

The Effect of Input Processing Instruction on Teaching English Past Tenses

Abstract:

This article explores the effectiveness of a new type of instruction called “Input processing instruction” on the acquisition of English past tenses. Input processing instruction is compared with traditional “Output-based instruction” to enhance learners’ grammatical accuracy and their explicit knowledge. The results of the study indicate a considerable effect of input processing instruction on the improvement of both learners’ grammatical accuracy and their explicit knowledge.

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Résumé :

Cet article explore l'efficacité d'un nouveau type d'enseignement appelé "instruction de traitement d'input" sur l'acquisition du passé simple en anglais. L'instruction de traitement d'input est comparée à «l'instruction sur la base de résultats» traditionnelle pour améliorer la l'exactitude grammaticale des apprenants et leur connaissance explicite. Les résultats de l'étude indiquent un effet considérable de l'instruction de traitement d'input sur l'amélioration de la l'exactitude grammaticale deux apprenants et leur connaissance explicite.

Introduction :

Providing efficient grammar instruction has been the major concern of many teachers and researchers to gain positive outcomes in the learning process. Grammar instruction has been exposed to tremendous changes over the centuries. These changes were affected by the need for developing the teaching system. There was a need for rethinking traditional approaches and seeking for a better way for improving grammar instruction. Many

linguists struggle to find out the appropriate method for learning and teaching grammar. Vanpatten (1996) proposes a type of instruction called “input processing instruction” as an alternative to traditional “output-based instruction” to help learners process the input correctly and convert input to intake. Input processing instruction is comprehension-based rather than production-based, and provides learners with explanation and comprehension exercises, whereas output-based instruction provides learners with explanation and production exercises.

1. Input Processing

One of the multiple processes that has its significant role in language acquisition and helps learners make the initial connection between a grammatical form and its meaning is called input processing. It is a model which is developed by Vanpatten (1996) and which is based on how learners process input. It stems its basics from Krashen’s (1982) input hypothesis. Lee and Vanpatten (1995: 96) define input processing as the “process of making form-meaning connections from linguistic data in the input for the purpose of constructing a linguistic system”. Input processing is also defined by Sanz and Vanpatten (1998: 50) as “a research domain about how learners make form-meaning connections as well as parse incoming sentences in the second language”. From these two definitions, we can say that input processing is a process that makes learners process linguistic data they hear or read, either how they get form from input or how they assign grammatical roles to nouns by comprehension.

2. Processing Instruction

Vanpatten’s input processing model (1996) has inspired second language acquisition through a new type of explicit grammar instruction called processing instruction. Vanpatten (2005: 272) defines processing instruction as “a type of explicit instruction or focus on form derived from the insights of input processing”. It is an approach which is input-based that seeks to show learners the best way for following efficient strategies and getting rid of problems they may confront during input processing. Vanpatten (1996: 60) notes that the purpose of processing instruction is to change the inefficient processing strategies used by learners for the sake of comprehension and guide them to use better form-meaning connections more than if they were left to their own devices.

Processing instruction also helps learners convert input to intake. Vanpatten (1993: 438) states that processing instruction aims to “direct learners’ attention to relevant features of grammar in the input and to encourage form-meaning mappings that in turn result in better intake”. In this sense, the essential criterion for input to become intake is to focus learners’

attention on particular features of grammar. The following figure which is illustrated by Vanpatten (1993: 436) shows the conversion of input to intake.

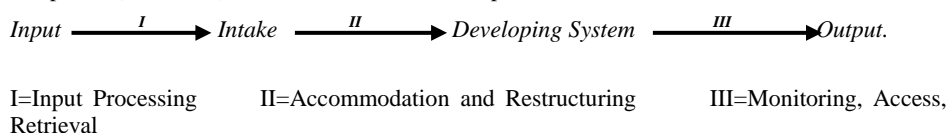


Figure 1: Vanpatten (1993: 436) Input Processing Model.

This figure represents the conversion of input to intake (stage1) which is called input processing. The second stage as illustrated in the figure is called accommodation and restructuring. The two concepts contribute in the incorporation of intake into the developing system (*ibid.* 436). The last stage involves the use of the developing system to make output.

Vanpatten (1996: 60) outlines that processing instruction has three main components: the explanation of the relationship between a given form and the meaning it can convey, information about processing strategies and structured-input activities. The explanation of the relationship between a given form and the meaning implies that learners should be given the amount of information needed for getting the correct relationship between a particular form and its meaning. Vanpatten (*ibid.*) considers that this component can be similar to the traditional approaches for grammar instruction in presenting the information for the learners. In information about processing strategies, learners are provided with information about the input processing strategies that hinder learners from processing the language correctly. Learners should know why they tend to use wrong and inappropriate directions for processing the target structures. So, the role of processing instruction lies in altering learners' wrong strategies towards effective and efficient ones. This component, as stated by Vanpatten (1996: 60), is restricted to processing instruction. In structured input activities, students are required to pay attention to the form of the structure and process its meaning. These activities do not push learners to produce language structures at any time. Lee and Vanpatten (2003: 160) present the types of structured-input activities that do not force learners to produce the activity while they engage in using the target language. These types involve binary options, ordering, ranking, selecting alternatives, matching surveys, and supplying information. Structured input activities aim to change learners' ways in adapting the incorrect strategies and to follow the more suitable ones. Vanpatten (1996: 60) notes that instruction is based on "structured input activities in which learners process form from the input in controlled situation so that better form-meaning connections might happen compared with what might happen in less controlled situations". The development of structured input activities is basically based on illustrating the problem that is confronted while processing the target language. Wong (2004: 37) states that "for an activity to be an SI activity, that activity must somehow push learners to circumvent an efficient processing strategy".

3. Research Methodology

The current study is directed by two main hypotheses.

- Grammar input-processing instruction would be more effective than output-based instruction for promoting grammatical accuracy about English past tenses.

- Grammar input-processing instruction would be more effective than output-based instruction for enhancing learners' explicit knowledge about English past tenses.

This research work is based on an experimental research design. According to Marczyk *et al.* (2005: 3), an experimental design focuses on testing cause-and-effect hypotheses and drawing conclusions by comparing two groups on one possible outcome. So, to investigate the effect of "input processing instruction" on the acquisition of English past tenses, we need to establish a pre-test post-test experiment to conduct the research work. For investigating the impact of the independent variable on the dependent variable, we opted for a t-test as an essential robust test to analyse the data obtained in the pre-test and the post-test.

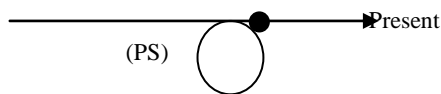
The target population of this study is first-year LMD students at Constantine University 1 during the academic year 2012-2013. The population consist of twenty (20) groups about forty (40) students per group. The sample comprises two groups: the control group involves thirty (30) students and the experimental group also involves (30) students. The number of the participants in the experimental group was more than thirty (30) students, however; we decided to work with only thirty students because some participants were absent in the pre-test, others during the instruction, and some others were absent in the post-test. The subjects have been randomly selected as assigned by the administration. Their age approximately varies from eighteen (18) to twenty-two (22) years old, and they have been studying English for five years.

The students were introduced during two months to two different instructional packets: output-based instruction and processing instruction. These types of instruction were based on Vanpatten's model of input processing instruction (1996, 2002). The materials developed for the processing instruction group involved three stages: an explanation of the target grammatical structure, information about processing strategies and structured input activities. At the end of instruction, students were expected to use past tenses accurately and ameliorate their explicit knowledge about English past tenses. In the explanation stage, the experimental group was exposed to an explicit instruction of the English past tenses using the deductive and the inductive ways of instruction. Students firstly were given a set of examples of each past tense and their affirmative, negative and interrogative form in disorder, in which they were required to match each sentence with its correct form. The students were not asked to find the form of tenses by themselves in order not to force them towards production. After that, students were provided with multiple-choice options about the rules which govern the use of past tenses about the same sentences given to them at first, and they were required to select the appropriate answer from the alternatives. The students were pushed to comprehend and interpret those examples carefully to induce and find the rules that govern each tense. When the students did not manage to find out the rules by themselves, the teacher provided a thorough explanation to help them make a correct connection between a given form and its use.

At the processing information stage, students were given information on how to process input correctly and abandon their inefficient strategies when they express the past such as translation from the mother tongue, overgeneralization of rules, making wrong hypotheses about the correct rule and over emphasizing their dependence on time markers. The aim of this stage is to help learners get rid of confusion between English past tenses and reduce those problems that learners of English are confronted with while processing the input. This stage was exclusively directed to the experimental group since traditional instruction does not focus on processing the input. Henceforth, some of the information which guided and helped students contrast between

the past tenses for enriching their comprehension and reducing confusion between those tenses for expressing the past are illustrated in the following examples:

- In order not to confuse the past simple with the present perfect simple, keep in mind that the past simple is used to refer to a particular point in time in the past and excludes the present as the following timeline shows:



Yesterday, I visited my friend.

- Do not confuse the past continuous with the past simple when there is a time adverb because the past continuous always stresses the ongoing action in the past and not a complete event in the past as this timeline shows:

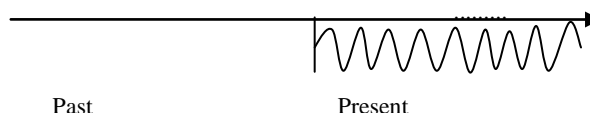
- a. An action happening at precise moment in the past.



He was sleeping at 9:00 o'clock yesterday.

- In order not to confuse the present perfect simple with the past simple, keep in mind that the present perfect simple is usually connected in some way to the present simple.

I have known her since I was ten years old.



- Do not confuse the present perfect continuous with the present perfect simple because the present perfect continuous stresses the length of the action, while the present perfect simple stresses how much or how many the action has been done.
- Do not confuse the present perfect continuous with the past continuous because the past continuous stresses the ongoing action in the past and excludes the present, while the present perfect continuous stresses the progression of the action from the past to the present and future.
- Do not confuse the past perfect simple with the past simple because the past simple is used to describe a completed action in the past at specific time, while the past perfect simple is used to describe completed action before another completed action or event in the past.

At the practice stage, students were provided with structured input activities to push the processing group process the form and the meaning of the past tenses through comprehension-based activities. Structured-input activities require a right or wrong answer that indicates whether or not the students have processed the input correctly. These activities involve the contrast between each two past tenses which provoke most of the errors for the students. The students were required to depend on both time markers and context for interpreting the correct meaning of the past tenses and receiving the relevant intake data without any production required. These activities were taken from different grammar books which made students process the accurate use of the past tenses through selecting alternatives and matching. An example of these activities is shown below:

Activity One: Read what each speaker is thinking about. Tick (x) the best sentence for the speaker to use.

1. I want to know about your action after the president's death.
 - a) What did you do when the president died?.....
 - b) What were you doing when the president died?.....
2. I want to describe the situation at the party when I arrived.
 - a) Everyone danced....
 - b) Everyone was dancing.....

(Nettle and Hopkins, 2003: 26)

Activity Two: Match each sentence (A and B) in the pairs below with its meaning.

1. A. I've been reading the book you lent me on genetics.

B. I've read the book you lent me on genetics.

1. I've finished the book.

☐

2. I'm still reading the book.

☐

2. A. The firm gives company cars to junior managers.

B. The firm has been giving company cars to junior managers.

1. This is the company's usual policy. It's unlikely to change.

☐

2. This isn't the company's usual policy. It may change.

☐

(Foley and Hall, 2003: 67)

The instructional packet used for the output-based instruction group also involved three stages: presentation, practice and production. In the presentation stage, the control group was also provided with a thorough explanation of the English past tenses using the deductive and inductive ways of instruction. In finding the form of past tenses, students were given some examples about the affirmative, negative and interrogative form of each past tense. The teacher then asked the students to induce the form of the tenses by themselves. If the students fail to provide the correct answer, the teacher interferes by presenting the right answer. The teacher then kept the same examples given at first and asked the students to induce the rules that govern the use of the past tenses by themselves without providing them with multiple-choice answers. When the students could not find the correct answer, the teacher helped them and provided the appropriate explanation. At the practice stage, the teacher provided the control group with activities in which they were requested to produce the target form. The types of activities in output-based instruction constituted a series of isolated sentences and texts to push learners practise the tenses through context. In all the exercises, students were required to conjugate the verb between parentheses in the right tense. The aim of these activities is to enable the learners use the target structures accurately in different contexts.

Activity One: Read this email and put in the correct form of each verb.

Hi Bea

A funny thing **1** (happen) to me and my flatmates on Saturday.

On Friday night we **2** (go) to the college party. There were some new students there and we **3** (meet) someone called Lucas. We **4** (invite) him to Sunday lunch. It was a great party so we **5** (not/go) home until three o'clock.

Of course, we **6** (not/get) up early on Saturday morning. At half past twelve I **7** (watch) TV in my pyjamas, Marie **8** (have) a shower and Wendy **9** (read) a magazine. Suddenly someone **10** (ring) the doorbell. I **11** (look) out of the window to see who was there. Lucas **12** (stand) on the step. I **13** (go) to the door but I **14** didn't open/wasn't opening it. I said 'hello?' and he said 'hello, I've come for lunch.' Oh no! He'd got the wrong day!!

We **15** (get) dressed in three minutes! luckily, we **16** (have) enough food, and he seemed to enjoy it. How was your weekend? Love Annette

Adopted From (Hashemi and Thomas, 2006: 26)

At the production stage, students were exposed to free writing activities to help them practise the target structures in less controlled ways. This kind of activities enables students to use their own knowledge in a real context.

Activity One:

- Step One: individual work: write a small narrative paragraph.
- Step Two: pair work: identify the different tenses.
- Step Three: class discussion.

Before the treatment took place, students were provided with twenty (20) multiple-choice sentences about the use of six types of English past tenses (the past simple, the past continuous, the present perfect simple, the present perfect continuous, the past perfect simple and the past perfect continuous) to assess their grammatical accuracy. The test also provided learners with twenty multiple-justification test for the use of English past tenses to assess their explicit knowledge. The students were asked to opt for the appropriate tense from three or four alternatives and to opt for the correct justification for each tense used. The typical score of the test is forty (40) points. For the grammatical accuracy, one point is awarded to each correct answer and of course, no points for incorrect answers, for a total of twenty (20) points. For measuring learners' explicit knowledge, the score of each sentence is one point. However, it is worth mentioning that if the student provided a correct answer in the justification test in a specific sentence and provided a wrong answer in the grammatical accuracy test in the same sentence, s/he would then have a zero in both the grammatical accuracy and the explicit knowledge test. The test was administered before and after the treatment took place as a pre and a post-test. The results of the test are indicated in the following tables.

Experimental Group			Control Group		
Score X_1	Frequency f	fX_1	Score X_2	Frequency f	fX_2
4	3	12	3	1	3
5	4	20	4	1	4
6	4	24	5	3	15
7	6	42	6	3	18
8	4	32	7	10	70
9	2	18	8	5	40
10	2	20	9	4	36
11	2	22	10	1	10
12	2	24	13	1	13
13	1	13	14	1	14
$N_1=30$		$\Sigma X_1 = 227$	$N_2=30$		$\Sigma X_2 = 223$
$\bar{X}_1 = \frac{\Sigma X_1}{N_1} = \frac{227}{30} = 7.57$			$\bar{X}_2 = \frac{\Sigma X_2}{N_2} = \frac{223}{30} = 7.43$		

Table 1: Grammatical Accuracy Pre-test Scores

Experimental Group			Control Group		
Score X_1	Frequency f	fX_1	Score X_2	Frequency f	fX_2
3	2	6	2	2	4
4	3	12	3	4	12
5	4	20	5	4	20
6	6	36	6	5	30
7	7	49	7	6	42
8	3	24	8	5	40
9	2	18	9	1	9
10	2	20	10	2	20
11	1	11	11	1	11
$N_1=30$		$\Sigma X_1 = 196$	$N_2=30$		$\Sigma X_2 = 188$
$\bar{X}_1 = \frac{\Sigma X_1}{N_1} = \frac{196}{30} = 6.53$			$\bar{X}_2 = \frac{\Sigma X_2}{N_2} = \frac{188}{30} = 6.27$		

Table 2: Grammatical Explicit Knowledge Pre-test Scores

As Table (1) and Table (2) reveal, the mean score of the control group in the pre-test in terms of grammatical accuracy was (7.43), whilst the mean score of the experimental group in the pre-test was (7.57). Therefore, the scores exhibit that there is no big difference between the means of the two groups in the grammatical accuracy pre-test. Concerning learners' explicit knowledge, the mean score of the control group in the pre-test was (6.27), whereas the mean score of the experimental group in the pre-test was (6.53). The difference between the means of the experimental and the control groups was marked only by (0,26) of difference before the treatment.

Experimental Group			Control Group		
Score X_1	Frequency f	fX_1	Score X_2	Frequency f	fX_2
6	1	6	6	1	6
7	2	14	7	2	14
8	2	16	8	2	16
10	3	30	9	4	36
11	4	44	10	5	50
12	4	48	11	6	66
13	4	52	12	5	60
14	6	84	14	3	42
15	3	45	15	2	30
16	1	16			
$N_1=30$		$\Sigma X_1 = 355$	$N_2=30$		$\Sigma X_2 = 320$
$\bar{X}_1 = \frac{\Sigma X_1}{N_1} = \frac{355}{30} = 11.83$			$\bar{X}_2 = \frac{\Sigma X_2}{N_2} = \frac{320}{30} = 10.67$		

Table 3: Grammatical Accuracy Post test Scores

Experimental Group			Control Group		
Score X_1	Frequency f	fX_1	Score X_2	Frequency f	fX_2
6	1	10	4	1	4
7	2	16	5	3	15
8	3	36	7	6	42
9	4	60	8	5	40
10	5	66	9	6	54
11	7	36	10	4	40
12	5	39	11	2	22
14	2	28	12	2	24
15	1	30	15	1	15
$N_1=30$		$\Sigma X_1 = 310$	$N_2=30$		$\Sigma X_2 = 256$
$\bar{X}_1 = \frac{\Sigma X_1}{N_1} = \frac{310}{30} = 10.33$			$\bar{X}_2 = \frac{\Sigma X_2}{N_2} = \frac{256}{30} = 8.53$		

Table 4: Grammatical Explicit Knowledge Post test Scores

It is clear from Table (3) and Table (4) that the mean score of the control group in the post-test in terms of grammatical accuracy was (10.67), while the mean score of the experimental group was (11.83). The results show that there is a remarkable difference between the means of the two groups after the implementation of the experiment with a difference of (1,16). In terms of learners' explicit knowledge, the mean score of the control group in the post-test was (8.53), whereas the mean score of the experimental group was (10.33). Hence, the difference between the means of the experimental and the control groups after the treatment is (1.80).

In order to find out the value of the students' t -test, we should check in the t -table and see the value corresponding to 58 degrees of freedom for 0.05 level of significance. By checking in the t -table we found that there is no row for 58 degrees of freedom. Therefore, we decided to use the value 60 to be the degree of freedom. Hence, for 60 degrees of freedom the value of t required for 0.05 level of significance is 2.000.

Groups	N	Mean (\bar{X})	df	SD	t_N
Experimental	30	7.57	58	2.49	0.21
Control	30	7.43	58	2.23	

Table 5: Grammatical Accuracy Pre-test Scores

As Table (5) clarifies, the t -value calculated (0.21) is less than the t values in the t -table: 2.000 for 0.05 level of significance, we therefore accept the null hypothesis that the difference between the mean scores of the control group and the experimental group were found to be nonsignificant at 0.05 level.

Groups	N	Mean (\bar{X})	df	SD	t_N
Experimental	30	6.53	58	2	0.12
Control	30	6.27	58	2.32	

Table 6: Grammatical Explicit Knowledge Pre-test Scores

The table above depicts that the difference between the two means were found to be nonsignificant at 0.05 level of significance. The null hypothesis was therefore accepted. Hence, the statistical results reveal that there is no significance of difference between the mean scores of the experimental group and the control group before the experiment.

Groups	N	Mean (\bar{X})	df	SD	t _N
Experimental	30	11.83	58	2.61	7.13
Control	30	10.67	58	2.29	

Table7: Grammatical Accuracy Post test Scores

As Table (7) displays, the t- value calculated (7.13) is more than the t values on the table of t values: 2.000 at 0.05 level of significance. Hence, the difference between the two means is significant at 0.05 level. The null hypothesis is therefore rejected.

Groups	N	Mean (\bar{X})	df	SD	t _N
Experimental	30	10.33	58	2.09	2.05
Control	30	8.53	58	4.24	

Table 8: Grammatical Explicit Knowledge Post test Scores

It is clear from Table (8) that the t- value (2.05) is superior to the t value in the table (2.000). The difference between the mean scores of the control group and the experimental group is significant at 0.05 level. The null hypothesis is therefore rejected. Henceforth, the statistical results above demonstrate that, there is a significance of difference between the mean scores of the experimental group and the control group after implementing the new method of teaching which is “input processing instruction”. Therefore, the research hypotheses have been confirmed.

Conclusion

In the light of the statistical analysis and the findings of the study, input processing instruction was found to be more effective than traditional output-based instruction in promoting learners’ explicit knowledge and their grammatical accuracy in the use of English past tenses. The impact of input processing instruction is perceived by the fact that learners are given much time to comprehend and process the input correctly which led to richer intake.

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