know this order, they can use

this framework, as did Dyson (1996) "for planning the grammatical component of the syllabus and for implementing a form-focused approach in the classroom" (p. 73). For example, regarding the teaching of verb tenses, "when learners are beginning to experiment with the '-ing' form with commonly used dynamic verbs, the teacher could focus on this form and its function, attempting to put in a context which highlighted the present/progressive aspectual distinction" (Brindley, 1987, p. 188). Even if instructors have to teach a fixed number of items, or are constrained by textbook choices, they could perhaps change the order of items introduced or design supplementary lessons that will help students move through each stage.

Furthermore, because there is already a tendency to focus on form in Japan, teachers could still do so, yet in a more systematic manner that takes students' interlanguage into consideration. By raising students' consciousness for comprehension and explicit knowledge, as suggested by Ellis (1993), teachers may be able to help students in "the process of intake formation by facilitating noticing and noticing-the-gap" (p. 109). As shown by Lightbown's (1988) research, instruction that focuses on form can move learners along the stages of acquisition more quickly than instruction without an explicit form focus. This is particularly important with regard to the reality of entrance examination questions, which have no oral component and consist primarily of answering questions on written structures (Gorsuch, 2001). As Spada and Lightbown (1999) found, students generally had some knowledge of higher stages, although they produced structures that were at lower ones. Since production is not required on Japanese entrance examinations, the multidimensional model seems appropriate.

Related to the above, because of the prevalence of the grammar-translation method in Japan, teachers are already trained in highlighting the differences between English and Japanese (Gorsuch, 2001). Spada and Lightbown (1999) found that "explicit instruction, including contrastive metalinguistic information, may be needed to help students move beyond apparently stable interlanguage patterns" (p. 1). Again, teachers may not have to radically alter what they teach, just the order in which they teach it.

In addition, if teachers are taught to view variational language as part of a developmental stage, rather than as "errors", instead of punishing students for making "mistakes" they could, more helpfully, guide their students through stages of language acquisition. This will also reduce learners' fear of producing "incorrect" responses and encourage them to take more risks. The more risks they take, the more practice they will get; the more practice they get, the more quickly they will progress from one stage to the next.

Finally, as proposed by Pienemann, Johnston, and Brindley (1988), testing "can be geared to what is currently learnable by profiling the learner's present state of development" (p. 218). In other words, teachers can use tests to develop grammatical profiles of learners that will aid them in setting objectives and developing evaluation criteria that more directly match the learners' grammatical ability.

Disadvantages

There are, however, a number of disadvantages to incorporating the processability model into practice. The first is that the sequence in which grammatical points are taught in textbooks is generally in conflict with the model. Although Pienemann (1989) strongly recommends that sylla-

bi be designed so that items are taught in learnable order, Cook (2001), in an examination of EFL textbooks, found that while some texts introduced structures either early or late according to L 2 stages, others collapsed two L2 stages into one, omitted some stages altogether, or relied on a "skeleton of tenses and verb forms, by no means central to the processability model or indeed any of the approaches found in SLA research" (p. 33).

Another problem is that in an EFL context, such as Japan, the classroom may often be the only place where learning processes occur. Unlike in ESL environments, learners are not likely to be exposed to "natural" English outside of formal instructional settings, so it may be years before they pass from one stage to the next; Tarone and Liu (1995) mention that "if the learner is deprived of the opportunity to interact in certain contexts and role relationships, then his rate of IL development will be slower" (p. 119). Moreover, since, in Japan one primary purpose of studying English is to pass an examination guaranteeing entrance to a prestigious university, students have only six years to "master" the language for that purpose. Teachers are therefore forced to teach English at an accelerated pace, regardless of students' ability to process it.

In addition, students in the Japanese educational system are generally never held back or pushed forward if they show less or more ability than their peers; teachers tend to teach to the mean ability level, so the idea of individual levels of interlanguage may likely be ignored by most teachers. Even if some students are producing variational features and are ready to be taught, if the majority of their peers may not be at the same stage, it is unlikely that they will be accelerated to the next level. It is probable that unless specifically taught that it is not necessary to do so during their training programs, Japanese teachers of English teachers will likely "demand correct speech in L2-courses" rather than "accept interlingual deviations" (Meisel, et al. 1981, p. 132). In other words, these teachers will still tend to favour the concept of "mastery" over that of "emergence" (Pienemann et al, 1988).

In addition, as Lightbown (1998) mentions, "teachers and syllabus writers could come to treat developmental sequences as a new basis for syllabus or materials design" (p. 188). What this implies is that instead of "returning to" the teaching of language features in isolation, Japanese English teachers may "continue to" do so.

Finally, with regards to using testing to determine students' current levels, Japanese education being largely test-driven, adding yet another test to the mix would possibly hinder rather than promote language learning. Unless very well trained and understanding the purpose of such testing, teachers and administrators would likely, in contrast to Pienemann et al's (1988) recommendation, use such tests to stream or evaluate students. In the end, they and their students may perceive it as a goal rather than a means.

Conclusion

In conclusion, knowledge of the Multidimensional Model, Processability Theory, and Teachability Hypothesis could possibly benefit Japanese English teachers in teaching English in a way more adapted to their students' needs, while still fulfilling the requirements of educational bodies, and helping students with the reality of entrance examinations. However, teachers will still have to be made aware that there is no one-size-fits-all method for language teaching. Although the

occurrence of change in language teaching methods in Japan moves at a slow pace, transformation does occur thanks to Ministry initiatives, such as the JET Program, and the specification of communicative language goals. However, real change can only take place at the classroom level, by making practical applications of theory available, if not in teacher training programs, then via conscientious teachers who attend workshops and conferences.

References

Brindley, G. (1987). Verb tenses and TESOL. In D. Nunan (Ed.), *Applying second language acquisition research*. Adelaide: National Curriculum Resource Centre.

Cook, V. (2001). *Second language learning and language teaching*. (3rd. ed.). New York: Oxford University Press.

Dyson, B. (1996). The debate on form-focused instruction: a teacher's perspective. *Australian Review of Applied Linguistics, 19*, 59-77.

Ellis, R. (1993). The structural syllabus and second language acquisition. *TESOL Quarterly, 27*(1), 91-113.

Gorsuch, G. (2001). Japanese EFL teachers' perceptions of communicative, audiolingual and yakudoku activities: The plan versus the reality. *Education Policy Analysis Archives, 9*(10) ISSN 1068-2341. Retrieved May 15, 2006, from http://epaa.asu.edu/epaa/v9n10.html

Lamie, J.M. (2000). Teaching English in Japan: Professional development and training at a crossroads. *JALT Journal, 22*(1), 27-45.

Lightbown, P. M. (1988). The importance of timing in focus on form. In C. Doughty & J. Williams, (Eds.), *Focus on form in classroom SLA*. Cambridge: Cambridge University Press.

Meisel, J.M., Clahsen, H. & Pienemann, M. (1981). On determining developmental stages in natural second language acquisition. *Studies in second language acquisition, 3*, 109-135.

Ministry of Education, Culture, Sports, Science, and Technology. (2003). *The course of study for foreign languages*. Retrieved May 29, 2006 from http://www.mext.go.jp/english/shotou/030301.htm

Mitchell, R. & Myles, F. (1998). *Second language learning theories*. London: Arnold.

Pienemann, M., Johnston, M. & Brindley, G. (1988). Constructing an acquisition-based procedure for second language assessment. *Studies in second language acquisition, 10*(2), 217-243.

Pienemann, M. (1988). Developmental dynamics in L1 and L2 acquisition; Processability Theory and generative entrenchment. *Bilingualism: Language and cognition, 1*(1), 1-20.

Pienemann, M. (1989). Is language teachable? Psycholinguistic experiments and hypotheses. *Applied Linguistics, 1*, 52-79.

Sato, M. & Asanuma, S. (2000). Japan. In P. Morris and J. Williamson (Eds.), *Teacher education in the Asia-Pacific region* (pp. 107-131). New York: Falmer Press.

Spada, N. & Lightbown, P. (1999). Instruction, first language influence, and developmental readiness in second language acquisition. *The modern language journal, 83*(1), 1-22.