Generalizability of Processing Instruction Research

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Topics of Discussion

- Theoretical foundations
- Pedagogical model
- Processing Instruction research framework
- Generalizability of Processing Instruction research
Theoretical Foundations


- What is input processing?

- Input processing is concerned with how learners initially perceive and process linguistic data in the language they hear or read.

- Input processing is concerned with those psycholinguistic strategies and mechanisms by which learners derive intake from input.

- Input processing theory captures a series of internal strategies learners might use in comprehending sentences and how these strategies might affect acquisition.

- What linguistics data learners process during comprehension?

- Why would L2 learners process some linguistics data in the input and not others during comprehension?
Theoretical Foundations

- Input processing capacity of L2 learners is limited, only certain features will receive attention during input processing.
- When learners process input, they filter the input which is reduced and modified into a new entity called ‘intake’.
- Input processing consists of two sub-processes: making form-meaning connections; and parsing.
- L2 learners must be able to connect a form with its meaning in the input they receive (the morpheme –*ed*- on the end of the verb in English refers to an event in the past).
- L2 learners must be able to determine, for example, which is the subject and which is the object in a sentence they hear or read. Learners must be able to appropriately map syntactic structure into the sentence.
In its current form, VanPatten’s theory consists of two overarching principles of input processing (each of which is further explicated with sub-principles):

- Principle 1. The Primacy of Meaning Principle. Learners process input for meaning before they process it for form.

- Principle 2. The First Noun Principle. Learners tend to process the first noun or pronoun they encounter in a sentence as the subject or agent.
Theoretical Foundations

- The Lexical Preference Principle: Learners will tend to rely on lexical items as opposed to grammatical form to get meaning when both encode the same semantic information.

- The Preference for Nonredundancy Principle: Learners are more likely to process nonredundant meaningful grammatical form before they process redundant meaningful forms.

- The Sentence Location Principle: Learners tend to process items in sentence initial position before those in final position and those in medial position.
Theoretical Foundations: processing problems

- **Lexical Preference**
  - *Yesterday I played tennis with Paul*

- **Redundancy and Meaningfulness**
  - *The cat is sleeping*
  - *The cat sleeps ten hours everyday*

- **Location**
  - *Non penso che parli bene italiano*
Pedagogical model: Processing Instruction

- What is processing instruction?
- Processing instruction is an approach to grammar instruction that will guide and focus learners’ attention when they process input.
- Processing instruction attempts to influence, alter or improve the way learners process input.
- This pedagogical approach works with input and with the processes learners use to get data from that input.
- Processing instruction consists of three basic components:
  - Learners are given information about a linguistic structure or form.
  - Learners are informed about a particular processing strategy that may negatively affect their picking up of the form or structure during comprehension.
  - Learners are pushed to process the form or structure during activities with structured input - input that is manipulated in particular ways to push learners to become dependent on form and structured to get meaning.
Pedagogical model: Processing Instruction

- Present one thing at a time.
- Keep meaning in focus.
- Move from sentences to connected discourse.
- Use both oral and written input.
- Have the learner do something with the input.
- Keep the learner’s processing strategies in mind.

- 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.

- Affective structured input activities are those in which learners express an opinion, belief, or some other affective response and are engaged in processing information about the real world.
Pedagogical model: Structured input activities

- Surveys
- Binary options
- Matching
- Selecting alternatives
Processing Instruction research framework

1. How does Processing Instruction compare to other types of instruction?
2. What makes Processing Instruction effective?
3. Are the effects Processing Instruction durative (short-term) and longitudinal (long-term)?
4. Can Processing Instruction be delivered effectively online as well as in classrooms?
5. How effective is Processing Instruction for improving learner’s performance on discourse-level tasks?
6. Can you increase the positive effects of structured input practice on language development by enhancing it aurally and/or textually?
7. What are the transfer-of-training effects for processing instruction?
1. Processing Instruction is more effective than traditional instruction (VanPatten & Cadierno, 1993; Benati, 2001; Cheng, 2004).

-interpretation: PI > TI
-production: PI = TI


-interpretation: PI > MOI
-production: PI = MOI


-interpretation: PI = SI > EI
-production: PI = SI > EI

4. Processing Instruction can be delivered quite effectively by a computer to an individual learner. The computer is not superior to an instructor when it comes to Processing Instruction (Lee & Benati, 2007a).

- interpretation: classroom = computer
- production: classroom = computer

5. Processing Instruction has been effectively measured in sentence and discourse tasks (interpretation and production, Benati & Lee, 2010).

- interpretation: yes
- production: yes

6. Textual and aural enhancement of structured input activities do not bring about greater improvement in learners’ performance (Lee & Benati, 2007b).

- interpretation: PI/SI = PI/SI enhanced
- production: PI/SI = PI/SI enhanced

7. Processing instruction has primary and secondary effects (Benati & Lee, 2008).

- interpretation: yes
- production: yes
Processing Instruction research framework

- Spanish direct object pronouns
- Spanish third person past tense
- English simple past tense
- French imperfect
- English third person singular
- Italian future tense
- French future tense
- Spanish copula
- French causative
- Italian subjunctive
- French subjunctive
- Spanish subjunctive
- Italian gender agreement
- Japanese passive forms
- English passive forms
Generalizability of Processing Instruction Research

- Processing Instruction is effective with different processing strategies.
- Processing Instruction has positive effects on a variety of grammatical forms (morphology, syntactic structures and semantics linguistics items).
- Processing Instruction is effective in different languages (e.g. English, French, German, Italian, Spanish, Japanese).
- Processing Instruction is effective for instilling target-language specific strategies, no matter the native language of the learners (Chinese, Greek, Italian, English, Japanese).
- Processing Instruction is an effective pedagogical intervention with young learners as well as with older learners.
Generalizability of Processing Instruction Research

- The Strategies Hypothesis
- The Target Language Hypothesis
- The Native Language Hypothesis
- The Age Hypothesis
The Strategies Hypothesis

- Processing Instruction can help L2 learners to apply appropriate processing strategies.

- Processing Instruction data exist for syntactic strategies, perceptual strategies and semantic strategies.
The Target Language Hypothesis

- Processing Instruction can help learners of any target language develop an appropriate, target-language specific processing strategy to address a target-language specific processing problem.

- Processing Instruction is equally effective across a variety of romance and non romance languages.
The Native Language Hypothesis

- Processing Instruction will be effective for instilling target-language specific processing strategies, no matter the native language of the learners.

- Processing Instruction data exist for different L1s.
The Age Hypothesis

- Processing Instruction will be just as effective as an intervention with younger learners as it is with older learners.

- Processing Instruction data exist for school-aged learners and adult learners.
THANK YOU