

# Processing Instruction: An Input Based Approach for Teaching Grammar

Madhu Neupane

## Abstract

*The present article is an attempt to highlight the importance of teaching grammar in Second Language Acquisition (SLA). It outlines the arguments forwarded for and against teaching grammar and approaches to teaching grammar. Mainly the article focuses on Processing Instruction-an input based approach for teaching grammar. It also presents the methodology followed by its originators to provide the researchers who want to conduct a similar research.*

**Key words:** Second Language Acquisition, Processing instruction, input, output

## Introduction

Grammar teaching has been a matter of debate for a long time especially for foreign or second language teaching. On the one side of the continuum, there are people who claim that grammar teaching is not necessary because its teaching does not help in the acquisition of the language. Krashen and Terrell (1983 p. 144) support this view when they say, “we prefer to avoid oral grammar instruction in classroom simply because they take time away from acquisition activities”. On the other side of the continuum there are others who claim that grammar teaching is necessary. Cowan (2009 p. 3) highlights the importance of teaching grammar when he says, “...grammar is one aspect of adult language on which instruction can have a lasting effect”. Ur (1996 p.5 as cited in Gnawali, et al.2061 p. 205) expresses doubt on the effectiveness of communicative activity to develop accuracy in learners when she mentions, “ability to communicate effectively is probably not attained most quickly or efficiently through pure communication practice in the classroom- not, at least, within the framework of formal course of study”. Thornbury (1999 p.16) agrees with Ur when he says, “Research suggests that learners who receive

no (grammar) instruction are at the risk of fossilizing sooner than those who receive”. Dekeyser and Sokalski (1996) mention that one of the most fundamental controversies in the field of second language acquisition concerns whether SLA in adults more resembles the acquisition of other cognitive skills by adults or first language acquisition by children. Proponents of the first view argue that adults have lost or have diminished access to, the grammar generating capacities of the child and substitute for them by drawing on the problem solving skills used in other cognitive domain, with varying success. Those who favor the view that SLA in adults has much in common with child language acquisition insist that even adults typically learn rules implicitly, and that the careful piecing together of sentences on the basis of rules, drawing on a general problem solving skills has no role to play in SLA Process.

Thornbury (1999 p. 14) highlights the grammar debate when he mentions “in fact no other issue has preoccupied theorists and practicers as the grammar debate, and the history of language teaching is essentially the history of the claims and counter-claims for and against the teaching of grammar”. One of the main differences in language teaching

methods lie in the attitude they have on the role of grammar. While giving the historical overview of the role of grammar Bygate et al. (1994) mention that within the centuries old tradition of language learning dominated by Latin and Greek, the study of language meant primarily the study of its grammar. Grammar was given central role in structural linguistics. Wilkins (1972 as cited in Bygate et al. 1994 p. 2) mentions "It is the aim of the linguist to reveal the system of the language, the langue, and of the language teacher to enable people to learn it". At that time knowing grammar was equated to knowing language. The role of grammar declined with the introduction of Communicative Language Teaching movement which tended to downplay the value of grammar teaching by giving more priority to fluency rather than accuracy. But by the second half of the 1980s grammar has been rediscovered. According to Thornbury (1998), the arguments in favor of teaching grammar include: *sentence machine argument* (grammar helps to produce innumerable number of grammatically correct novel sentences on the basis of finite number of rules), *fine-tuning argument* (grammar develops accuracy in the use of language), *the advance organizer argument* (knowledge of grammar will be helpful for future when the situation demands the learners to use the language), *the discrete item argument* (grammar makes the vast system of language digestible for the learners by dividing it in different areas), *the rule of law argument* (teaching grammar helps the teacher to manage and control the class) and *the learner's expectation argument* (grammar teaching satisfies the expectation of the learners who favor the rule governed approach to language learning). On the other hand, the argument which are forwarded for not teaching grammar include: *the knowledge how argument* (teaching grammar provides the learners with the knowledge about language rather than the knowledge of language), *the communication argument* (we learn language to use it or we use language by using it. So communication should be emphasized rather than teaching grammar), *the acquisition argument* (learnt knowledge cannot be converted into acquired knowledge therefore teaching grammar does not help), *the natural order ar-*

*gument* (learners have their own mental syllabus for learning language i.e. they should pass through developmental process to acquire language. Teaching grammar cannot alter the mental approach), *the lexical chunk argument* (learners learn many grammatical patterns like *how are you, have a nice day*, etc. as lexical chunks without being able to analyze them), *the learners' expectation argument* (teaching grammar goes against those learners who want to learn language by being involved in communication).

In spite of the arguments for both for and against teaching grammar, it has been realized that grammar teaching does help for the acquisition of language in question. Accuracy without fluency is meaningless. At the same time fluency without accuracy is not desirable. Learners are supposed to have both accuracy as well as fluency. So they should be provided with the opportunity to use language in communication as well as systematic knowledge of the language. Neither should accuracy be emphasized at the cost of fluency nor fluency at the cost of accuracy.

In Nepal the English language is taught as a compulsory subject from grade one to bachelor level and as a subject of specialization up to master's level. An attempt is made to introduce grammar explicitly. Even the textbooks which follow the communicative approach introduce grammar explicitly though the approach of presentation is more contextualized. A separate grammar book 'Exploring Grammar in Context' by Carter, Hughes and McCarthy is included in compulsory English course for bachelor first year in education. Master's level students specializing English in education study the separate course 'English Grammar for Teachers' carrying 100 full marks. This shows that teaching grammar is emphasized in English language teaching in Nepal.

In spite of this, the majority of the students in all levels are not found to be able to express considerable level of accuracy in the use of language. Due to this they are being penalized not only in English language courses but also in other courses where the medium of instruction is English. Furthermore the students who want to go abroad for study have

to take exam for proficiency in English where they need to show considerable degree of accuracy. So it is the time for ELT teachers to reconsider the ways of teaching of grammar so as to make it effective. Processing Instruction (PI) may be an answer for those teachers searching for an effective way for teaching grammar. Hence, the purpose of this article is to provide the readers with the concept and procedures of PI so that they will be able to apply it in their own classroom situation.

### Approaches to Teaching Grammar

There are different approaches to teaching grammar. Inductive (starts with the presentation of some examples from which a rule is inferred) and deductive (starts with the presentation of the rule and is followed by examples in which the rule is applied) approaches are the commonly used approaches for teaching grammar. Carter, Hughes and McCarthy (2000 p.viii) say, "an inductive approach to learning grammar often involves providing lots of examples so that the patterns of usage can be seen". Similarly Cowan (2009 p. 32) mentions that an inductive instruction "involves having students formulate rules from natural language and it is perhaps more useful in teaching intermediate and advanced students". In a deductive approach, according to Cowan (ibid.), "different structures are presented and then practiced in different kinds of exercises and activities including memorizing dialogues, reading simplified texts, doing transformation exercises and getting explicit negative feedback." Grammar can be taught by using texts i.e. textual approach. The advantage of using texts for teaching grammar is that they provide the context for the use of the language item in question. There are two types of texts: authentic and non authentic. Foreman (1986 as cited in Underwood, 1989 pp. 98-99) makes distinction between authentic and non authentic text by saying, "any text is authentic if it is produced in response to real life communicative needs rather than an imitation of real life communicative needs." There are advantages and disadvantages of both the type of texts. Depending on the situation the teachers can decide the type of text that will be appropriate for the learners. There are approaches based on input hypothesis

as well as output hypothesis. The approaches based on input give more priority to input (i.e. exposure) whereas the approaches based on output give more priority to output (i.e. production). There are evidences to support both the approaches. Processing instruction is an approach based on input hypothesis. The PI will be discussed in a bit detail in this article.

### Input Processing and Processing Instruction

As mentioned earlier (PI) is an approach to teaching grammar based on Krashen's (1981) input hypothesis. According to VanPatten, the originator of the PI approach, (1996), PI is an input based grammar instruction which aims to affect learners' attention to input data which is in compliance with second language theories and communicative language teaching. Sheen (2005) says that mostly the input based innovations have not been proved to be effective for helping learners to acquire accuracy but VanPatten's PI has been proved to be effective. VanPatten accepts the fundamental role of input and uses the term input processing for the cognitive process which occurs when input is understood and integrated into language. The concept of input is single most important concept of second language acquisition. Second language learning cannot be imagined without input.

Van Patten (1996 as cited in VanPatten 2002a p. 758) has presented one model of IP in order to provide the theoretical foundation to it. This model consists of a set of principles which are presented below:

#### *Principles of Input Processing*

- P1. Learners process input for meaning before they process it for form.
  - P1a. Learners process content words in the input before anything else.
  - P1b. Learners prefer processing lexical items to grammatical items (e.g. morphology) for the same semantic information.
  - P1c. Learners prefer processing "more meaningful" morphology before "less" or "non-meaningful" morphology.

- P2. For learners to process form that is not meaningful, they must be able to process informational or communicative content at no (or little) cost to attention.
- P3. Learners possess a default strategy that assigns the role of agent (or subject) to the first noun (phrase) they encounter in a sentence/utterance. This is called the first-noun strategy.
- P3a. The first-noun strategy may be overridden by lexical semantics and event probabilities.
- P3b. Learners will adopt other processing strategies for grammatical role assignment only after their developing system has incorporated other cues (e.g., case marking, acoustic stress).
- P4. Learners process elements in sentence/utterance initial position first.

He elaborates these principles by giving example from Spanish: *Ayer mis padres me llamaron para decirme algo importante*. Here, both the lexical item *ayer* and the verb inflection *-aron* encode pastness. The learner does not have to allocate attention resources to a verb form to grasp that the action took place before the present. At the same time, *mis padres* as well as *aron* encode plurality, and again the learner does not have to allocate attentional resources to an inflection to get that the subject is plural. In case of an English sentence 'he came here yesterday' both lexical item *yesterday* and verb form *came* encode pastness the learners can understand the concept time without paying attention to the form of the verb *came*.

This kind of intake data may be important for Universal Grammar. To summarize, in the word of VanPatten, research on IP attempt to describe which linguistic data in the input get attended during comprehension and which do not and what grammatical roles learners assign to nouns. Intake is that subset of filtered input that the learners actually process and hold in working memory during on-line comprehension. Intake thus contains grammatical information as it relates to the meaning that learners have comprehended. VanPatten (1996) mentions that IP is but one set of process related acquisition.

Focus on IP in acquisition does not suggest there is no role for output. Output may play a number of important roles in language development. VanPatten's (2002a cites Hass 1997 and Swain 1998) saying "output may play a role as a focusing device that draws learner's attention to something in the development of fluency and accuracy. Both Hass and Swain and other researchers as well, would agree that a role for output in SLA does not mean that input has any fewer roles to play in acquisition." So PI does not claim that there is no role of output. Output may have its own role in language learning.

### **PI: Basic Characteristics**

The most salient characteristic of PI is that it uses a particular type of input to push learners away from the non optimal processing strategies described in the previous section. As such PI is not a comprehension-based approach to language teaching such as total physical response, the natural approach and so on. Since the point of PI is to assist the learners in making form meaning connection during IP is more appropriate to view it as a type of focus on form or input enhancement (Smith 1993 as cited in VanPatten, 2002a) A secondary salient characteristic of PI is that during the instructional phase learner never produce the target form in question. This does not obviate the rule for output since production may be useful for the development of fluency as well as accuracy.

Three basic features or components of PI as mentioned in VanPatten (2002a p. 764) are as follows:

- i. Learners are given information about a linguistic form or structure.
  - ii. Learners are informed about particular IP strategy that may negatively affect their packing up of the (information) form or structure during comprehension.
  - iii. Learners are pushed to process the form or structured input: input that is manipulated
- These three components are exemplified in the following structure. (The original examples were in French)

*John makes Mary walk the dog*

In the example there are two verbs and two nouns functioning as subjects. The first verb is *makes* with the subject *John*. The second verb is *walk* with its underlying subject *Mary*. It is the problem for the learners of Nepali. When asked who walks the dog? Learners may overwhelmingly say “John,” since he is the first noun that appears before the verb, thus demonstrating their reliance on P3. In short, learners tend to gloss over the verb *make* and process the second verb. At the same time, they assign the first noun as subject of the second verb. With this in mind, a PI supplemental lesson on the causative would first begin with a brief explanation of what the structure is and looks like. Following this, learners would be told that it is natural to process the first noun as the subject of the verb but that this is inappropriate for this structure. Subsequently they would work through written and aural activities in which they are pushed to process sentences correctly. These activities are called structured input activities. Here is one example:

*Activity A.* Listen to each sentence. Then indicate who is performing the action by answering each question.

1. Who cleaned the room? .....
2. Who made an omelet? .....
3. Who did his homework? .....
4. Who made a diagram? .....

*Activity A. Teacher’s script:* Read each sentence once. After each sentence, ask for an answer. Do not wait until the end to review answers. Students do not repeat or otherwise produce the structure.

1. Ram made Rama clean the room.
2. The teacher made the student do his homework, etc
3. Ram made an omelet.
4. The teacher made a diagram.

The above are examples of *referential* structured input activities. Referential activities are those for which there is a right or wrong answer and for which the learner must rely on the targeted grammatical form to get meaning. Normally, a sequence of struc-

tured input activities would begin with two or three referential activities. It is important to point out that in the above activities, causative structures with *made* are mixed in with non causatives with *made*. In this way, learners are pushed to listen to every sentence and not to apply a strategy that judges all sentences to be causative simply because that is the grammatical point that they are learning. Following referential activities, learners are engaged in *affective* structured input activities. These are activities in which learners express an opinion, belief, or some other affective response and are engaged in processing information about the real world. The following is an example of an affective activity that could follow the above referential activities:

*Activity B.* In this activity you will compare and contrast what someone gets a child to do with what someone gets a dog to do. For each item, indicate whether it refers to the small child, the dog or possibly both. An adult....

1. made a child/a dog bark.....
2. made a child/a dog eat meat.....
3. made a child/a dog laugh.....
4. made a child/a dog wag its tail.....
5. made a child/a dog dance.....
6. made a child/a dog read a story.....
7. made a child/a dog chew a piece of bone.....
8. made a child/a dog write a letter.....

Does everyone in class agree?

(Note that in PI there are no mechanical or non meaningful activities.

It should be noted that PI is applicable to all grammatical problems whether they be word-order related or otherwise.

### **The Original Study Conducted by VanPatten and Cadierno**

The study that launched the research agenda (and sub-sequent discussion) on PI is Vanatten and Cadierno (1993 as cited in VanPatten 2002a). I have pre-

sented the methodology of their study in a considerable detail thinking that it will be helpful for the researchers who want to conduct a similar study. In the study, they set out to answer the following research questions:

1. Does altering the way in which learner's process input have an effect on their developmental systems?
2. If there is an effect, is it limited solely to processing more input or does instruction in IP also have an effect on output?
3. If there is an effect, is it the same effect that traditional instruction (TI) has (assuming an effect for the latter)?

They compared three groups of learners: a PI group ( $n = 27$ ), a TI group ( $n = 26$ ), and a control ( $n = 27$ ). The PI group received instruction along the lines presented earlier. The focus was word order and object pronouns in Spanish.

In the TI group, learners received a treatment based on themes popular in Spanish college-level text at the time. The treatment involved a typical explanation of object pronouns, including the complete paradigm of the forms, and then was followed by mechanical, and then meaningful, then communicative practices. At no time did this group engage in any interpretation activities. Both experimental treatments were balanced for tokens, vocabulary, and other factors that could affect the outcome. In addition, all instruction was performed by the same instructor and lasted two days. This instructor believed that there would be differential outcomes; that the processing group would learn to interpret better and that the traditional group would be better at production (an important point to bring up given the results).

The control group received no instruction on the target structure and instead read an essay and discussed it in class. An analysis of variance on the pretests yielded no differences among the groups on the two tests prior to treatment. In the post testing phase, the processing group made significant gains on the interpretation test, whereas the traditional and control groups did not. The gain was main-

tained for the month during which post testing was conducted. On the production test, both the traditional and processing groups made significant gains but were not significantly different from each other. These gains were maintained over the month-long post testing phase. The control group did not make significant gains in either area.

In terms of their research questions, they took their results to mean three things. First, altering the way learners process input can alter their developing systems. The processing group showed evidence of this on both interpretation and production tests. Second, the effects of PI were not limited to processing but also showed up on production measures. Finally, the effects of PI were different from those of TI. With PI learners not only became able to process better but could also access their newfound knowledge to produce a structure that they never produced during the treatment phase. The traditional group made gains only on production and did not make gains in the ability to correctly process form and meaning in the input. They took these latter results to mean that the TI group learned to do a task, whereas the PI group experienced a change in their underlying knowledge that allowed them to perform on different kinds of tasks. It is worth pointing out that at no time did their conclusions refer to comprehension versus production. Their final conclusion was that instruction that was directed at *intervening in learners' processing strategies* should have a significant impact on the learner's developing system.

Different research works have been done to find out the effectiveness of processing instruction in teaching grammar. Some of them have confirmed the results of VanPatten and Cadierno and some of them are different. The studies which confirmed the results of VanPatten and Cadierno (1993 as cited in VanPatten 2002a) are: Cadierno (1995), Cheng (1995), Farley (2001), Buck (2000), Van Patten and Wong, Betani (2001). According to VanPatten (2002a), these works offer evidence that the results of Van Patten and Cadierno (1993) are generalizable in other situation as well. There is evidence for the superiority of PI over TI.

The researchers who have questioned the findings

are: Dekeyser and Solkaski (1996), Collentine (1998). Dekeyser and Solkaski (1996) mention, "Relative complexity of the structure however could affect the degree to which input and output practice are useful". A morphologically complex structure may be easier to notice but harder to produce correctly than a simpler structure; a simpler structure may be inconspicuous and therefore harder to notice but easier to produce by virtue of its simplicity. Nagata (1995 as cited in Dekeyser and Solkaski (1996a)) confirmed this hypothesis when she compared input and output practice in a group of English speaking students learning the Japanese honorific system.

### Conclusion

PI may offer an area for further research on its effectiveness in teaching grammar. Such research can be focused in the areas in which Nepali learners of English are likely to commit mistakes. Sheen (2007) puts, "PI can be seen as a practical solution to the difficulty of having learners transform their understanding of grammatical explanation into communicative use. Nevertheless, teachers thinking of adding PI to their repertoire of grammar teaching techniques may wish to modify it in the light of their own experience." VanPatten (2002a) mentions, "PI is unique as a particular type of input-oriented approach to instruction on formal features because of its attempt to alter processing strategies, and that the challenges made to it must be interpreted with caution...PI is superior to TI." It can be applied in teaching different grammatical items. If the learners are provided with the opportunity to process instruction they might have lasting effect of learning grammar. Text book writers can have a place for PI in designing exercises.

Madhu Neupane teaches at the Department of English Education, Tribhuvan University, Nepal. Her area of interest includes grammar teaching and second language learning. She has published articles in different Journals and presented papers in seminars and conferences.

### References

- Allen, L. Q. (2000). Form-meaning connections and the French causative: An experiment in processing instruction. *Studies in Second Language Acquisition*, 22, 69–84.
- Benati, A. (2001). A comparative study of the effects of processing instruction and output-based instruction on the acquisition of the Italian future tense. *Language Teaching Research*, 5, 95–127.
- Bygate, et al.(eds). (1994). *Grammar and language teacher*. New York: Prentice Hall.
- Carroll, S. (2001). *Input and evidence: The raw material of second language acquisition*. Philadelphia: John Benjamins.
- Carter, R. Hughes, R. and McCarthy, M. (2000). *Exploring grammar in context*. Cambridge : CUP
- Cowan, R. (2009). *The teacher's grammar of English*. Cambridge: CUP.
- Crain, S., Ni, W., & Conway, L. (1994). Learning, parsing and modularity. In C. Clifton, Jr., L. Frazier, & K. Rayner (Eds.), *Perspectives on sentence processing* (pp. 443–467). Hillsdale, NJ: Erlbaum.
- DeKeyser, R. & Sokalski, K. J. (1996). The differential role of comprehension and production practice. *Language Learning* 52/4: 613–42.
- DeKeyser, R., Salaberry, R., Robinson, P. & Harrington, M. (2002). What gets processed in processing instruction? A commentary on Bill VanPatten's processing instruction: An update. *Language Learning* 52/4: 805–23.
- Gnawali, et al. (2002). *English language teaching*. Kathmandu: NCED.
- Hadley, A. O. (2001). *Teaching language in context*. Boston: Heinle & Heinle.
- Klein, W. (1986). *Second language acquisition*. Cambridge, England: Cambridge University Press.
- Krashen, S. (1981). *Principles and practice in second language acquisition*. London: Prentice-Hall International (UK) Ltd.
- Krashen, S. (1982). *Principles and practice in SLA*. New York: Pergamon
- Krashen, S. & Terrell, T. (1983). *The natural approach*. Oxford : OUP
- Lee, J. F., Cadierno, T., Glass, W. R., & VanPatten, B. (1997). The effects of lexical and grammatical cues on processing tense in second language input. *Applied Language Learning*, 8, 1–23.

- Lee, J., & VanPatten, B. (1995). *Making communicative language teaching happen*. New York: McGraw Hill.
- Lee, J., & VanPatten, B. (in press). *Making communicative language teaching happen* (2nd ed.). New York: McGraw Hill.
- Musumeci, D. (1989). The ability of second language learners to assign tense at the sentence level: A cross-linguistic study. Unpublished doctoral dissertation, University of Illinois at Urbana-Champaign.
- Norris, J.N., and Ortega, L. (2000). Effectiveness of L2 instruction: A research synthesis and quantitative meta-analysis. *Language Learning*, 50, 417–528.
- Nunan, D. (1999). *Second language teaching and learning*. Boston: Heinle & Heinle
- Paulston, C. B. (1976). *Teaching English as a second language: Techniques and procedures*. Cambridge, MA: Winthrop.
- Rosa, E., & O'Neill, M. O. (1998). Effects of stress and location on acoustic salience at the initial stages of Spanish L2 input processing. *Spanish Applied Linguistics*, 2, 24–52.
- Salaberry, M. R. (1997). The role of input and output practice in second language acquisition. *Canadian Modern Language Review*, 53, 422–451.
- Sanz, C., & VanPatten, B. (1998). On input processing, processing instruction, and the nature of replication tasks: A response to M. R. Salaberry. *Canadian Modern Language Review*, 54, 263–273.
- Schmidt, R.W. (1992). Psychological mechanisms underlying second language fluency. *Studies in Second Language Acquisition*, 14, 357–385.
- Sheen, R. (2005). Focus on forms as a means of improving accurate oral production. In A. Housen and M. Pierrard (eds.), *Investigations in Instructed Second Language Learning*. Berlin: Mouton DeGruyter.
- Sheen, R. (2007). Key concepts in ELT: Processing instruction. *ELT Journal*, 61, 161–163
- Stevick, E. (1996). *Memory, meaning and method: A view of language teaching*. Boston: Heinle & Heinle.
- Thornbury, S. (1999). *How to teach grammar*. London: Longman.
- Underwood, M. (1989). *Teaching listening*. London: Longman.
- VanPatten, B. (1990). Attending to content and form in the input: An experiment in consciousness. *Studies in Second Language Acquisition*, 12, 287–301.
- VanPatten, B. (1996). *Input processing and grammar instruction: Theory and research*. Norwood, NJ: Ablex.
- VanPatten, B. (2000). *Processing instruction as form-meaning connections: Issues in theory and research*. In J. F. Lee & A. Valdman (Eds.), *Form and meaning: Multiple perspectives* (pp. 43–68). Boston: Heinle & Heinle.
- VanPatten, B. (2002a). Processing instruction: An update. *Language Learning* 52/4755–803.
- VanPatten, B., & Cadierno, T. (1993). Explicit instruction and input processing. *Studies in Second Language Acquisition*, 15, 225–243.
- VanPatten, B., and Oikkenon, S. (1996). Explanation vs. structured input in processing instruction. *Studies in Second Language Acquisition*, 18, 495–510.
- VanPatten, B. (1994). Evaluating the role of consciousness in second language acquisition: Terms, linguistic features, and methodology. *Association Internationale de Linguistique Appliquée Annual Review*, 11, 27–36.
- Wong, W. & VanPatten, B. (2002). *The evidence is IN and drills are OUT*. Unpublished manuscript.