Table (4). The mean, standard deviation and other measures of central tendency of subjects' errors in the focused correction task.

Mean	4.200	Std err	0.788	Median	4.000
Mode	3.000	Std dev	3.052	Variance	9.314
Kurtosis	2.091	S P Kurt	1.121	Skewness	1.121
S F Skew	0.580	Range	12.000	Minimum	0.000
Maximum	12.000	Sum	63.000		

Table (5). ANOVA Summary Table.

Source	SS	D.F	MS	P
Type of task	775.60	2	387.80	35.53*
Error	305.73	28	10.92	

* $p < 0.001$

Figure (1). Plot of mean number of errors under the three conditions (the essay, the unfocused correction and the focused correction task).

APPENDIX

Tables (1, 2, 3, 4, 5), below, present the number of student's errors in the essay, unfocused correction and focused correction tasks.

Table (1). Number of students' errors in the essay unfocused correction and focused correction tasks.

Subject	Essay	Unfocused Correction			Focused Correction		
		Remaining	New	Total	From Remaining	From New	Total
1	8	4	3	7	1	2	3
2	27	8	5	13	1	3	4
3	9	3	1	4	0	0	0
4	18	7	4	11	0	4	4
5	23	7	1	8	3	2	5
6	17	11	1	12	12	0	12
7	9	1	5	6	3	0	3
8	12	6	0	6	0	2	2
9	12	4	5	9	2	1	3
10	7	1	4	5	0	0	0
11	15	8	0	8	6	2	8
12	11	2	2	4	2	1	3
13	9	2	4	6	6	1	7
14	11	5	0	5	3	1	4
15	25	8	2	10	3	2	5

Table (2). The mean standard deviation and other measures of central tendency of subjects' errors in the essay.

Mean	14.200	Std err	1.665	Median	12.000
Mode	9.000	Std dev	6.450	Variance	41.600
Kurtosis	-0.383	S P kurt	1.121	Skewness	0 .920
S F Skew	0.580	Range	20.000	Minimum	7.000
Maximum	27.000	Sum	213.000		

Table (3). The mean, standard deviation and other measures of central tendency of subjects' errors in the unfocused correction task.

Mean	7.600	Std err	0.742	Median	7.000
Mode	6.000	Std dev	2.874	Variance	8.257
Kurtosis	-0.799	S P Kurt	1.121	Skewness	0.548
S F Skew	0.580	Range	9.000	Minimum	4.000
Maximum	13.000	Sum	114.000		

- Sharwood-Smith, M., 1993. Input enhancement in instructed SLA: Theoretical bases. Studies in Second Language Acquisition **15**: 165-179.
- Sheen, R., 2005. Focus on forms as a means of improving accurate oral production. In A. Housen & M. Pierrard (eds.). Investigations in Language Acquisition (pp. 271-310). Berlin, Mouton de Gruyter.
- Shiffrin, K., 1988. Attention. In R. Atkinson, R. Hemstein, G. Lindzey and R. Luce (eds.), Stevens' handbook of experimental psychology. New York: Wiley and Sons.
- Skemp, R., 1978. Relational and Instrumental Understanding. Arithmetic Teacher **26**: 9-15.
- Snow, C., 1998. Bilingualism and Second Language Acquisition. In Gleason, J. & Ratner, N. (Eds.), Psycholinguistics. Harcourt Brace College Publishers.
- Solso, R., 1991. Cognitive Psychology. Allyn and Bacon.
- Spada, N. & Lightbown, P., 2008. Form-focused instruction: Isolated or integrated. TESOL Quarterly **42** (2): 181-207.
- Spada, N., 2006. Communicative language teaching: Current status and future prospects. In J. Cummins & C. Davis (eds.), The International Handbook of English Language Teaching. Norwell, MA: Springer.
- Spelke, E., Hirst, W. and Neisser, U., 1976. Skills of divided attention. Cognition **4**: 215-230.
- Spolsky, B., 1985. Conditions for Second Language Learning: Introduction to a General Theory. Oxford University Press.
- Stigler, J. and Hiebert, J., 2009. The teaching gap: Best ideas from the world's teachers for improving education in the classroom. Free Press.
- Strenberg, R., 1996. Cognitive Psychology. Harcourt Brace College Publishers.
- Stubbs, M., 2007. Quantitative data on multi-word sequences in English: the use of the world 'world'. In Hoey, M., Mahlberg, M., Stubbs, M. and Teubert, W. (eds.). Text, Discourse and Corpora, London, Continuum.
- Tomlin, R.S. & Villa, V., 1994. Attention in cognitive science and second language acquisition. Studies in Second Language Acquisition **16**: 183-203.
- VanPatten, B., 1990. Attending to form and content in the input: An experiment in consciousness. Studies in Second Language Acquisition **12**: 287-301.
- VanPatten, B., 2002. Processing instruction: An update. Language Learning **52**: 755-804.
- VanPatten, B., 2003. From input to output: A teacher's guide to second language acquisition. New York: McGraw Hill.
- VanPatten, B., Willaims, J. & Rott, S., 2004. From meaning connections in second language acquisition, Mahwah, NJ: Lawrence Erlbaum.
- Wong, W., 2004. Processing instruction in French: The roles of explicit information and structured input. In B. VanPatten (Ed.), From input to output: A teacher's guide to second language acquisition (pp. 187-205). New York: McGraw Hill.

Language Acquisition **26**, 399-432.
- Mangubhai, F., 2006. .What do we know about learning and teaching second languages: Implications for teaching. Asian EEL Journal **8** (3): 1-20.
- McLaughlin, B., 1978. The Monitor Model: Some methodological considerations. Language Learning **28** (2):309-332.
- McLaughlin, B., 1987. Theories of second language learning. London: Edward Arnold.
- McLaughlin, B.; Rossman, T. and McLeod, B., 1983. Second language learning: An information-processing perspective. Language Learning **33** (2): 135-58.
- Neisser, U. and Becklen, R., 1975. Selective looking: Attending to visually significant events. Cognitive Psychology **7**: 480-494.
- Pashler, H., 1994. Dual-task interference in simple tasks: Data and theory. Psychological Bulletin,**116** (2): 225-244.
- Perry, R. and Lewis, c., 2009. What is successful adaptation of lesson study in the US? Journal of Education Change, **10** (4): 365-391.
- Philp, J., 2003. Constraints on "noticing the gap": Non-native speakers' noticing of recasts in NS-NNS interaction. Studies in Second Language Acquisition **25**: 99-126.
- Posner, M.I., & Petersen, S.E., 1990. The attention system of the human brain. Annual Review of Neuroscience **13**: 2 5-42.
- Reynolds, d., 2010. Assessing Writing, Assessing Learning. An Arbor, MI: University of Michigan Press.
- Ritchie, W. & Bhatia, T., 1996. Handbook of Second Language Acquisition. Academic Press Inc.
- Rivers, W. and Temperely, 1978. A practical guide to the teaching of English as a second or foreign language. New York: Oxford University Press.
- Rosa E. & O'Neill, M.D., 1999. Explicitness, intake, and the issue of awareness: Another piece of the puzzle. Studies in Second Language Acquisition **21**: 511-556.
- Rosenberg, R., 2009. Tools for activating materials and tasks in the English language classrooms. English Teaching Forum **47** (4): 2-11.
- Rutherford, W. & M. Shanvood Smith, 1985. Conscious-raising and universal grammar. Applied Linguistics **6**: 274-282.
- Schmidt R.W. 1993a. Awareness and second language Acquisition. Annual Review of Applied Linguistics **13**: 206-226.
- Schmidt R.W., 1993b: Consciousness, learning, and interlangage pragmatics. In Kasper, G. and Blum Kulka, S. (Eds.). Interlangage Pragmatics. New York: Oxford University Press.
- Schmidt, R., 1992. Psychological mechanisms underlying second language proficiency. . Studies in Second Language Acquisition **14**: 357-385.
- Schmidt, R.W. & Frota S.N., 1986. Developing basic conversational ability in a second language: A case study of an adult learner of Portuguese. In R. Day (Ed.), Talking to Learn: Conversation in Second Language Acquisition (pp. 237-326). Rowley, MA: Newbury House.
- Schmidt, R.W., 1990. The role of consciousness in second language learning. Applied Linguistics **11**: 129-158.
- Schmidt, R.W., 1994a. Deconstructing consciousness in search of useful definitions for applied linguistics. AILA Review **11**: 11-26.
- Schmidt, R.W., 1994b. Implicit learning and the cognitive unconscious: Of artificial grammars and SLA. In N.C. Ellis (Ed.), Implicit and Explicit Learning of Languages (pp. 165-209). San Diego, CA: Academic Press.
- Schmidt, R.W., 1995a. Attention and awareness in foreign language learning. Honolulu. HI: Second Language Teaching and Curriculum Center, University of Hawaii.
- Schmidt, R.W., 1995b. Consciousness and Foreign Language learning: A tutorial on the role of attention and awareness in learning. In R. Schmidt (Ed.), Attention and Awareness in Foreign Language Learning (pp. 1-65). Honolulu: University of Hawaii Press.
- Schmidt, R.W., 2001. Attention. In P. Robinson (Ed.), Cognition and Second Language Instruction (pp. 3-32). New York: Cambridge University Press.
- Schneider, W., Dumais, S. and Shiffrin, R., 1984. Automatic and control processing and attention. In R., Parasuraman and D. Davies (Eds.), Varieties of attention. Orlando, FL: Academic Press.
- Seliger, H., 1979. On the nature and function of language rules in language teaching. TESOL Quarterly 359-369.
- Sharwood-Smith, M., 1986. Consciousness-raising and the second language learner. Applied Linguistics **2** (2): 168.

Supplement 1, 391-.
- Ellis, R., 2002. Does form-focused instruction affect the acquisition of implicit knowledge: A review of the research. Studies in Second Language Acquisition **24** (2): 223-236.
- Ellis, R., 2005. Principles of instructed language learning. System **33** (2): 209-224.
- Ellis, R., 2006. Current issues in the Teaching of Grammar: An SLA perspective. TESOL Quarterly **40** (1): 83-105.
- Enns, J., 1990. Relations between components of visual attention. In J. Enns (Ed.), The Development of Attention: Research and Theory. Amsterdam: Elsevier Science Publishers.
- Erlam, R., 2003. The effects of deductive and inductive instruction on the acquisition of direct object pronouns in French as a second language. The Modern Language Journal **87**: 242-260.
- Eskildsen, S., 2008. Constructing another language – usage-based linguistics in second language acquisition. Applied Linguistics, Oxford University Press, 1-23.
- Eslami, Z. and Fatahi, A., 2008. Teachers' sense of self-efficacy, English proficiency, and instructional strategies. A study of nonnative EFL teachers in Iran. TESL-EJ: **11** (4).
- Gelman, R., Meek, E., 1986. The Notion of Principle: The Case of Counting. In Hiebert, J. (Ed.), Conceptual and Procedural Knowledge. The Case or Mathematics. Hillsdale, NJ: Erlabaum.
- Haberlandt, K., 1997. Cognitive Psychology. Allyn and Bacon.
- Hiebert, J. & Lefevre, H., 1986. Conceptual and Procedural Knowledge: The Case of Mathematics. Hillsdale, NJ: Erlbaum.
- Hoey, M., 2007. Grammatical creativity: A corpus perspective. In Hoey, M., Mahlberg, M., Stubbs, M., and Teubert, W. (eds.). Text. Discourse and Corpora. London. Continuum.
- James, W., 1970/1890. The Principles of Psychology, vol. 1. New York: Holt.
- Johns, A., 1990. L_1 Composition Theories. Implications for developing Theories of L_2 Composition. In B. Kroll (Ed.), Second Language Writing. Cambridge England and New York: Cambridge University Press.
- Johnson, K., 1988. Mistake correction. English Language Teaching Journal **42**: 89-96.
- Jourdenais, R., Ota, M., Stauffer, S., Boyson, B. & Doughty, C., 1995. Does textual enhancement promote noticing? A think aloud protocol. In R. Schmidt (Ed.), Attention and Awareness in Foreign Language Learning (pp. 1-65). Honoloulu: University of Hawaii Press.
- Kahneman, D. and Treisman, A., 1984. Changing views of attention and automaticity. In R. Parasuraman and Davies, D. (Eds.), Varieties of attention. Orlando, FL: Academic Press
- Kahneman, D., 1973. Attention and Effort. Englewood Cliffs, NI: Prentice-Hall.
- Kimberly, A., 2009. Adult learners' perceptions of the incorporation of their L_1 in foreign language teaching and learning. Oxford University Press.
- Krashen, S., 1982. Composing Processes of Adult ESL Learners: A Case study. TESOL Quarterly **16**: 406-422.
- Krashen, S., 1984. The input hypothesis: issues and implications. California: Laredo Publishing Co. Inc.
- Krashen, S., 1991. The input hypothesis: an update. In Linguistics and Language Pedagogy: The State of the Art (pp. 409-431). Washington, D.C., Georgetown University Press, 409-431.
- Krashen, S., 1994. The input hypothesis and its rivals. In N. Ellis (Ed.), Implicit and Explicit Learning of Languages (pp. 45-77). New York, Academic Press.
- Kroll, B., 1990. Second Language Writing. Cambridge, England and New York: Cambridge University Press.
- Lanfer, B. and Girsai, N., 2008. From-focused instruction in second language vocabulary learning: A case for contrastive analysis and translation. Applied Linguistics **29** (4): 694-716.
- Larsen Freeman, D. and Cameron, L., 2007. Complex Systems and Applied Linguistics. Oxford: Oxford University Press.
- Leahey, T. and Harris, R., 1994. Learning and Cognition. Prentice-Hall, Inc.
- Leow, R.P., 1997. Attention, awareness, and foreign language behavior. Language Learning **47**: 467-505.
- Leow, R.P., 2000. A study of the role of awareness in foreign language behavior: Aware versus unaware learners. Studies in Second Language Acquisition **22**: 557-584.
- Leow, R.P., 2001. Do learners notice enhanced forms while interacting with the L_2? An online and offline study of the role of written input enhancement in L_2 reading. Hispania **84**: 496-509.
- Lowen, S., Li, S. and Thompson, A., 2009. Second language learners' beliefs about grammar instruction and correction. The Modern Language Journal **93**: 91-104.
- Lyster, R. and Mori, H., 2006. Interactional feedback and instructional counterbalance. Studies in Second Language Acquisition, **28**: 269-300.
- Lyster, R., 2004. Differential effects of prompts and recasts in form-focused instruction. Studies in Second

REFERENCES

- Achard, M., 2007. Usage-based semantics: Meaning and distribution in three French "breaking" verbs. Studies in Languages, University of Joensuu, vol. **41**.
- Alanen, R., 1995. Input enhancement and rule presentation in second language acquisition. In R. Schmidt (Ed.), Attention and Awareness in Foreign Language Learning (pp. 259-302). Honolulu: University of Hawaii Press.
- Anderson, J., 1983. The Architecture of Cognition. Cambridge, Mas: Harvard University Press.
- Bardovi-Harlig, K., 2006. On the role of formulas in the acquisition of L2 pragmatics. Pragmatics and Language Learning, vol. **11**, Honolulu, University of Hawaii.
- Basturkmen, H., Loewen, S. & Ellis, R., 2004. Teachers' stated beliefs about incidental focus on form and their classroom practices. Applied Linguistics **25**: 243-272.
- Bialystok, E., 1978. A theoretical model of second language learning. Language Learning **28**: 69-84.
- Bialystok, E., 1979. Explicit and implicit judgements of L_2 grammaticiality. Language Learning **29**: 81-104.
- Bialystok, E., 1981. The role of linguistic knowledge in second language use. Studies in Second Language Acquisition. **4**(1): 31-45.
- Bialystok, E., 1982. On the relationship between knowing and using linguistic forms. Applied Linguistics **3**: 181-206.
- Bialystok, E., 1984. Strategies in interlanguage learning and performance. In Davies, A. Griper, C. and Howatt, A. (eds.), Interlanguage. Edinburgh: Edinburgh University Press.
- Broadbent, D., 1958. Perception and Communication. London: Pergamon Press Ltd.
- Brown, R., 2009. Students' and teachers' perceptions of effective foreign language teaching: A comparison of ideals. The Modern Language Journal **93**: 46-60.
- Cave, K. and Wolfe, J., 1990. Modeling the role of parallel processing in visual search. Cognitive Psychology **22**(2): 225-227.
- Celce-Murcia, M., 2002. Why it makes sense to teach grammar through context and through discourse. In E. Hinkel & S. Fotos (Eds.). New Perspectives on Grammar Teaching in Second Language Classrooms (pp. 119-134). Mahwah, NJ: Lawrence Erlbaum.
- Cherry, E., 1953. Some experiments on the recognition of speech, with one and two ears. Journal of the Acoustical Society of America **25**: 975-979.
  Cohen, A., 2008. Strategy instruction for learners of Japanese: How do you do it and what's in it for them? In Japanese as a foreign language education: Multiple perspectives' (pp. 45-60). Tokyo: Kurosio Shuppan.
- Collins, A. Gentner, D., 1980. A framework for a cognitive theory of writing. In L. Gregg, E. Steinberg (Eds), Cognitive Processes in Writing. Hillsdals, NJ: Erlhaum.
- Conley, M., 2008. Cognitive strategy instruction for adolescents: What we know about the promise, what we don't about the potential. Harvard Education Review, **78** (1), 84-106.
- Cook, V., 1993. Linguistics and Second Language Acquisition. The Macmillan Press Ltd.
- Coombs, V., 1986. Syntax and Communicative strategies in Intermediate German Composition. Modern Language Journal **70**: 114-124.
- De Bot, K., Lowie, W. and Verspoor, M., 2007. A dynamic systems theory approach to second language acquisition. Bilingualism: Language and Cognition **10** (1): 7-21.
- De Keyser, 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**: 805-824.
- Dodd, D. and White, R., 1980. Cognition. Boston: Allyn and Bacon.
- Doughty, C. & Williams, J. (Eds.)., 1998. Focus on form in Classroom Second Language Acquisition. Cambridge: Cambridge University Press.
- Duncan, J. and Humphreys, G., 1989. Beyond the search surface: Visual search and attentional engagement. Journal of Experimental Psychology: Human Perception and Performance **18**(2): 578-588.
- Ellis, N.C., 2002. Reflections on frequency effects in language processing. Studies in Second Language Acquisition **24**: 297-339.
- Ellis, N.C., 2005. At the interface: Dynamic interactions of explicit and implicit language knowledge. Studies in Second Language Acquisition **27**: 305-352.
- Ellis, R., 1994. The Study of Second Language Acquisition. Oxford: Oxford University Press.
- Ellis, R., 2001. Form-focused instruction and second language learning. Language Learning, **51**:

procedures can reduce the mental effort required in solving a problem and by making possible the solution of complex tasks.

for generating a plan for correct performance. Nor do they guarantee correct execution of plan. Accordingly, in thinking about foreign language learners' performance as an object of study, the essence of the underlying knowledge that accounts for their performance must be examined. This examination of the learners underlying knowledge will in turn uncover the basis for the strategies they use in solving language problems. In this regard, Johnson (1988) maintains that when learning a language is viewed as learning skills, the process appears to be usefully broken into two or three phases. The first is the development of declarative knowledge; however, "declarative linguistic knowledge cannot be employed immediately but only through procedures activating relevant parts of declarative knowledge". In the second or associative phase, the skill is performed. In the third phase, the skill is continually practiced, and becomes automatic and faster. Accordingly, one can argue that deficiency in the subject's declarative knowledge may result in (1) failure to detect the erroneous item that must be corrected for the sentence to be correct; (2) failure to decide whether the sentence is correct or incorrect; and, in most cases, the sentence seems grammatically correct although it violates a certain invisible grammatical rule. In addition, because there was no link between declarative and procedural knowledge, many subjects (males and females) failed to correct the item they identified as erroneous, or provide accurate rationalizations for their performance. Therefore, examining the relationships between declarative and procedural knowledge is a worthwhile pursuit since students often fail to recognize or construct these relationships, and, sometimes are able to reach correct answers for problems they do not really understand. Therefore, it seems that the best way for effective classroom instruction and for improving our students' performance is to link conceptual with procedural. Such a link has many advantages for acquiring and using procedural knowledge. These advantages are: (A) Enhancing problem representations and simplifying procedural demands. (B) Monitoring procedure selection and execution. (C) Promoting transfer and reducing the number of procedures required. Moreover, linking conceptual knowledge and procedural knowledge has benefits for conceptual knowledge. Problems for which no routine procedures are available are solved initially by facts and concepts in an effortful and laborious way. As similar problems are solved repeatedly, conceptual knowledge is gradually transformed into set routines (condition-action pairs) for solving the problem. The condition-action pairs constitute the basic elements of the procedural system (Anderson, 1983; Hiebert & Lefevre, 1986). Thus knowledge that is initially conceptual can he converted to knowledge that is procedural. In addition, procedures can facilitate the application of conceptual knowledge because highly routinized

From a linguistic point of view, the results of this study demonstrate that deficiency in students' knowledge of grammar results in inaccurate composition writing and unsuccessful correction of errors. When asked to correct their errors, L_2 learners with deficiency in conscious knowledge of grammar seem to rely on their 'feelings' about the structures of the target language. However, since these 'feelings' are based on incorrect knowledge, L_2 learners tend to follow false assumptions and, in turn, their corrections of errors are unsuccessful. This conclusion is based on four pieces of evidence. First, many errors do not get corrected in the unfocused correction task. An examination of the performance of the subjects shows that none of the subjects was able to correct his/her errors in the unfocused correction task. Second, even when the error is identified (as in the focused correction task), students often fail to correct it. Third, many new errors are introduced, even when the subjects are paying attention. Finally, even when the subjects' errors are eliminated, it is often because students tend to write new sentences instead of correcting them.

This study, also, presents strong support for the claim that it is difficult, especially for beginners, to notice content and form at the same time. Also, this study provides further evidence for the facilitative role of increased attention in improving L_2 learners' performance. This implies that our students' failure to perform on language tasks may be due, sometimes, to cognitive deficiency; rather than linguistic one. And, in broad terms, language acquisition may not be fully understood without addressing the interaction between language and cognition. Therefore, further research is needed in this area, at least, to know how our students think and how to teach them to think strategically.

The results of this study show that the existence of knowledge is not sufficient to distinguish skilled or fluent performance from less skilled. Through practice and experience the learner must gain easy access to knowledge. Cognitive psychologists describe this difference in access as "automatic" or "not automatic" or "controlled". In other words, foreign language learners may appear to have the necessary knowledge to make correct responses; however, they are unable to display this knowledge in multi-dimensional tasks. In such tasks, learners are required to do more than one thing simultaneously. This argument is compatible with the principles of the attention theory.

Moreover, L_2 learners may appear to have the necessary knowledge to make correct responses; however, they are unable to transfer this knowledge while writing; listening to spoken English; reading written texts, and solving certain types of grammatical problems. So, knowledge of the correct principles do not guarantee correct performance. Principles specify characteristics that a correct performance must possess, but they do not provide recipes

tasks each requiring 75 units, performance should decline when shifting from performing the tasks individually to performing them simultaneously.

Subjects' performance in the two correction tasks reflects what "Selective Attention" phenomenon maintains. In these tasks, subjects relatively attend to a certain "stimuli" or aspects of stimuli, in preference to others. As Kahneman (1973) and Schneider et al. (1984) point out, this concept presupposes that there is some capacity limitation, or some bottleneck in the processing system; however, subjects have the ability to pass through this bottleneck and at the expense of other stimuli, by giving performance to certain stimuli. In the present study, subjects gave preference to "form" only at the expense of 'meaning'; and their major focus was on correcting the errors they previously made in essay writing. What is worth mentioning, here, is that some students were able to correct only some of their errors, but not all errors. And, the number of the corrected errors differed from one subject to another. In this regard, it can be argued that selectivity is the result of capacity limits of the subjects' information-processing system; and these limits are relative, and they depended on the type of activity itself. Students' performance in the correction tasks was better than that in the essay writing. And, more specifically, their performance in the "focused" correction task was better than their performance in the "unfocused" correction task. This observation can be explained in the light of the four varieties of "selective attention": (1) detection; (2) filtering; (3) search, and (4) resource attention.

First, as a result of 'selective attention', the subjects' ability to detect the errors increased. That is, their ability to notice, what is missing or incorrect in the sentence they previously wrote in the essay' has been improved. It must be emphasized, however, that this ability depends on the observer's sensitivity and his ability to respond. Second, the subjects; ability of 'filtering' has been improved; that is, they were able to select, analyze deeply, and concentrate on a particular item and exclude others. Third, as a result of noticing; deep analysis, and concentration, the subjects' search mechanisms have become automatic. In this regard, Cave and Wolfe's (1990) theory of "guided search" seems to be quite pertinent. To remind the reader, the guided-search model suggests that search involves two consecutive stages: (1) Parallel stage, in which the individual simultaneously activates a mental representation of all the potential targets, and (2) Serial stage, in which the individual sequentially evaluates each of the activated elements, according to the degree of activation, and then chooses the true targets from the activated elements. In focused attention tasks, the subjects attempt to place all available attention on just one stimulus, ignoring and / or excluding all other inputs (Lanfer & Girsai, 2008).

Concluding Remarks

evidence for Assumption 3; simultaneous attention to form and meaning is difficult. Furthermore, these studies favor focus on form. VanPatten (1990: 295) suggests that "if attention to form needs to be conscious at some point, then the input must be easily comprehended". Therefore the learner is able to allocate most of the attentional resources to the form on the spot, which will facilitate the processing and acquisition of that form (Stubbs, 2007; De Bot et al., 2007).

This study shows that although 'noticing' or 'conscious awareness' may have some positive effect on L_2 learners' performance; this effect, however, is constrained by two important factors: (1) learners' overall linguistic competence, and (2) the nature of the task; that is, whether it requires controlled or automatic processing of information. These two factors determine the amount of attention and degree of coordination on the part of L_2 learners. In this sense, this study does not exclusively support Schmidt's Noticing Hypothesis. Rather, it supports the claim that Noticing is necessary but not sufficient condition for convening input into intake. As a whole, this study supports the claim that L_2 learners have difficulty in attending to both form and content in the input. This is why conscious awareness or 'Noticing' is not sufficient condition for converting input into intake.

The subjects' performance in essay writing can be analyzed in the light of what "Divided attention" phenomenon maintains. To remind the reader, research on this phenomenon shows that, at certain times, the attentional system must coordinate a search for the simultaneous presence of two or more features. To put it simply, the attentional system must perform two or more discrete tasks at the same time. In such a case, "the speed and accuracy of simultaneous performance of two activities was quite poor" (Spleke, Hirst, and Neisser, 1976). Relatedly, it was, also hypothesized that the performance of multiple tasks was based on skill (due to practice), not on special cognitive mechanisms (Neisser & Becklen, 1975).

In "divided attention" tasks, the subjects are asked to spread attention over as many stimuli, as possible. In this regard, Shiffrin (1988:34) points out that, "as a general rule, subjects find it extremely difficult to divide attention. When there are more tasks to be carried out, more stimuli to be attended….. Performance is reduced". Many studies show that subjects' exhibit reduced performance when they try to accomplish simultaneously an increased number of tasks or to attend simultaneously to an increased number of stimuli. These are studies of divided attention deficits. Also, much research in attention assumes that there is a limited pool of attentional resources or capacity that can be distributed across tasks. For example, according to simple capacity models, if the subject has 100 units of capacity and is required to perform two

linguistic knowledge subjects' performance in the two correction tasks shows that this was the case when the rules were simple and straight forward; but it was not when the rules were complex. The first case is an example of what Skemp (1978) refereed to as "instrumental understanding"' and the second to "relational understanding". Finally, the results of the present study support the variability position which maintains that L_2 learners' performance varies according to the kind of language use that they engage in and the kind of knowledge that they acquire. That is, different kinds of knowledge are used in different types of language performance (Lyster & Mori, 2006).

In addition to the above analysis, another interpretation can be provided, which is based on cognitive psychology's perspective. That is, in addition to the deficiency in grammar knowledge as a reason for students' inaccurate composition writing, there is another possible reason that makes these students commit many morphosyntactic errors in writing such as the many constraints that writing in a foreign language imposes on foreign language learners and deficiency in students' abilities to transfer their knowledge of grammar to complex tasks such as writing. It can be argued that composing in English as a second language is a multidimensional activity which requires L_2 learners to do more than one thing simultaneously. This argument is compatible with the principles of the attention theory. Two important features within the phenomenon of attention have been identified: 1) an individual can attend to only one thing at a time or think only one thought at a time; 2) attention appears to be serial, and we find it very difficult to mix certain activities, that is, the focus of attention is only on one place at one time. Our ability to attend to several sources of information simultaneously is severely restricted. Consequently, a human who must process information that exceeds his channel capacity will inevitably make errors.

This study, then, supports the claim that second language learner has difficulty in attending to both form and content in the input. In other words, the attentional resources are limited and therefore it is difficult to understand the content of input when the attention is allocated to a certain form in the input. This can serve as evidence supporting such theoretical and pedagogical proposals as consciousness-raising (Rutherford & Sharvood-Smith, 1985) input enhancement (Sharwood-Smith, 1993; Alanen, 1995), and focus on form (Doughty & Williams, 1998). They all start with the common assumptions that (1) a focus on meaning is necessary with a sufficient amount of input; (2) a certain level of conscious attention to form is also necessary; (3) it is difficult, however, to pay attention to form while processing input for meaning; and (4) therefore some sort of encouragement to attend to form is helpful and facilitative for SLA. The present study, then, provides some

S.281. See..the sentence is not good...the meaning...I have to change it, all of it...it is not clear...so I changed the words. I didn't make attention for grammar...I want this sentence to mean anything.

To sum up, this study shows that the students' unsuccessful performance in the essays was due to their fragmentary knowledge of grammar. No matter how attentive L_2 learners are in performing language tasks, their performance in error correction tasks will be unsuccessful as long as their knowledge of grammar is fragmentary.

Analyzing the subjects' performance in essay writing and two correction tasks support the general hypothesis of the present study: the subjects' performance in the tasks displayed various degrees of competence in English. That is, the overall competence of L_2 learners is not systematic or unitary all the way. This implies that a good student in solving grammar problems is not necessarily good at writing. Also, successful performance, either in writing or grammar tasks does not necessarily guarantee successful and accurate verbal explanations on students' part. Moreover, the results of the present study support the hypotheses that students' performance in the correction tasks would be better than that in the writing task. And, their performance in the focused correction task would be better than that in the unfocused correction task. Relatedly, students' poor performance in writing, at least at the sentential level, is mainly due to a deficiency in their knowledge of grammar.

Accordingly, interpreting the subjects' behavior in the writing and the error correction tasks seems to support the non-interface position introduced earlier in the review of literature. Consequently, it would be a mistake to judge L_2 learners' knowledge on the basis of their performance, since both knowledge (competence) and performance are unrelated. One can argue, then, that successful performance does not necessarily mean coherent and complete linguistic knowledge, and vice versa. Relatedly, although linguistic knowledge appears, in some situations, to be a factor in determining the type of performance, it can not be concluded that it is a prerequisite to successful performance. Regarding error correction, the non-interface position predicts that linguistic knowledge can help L_2 learners to make changes in their linguistic output. The results of the present study, partially, support such a prediction. However, in some cases, L_2 learners may not be able to use their linguistic knowledge in making successful changes.

In addition, the results of the present study support the predictions of the interface position. That is, linguistic knowledge can be of some value to L_2 learners writing in a target language; however, it is not an absolute guarantee for successful performance in essay writing. Regarding error correction, the results of the present study support, partially, the claim that L_2 learners'

they were or use new structures which were also incorrect. He made twelve morphosyntactic errors in the same structures he had used incorrectly in the unfocused correction task. This clearly suggests that he lacks the necessary knowledge of grammar and, consequently, drawing his attention to his errors did not improve his performance. Likewise, Subject (1) was unable to see or correct the errors although they were underlined for her. That is, although her attention was drawn towards a specific grammar error, she could not correct it; instead, she tended to express the meaning of the sentence in a different form which sometimes happened to be correct. Moreover, because she appeared to be lacking accurate grammar knowledge, the new versions of her erroneous sentences contain yet more grammar errors.

Third, many new errors are introduced, even when the subjects are paying attention. Subject (1) for example, made three new errors in the unfocused correction task, and two new errors in the focused correction task. Subject (2) made five new errors in the unfocused correction task, and three new errors in the focused correction task. Subject (7) made six errors in the unfocused correction task; five of them were new. Five of the nine errors made by Subject (9) were new, and four of the five errors made by Subject (10) were also new in the unfocused correction task. Subject (13) made six errors in the unfocused correction task, four of which were new.

Finally, even when the subjects' errors are eliminated, it is often because students tend to write new sentences instead of correcting them. For example, Subject (1) tended to focus more on the semantic aspect of her sentences than on their grammatical accuracy. In other words, she did not use grammar knowledge to correct her erroneous sentences. Instead, she tended to use what one could call "stylistic variations" of those sentences, which happened to be correct. Likewise, Subject (2) managed to reduce the number of his errors from twenty-seven errors in the essay to thirteen in the unfocused correction task because his new sentences were correct. Subject (11) also managed to reduce the number of his errors from fifteen errors in the essay to eight in the unfocused correction task. She managed to correct some of her errors in the essay by coming up with new sentences that happened to be correct. An examination of Subject (12)'s performance also shows that the decrease in the number of errors in the unfocused and the focused correction tasks is due to the fact that she tended to change the whole sentence in such a way that avoided the structures she previously used in the essay. She made eleven errors in the essay, four in the unfocused correction task, and three in the focused correction task. Subject (8) clearly stated that she was relying on making new sentences rather than correcting the already written erroneous sentences:

difficult than the written task, suggesting once again that different modalities may impose different attentional demands (Eskildsen, 2008).

To conclude, the noticing hypothesis has served to generate important theoretical and empirical debates in SLA. It has also provided an opportunity to integrate useful concepts from cognitive psychology into SLA theory.

Results/Discussion

Tables (1, 2, 3, 4, 5) present the number of students' errors in the essay, unfocused correction and focused correction tasks. (See Appendix). The statistical analysis indicates that the condition (essay, unfocused correction, focused correction) affected the number of errors made by students. Students made the most errors in the essay, the fewest errors in the focused correction task. The mean number of errors in the essay is 14.2 with a standard deviation of 6.5. The mean number of errors in the unfocused correction task is 7.6 with a standard deviation of 2.9, while the mean number of errors in the focused correction task is 4.2 with a standard deviation of 3.1 (See Figure 1).

The results of this study demonstrate that students' errors in the essay were not just due to carelessness or forgetfulness as some of the subjects claimed during the interview. An examination of the performance of the subjects suggests that deficiency in their knowledge of grammar results in inaccurate composition writing and unsuccessful correction of errors. When asked to correct their errors, L_2 learners with deficiency in conscious knowledge of grammar seem to rely on their "feelings" about the structures of the target language. However, since these "feelings" are based on incorrect knowledge, L_2 learners tend to follow false assumptions and, in turn, their corrections of errors are unsuccessful. In addition, they appear to search for various ways to express the meanings of their erroneous sentences in new forms, but many of these contain new errors. Thus, it can be concluded that relying on "feelings and experience" (to use Subject (4)'s words), without having adequate conceptual knowledge of grammar rules leads to unsuccessful performance, even if students' attention is drawn to their errors. This conclusion is based on four pieces of evidence. First, many errors do not get corrected in the unfocused correction task. An examination of the performance of the subjects shows that none of the subjects was able to correct all his/her errors in the unfocused correction task. Secondly, even when the error is identified (as in the focused correction task), students often fail to correct it. Subject (6) made twelve errors in the unfocused correction task, eleven of which were previously made in the essay and never corrected, and only one of which was new. Although his attention was drawn to his errors, he was unable to correct them successfully. All he did was either leave the incorrect structures as

According to Schmidt (1994: 179) noticing refers to the "registration [detection) of the occurrence of a stimulus event in conscious awareness and subsequent storage in long term memory...". Schmidt is careful to distinguish 'noticing' from 'understanding', which he defines as "recognition of a general principle, rule or pattern" (1995: 29). Understanding represents a deeper level of awareness than noticing which is limited to "elements of the surface structure of utterances in the input" rather than underlying rules (Schmidt, 2001: 5).

Stronger evidence for the facilitative role of noticing comes from a study by Jourdenais, et al. (1995). Results showed that the Enhanced group used the target structure more often than the Unenhanced group on both the think-aloud protocols and the written production task, suggesting that input enhancement made the target forms more noticeable. Moreover, subsequent production by the Enhanced group was more target-like than the Unenhanced group, suggesting that noticing facilitated acquisition. A more innovative experimental design by Leow (1997, 2000, 2001) provides further evidence for the facilitative role of awareness in SLA. Leow (1997) used a crossword puzzle task as input that was designed to initially induce learner error. Eventual clues in the puzzle provided learners with the correct form, thereby increasing their chances of noticing the mismatch. Similar results were found in a subsequent study (Leow 2000). Results showed that participants who displayed evidence of awareness performed better on the post-exposure tasks than those classified as unaware. In a similar experimental design, Rosa and O'Neill (1999) investigated the role of awareness in acquiring syntactic structures. Among other things, the study found that awareness seemed to increase learners' ability to recognize the syntactic structures on the post-test. There was also a strong correlation between awareness and intake (Perry & Lewis, 2009; Larsen Freeman & Cameron, 2007).

Leow's explanation seems to support VanPatten's (1990) findings that attention to both form and meaning is difficult. However, the modality of the input in this case (written) differed front that in VanPatten's study (aural). The question, then, would be "could modality differentially affect attention to meaning and form?". Wong (2004) tried to address this question with a partial replication of VanPatten (1990). His variations included the addition of a written mode of input and using English (instead of Spanish). Findings for the aural input mirrored those of VanPatten, since there was a significant decrease in performance when participants had to attend to both content and form. However, no significant difference was found when the input was written (which incidentally took less time to read than the aural input). Moreover, when processing both form and meaning, the listening task proved more

is probably the most important network in attention; it refers to the cognitive registration of a stimulus. Once a stimulus is detected, it becomes available for further processing. Although detection does not necessarily imply awareness, Schmidt (2001) suggests using the term registration to refer to stimuli that are detected without awareness.

One of the most influential attentional studies in SLA was conducted by VanPatten (1990), who investigated the notion of attention as a limited resource. More specifically, the study examined whether learners were able to consciously attend to both form and meaning when processing input. Results showed that the 'content only and lexical groups' significantly outperformed 'the form and morphology groups'. This led VanPatten to conclude that it was difficult, especially for beginners, to notice content and form at the same time. Moreover, he postulated that learners would notice meaning before form, since their primary objective is to understand the prepositional content of utterances. VanPatten's findings have led SLA researchers to try and find ways to help learners focus on both form and meaning. One such way is input enhancement, which refers to the manipulation of certain aspects of the input (e.g., form) to make them more salient and thereby more noticeable to learners (Sharwood Smith, 1993).

Tomlin and Villa (1994) suggest that there are four conceptions of attention in SLA. One is that of attention as a limited capacity system. The idea being that the brain may be presented (through the sensory system) with an overwhelming number of stimuli at any given time, and it seems impossible to process them all. The limitations of attention refer not only to the amount (or duration) of attention that may be given to a single stimulus but also to the number of stimuli that may be attended to simultaneously. This leads to a second conception of attention, namely that it constitutes a process of selection. The overwhelming amounts of incoming stimuli force the attentional system to be selective. The third conception of attention, involves controlled rather than automatic processing of information. The underlying assumption here is that some tasks require more processing effort, and hence a higher degree of attention, than others. A person may therefore perform two tasks at the same time, especially if one requires automatic processing (low attention). By the same token, it is more difficult to perform two tasks if both require controlled processing (high attention). The fact that controlled processing of two simultaneous tasks is sometimes possible led researchers to develop a fourth conception of attention, which is that it must involve a process of coordination among competing stimuli and responses. In this process, attention must be established, maintained, discontinued, and redirected in order to perform different actions.

This thinking enables you to bypass the intermediate-translation stage and allows the process of speaking to become automatic".

From Cognitive Psychology to (SLA)

Over the past two decades, researchers in the field of second language acquisition (SLA) have become increasingly interested in concepts traditionally associated with cognitive psychology. N. Ellis (2002: 299) points out, "We are now at a stage at which there are important connections between SLA theory and the neuroscience of learning and memory". The concept of attention has become especially important because of its crucial role in so many aspects of SLA theory such as input, processing, development, variation, and instruction.

In this regard, R. Ellis (1994: 10) points out that "Schmidt is one of the few linguists who have adopted the conceptual and experimental rigours of experimental psychology in answering questions concerning the role of consciousness in L_2 acquisition". Much of Schmidt's work (1990; 1992; 1993 a, b; 1994 a, b; 1995 a, b; 2001) ties findings from cognitive psychology into SLA theory. Reviewing the psychological literature on consciousness has led Schmidt to propose the Noticing Hypothesis, which states that "noticing is the necessary and sufficient condition for converting input into intake" (1990: 129). Since then, a considerable amount of research has addressed the issue of noticing in SLA.

The noticing hypothesis seems to have been motivated by a seminal study by Schmidt and Frota (1986), which documents the role of noticing for a beginner learning Portuguese in Portugal over a period of 22 weeks. Their findings question the assumption that language acquisition is a purely subconscious process (Krashen, 1982), since the learner clearly noticed some of the grammatical structures he seemed to have acquired. Schmidt and Frota, however, admitted that they were unable to trace much of what had been acquired to what had been noticed. Self reports are inherently subjective. Moreover, memory effects may play a role depending on the amount of time that passes before the diary entry is made. Nevertheless, first person accounts seem to be the most valid method for assessing what is noticed.

Posner and Petersen (1990) describe attention in terms of three networks: alertness, orientation, and detection. Alertness refers to a general state of readiness to receive input. The higher the level of alertness, the faster the speed of selecting information for processing will be. Orienting attention to a stimulus facilitates the processing of that stimulus. Orientation differs from alertness in that a learner might for example be ready to learn (alertness) but not know whether to focus on form or meaning (orientation). Detection

refractory period (PRP) effect.

In divided attention tasks, the subjects are asked to spread attention over as many stimuli, or potential stimuli, or sources of stimuli, as possible. In focused attention tasks, the subject attempts to place all available attention on just one stimulus, type of stimuli, or source of stimuli, ignoring and/or excluding all other inputs. In this regard, Shiffrin (1988: 34) points out that, "As a general rule, subject finds it extremely difficult to divide attention. When there are more tasks to be carried out, more stimuli to be attended, more potential stimuli to be monitored, or more attributes to be attended, performance is reduced".

In conclusion, studies of attention fall into two broad classes, which are concerned respectively with divided and with focused or selective attention. Divided attention tasks used to establish limits to performance and to measure the extent to which different tasks can be combined without loss. They are also used to analyze the causes of dual-tasks decrements and to locate the stages of processing that limit performance. Tasks of selective or focused attention are used to study resistance to distraction, and to establish the locus beyond which relevant and irrelevant stimuli are treated differently. As Dodd and white (1980: 14) argue "Attention... involves a selection of information [which] is often related to central processor control, depending on specific goals and plans, certain information will be selected and other information rejected". According to Leahey and Harris (1994: 109), how we select activities to attend to and how we determine how many stimuli we can process simultaneously depends on a variety of factors: 1) the number of sources is important; that is, it is harder to pay attention to five people talking than it is to one; 2) the similarity of sources is important; that is, "some people find that they can study well with instrumental music in the background, but not with vocal music. The latter, being linguistic, is similar enough to reading to interfere, while purely instrumental music in not", and 3) the complexity of sources or tasks is another important variable; that is, it is much easier to pay attention to several simple stimuli or simultaneously perform more than one simple task than it is if the stimuli or tasks are complex. Haberlandt (1997: 64) points out that, "Attention plays a role in perception and performance, even though we may be unaware of it. We become aware of its role, however, when a stimulus is difficult to perceive, when we execute two tasks simultaneously, and when we face an overload of information". Sternberg (1996: 743) provides the following example: "driving a car is initially a controlled process. Once we master driving, however, it becomes automatic under normal driving conditions (on familiar roads, in fair weather, with little or no traffic). Similarly, when first learn to speak a foreign language, you need to translate word-for-word from your native tongue; eventually, however, you begin to think in the second language.

particular features actively looking for something when you are not sure where it will appear" (Sternberg 1996: 86). According to Duncan and Humphreys' (1989) similarity theory, the difficulty of search tasks depends on the degree of similarity between the targets and the distractors, as well as on the degree of disparity among the distractors, but not on the number of features to be integrated.

Moreover, Cave and Wolfe (1990) have proposed another theory called "guided search". According to these researchers, the guided-search model suggests that all search involve two consecutive stages: 1) Parallel stage, in which the individual simultaneously activates a mental representation of all the potential targets, based on their possession of each of the features of the target, and 2) Serial stage, in which the individual sequentially evaluates each of the activated elements, according to the degree of activation, and then choose the true targets from the activated elements. According to their model, the activation process of the parallel initial stage helps to guide the evaluation and selection process of the serial second stage of the search.

Divided Attention

Early work in this area was done by Neisser and Becklen (1975). It was noticed that the attentional system must coordinate a search for the simultaneous presence of two or more features. In this regard, Neisser and Becklen hypothesized that improvement in performance would have occurred eventually as a result of practice. They also hypothesized that the performance of multiple tasks was based on skill (due to practice), not on special cognitive mechanisms. Spelke, Hirst, and Neisser (1976) used a dual-task paradigm to study divided attention during the simultaneous performance of two activities. They found that the speed and accuracy of simultaneous performance of two controlled processes was quite poor. The two tasks that were examined were 1) reading for detailed comprehension, and 2) writing down dictated words. Spelke and her colleagues found out that, given enough practice, the subjects' performance improved on both tasks. That is, they showed improvements in their speed of reading and accuracy of reading comprehension. Subjects' performance on both tasks reached the same levels that the subjects had previously shown for each task alone. They suggested that these findings showed that controlled tasks can be automatized so that they consume fewer attentional resources. Pashler (1994) argued that when people try to perform two overlapping speeded tasks, the responses for one or both tasks are almost always slower. When a second task begins soon after the first task has started, speed of performance usually suffers. The slowing due to simultaneous engagement in speeded tasks is termed the psychological

concept presupposes that there is some bottleneck, or capacity limitation, in the processing system and that subjects have the ability to give preference to certain stimuli so that they pass through this bottleneck easily and at the expense of other stimuli. In his discussion of 'selective attention', Sternberg (1996: 82) provides the following example: "suppose you are at a dinner party. It's just your luck to be seated next to someone who sells 110 brands of vacuum cleaners and describes to you in excruciating detail the relative merits of each brand. As you are talking to this blatherer, who happens to be on your right, you become aware of the conversation of the two diners sitting on your left. Their exchange is much more interesting, especially because it contains juicy information you had not known about one of your acquaintances. You find yourself trying to keep up the semblance of a conversation with the blabbermouth on your right while tuning in to the dialogue on your left. Cherry (1953) referred to this phenomenon as the cocktail party problem, based on his observation that cocktail parties are often settings in which selective attention is salient.

Selectivity is the result of capacity limits of the human information processing system. These limits are relative; they depended on the type of activity. Well-practiced tasks are automatic and require mental effort and engage attentive processes. In this connection, Haberlandt (1997) argues that theories differ in terms of the respective roles attributed to attentive and to automatic processes. According to so-called bottleneck theories of attention, the two types of processes are serial: automatic processes are followed by attentive processes. According to other theories, "attentive and automatic processes occur in parallel throughout processing" (Shiffrin, 1988: 66). In this regard, four varieties of selective attention are identified: 1) detection; 2) filtering; 3) search, and 4) resource allocation (Enns, 1990). First, detection involves noticing the absence or presence of a stimulus or the difference between a pair of stimuli. Detection depends on the observer's sensitivity as well as the observer's response bias to be lenient or strict (Haberlandt, 1997: 64). Detection involves the judgment as to whether a stimulus is present. Second, filtering involves the selection of one of several messages on the basis of its attributes. According to filter theories, analysis of information prior to the filter is automatic but superficial. Subsequent analyses are deeper but they require more cognitive resources and more time (Haberlandt, 1997: 64). Filtering involves concentration on one of reveal inputs while excluding others. Third, search refers to the identification of a target among a set of distractors. When targets and distractors differ consistently, the search is automatic. When targets and distractors are mixed, however, the view's full attention is required. To put it differently, search refers to "a scan of the environment for

task, and as a result, performance on the less attended task will deteriorate. As Haberlandt (1997: 65) maintained, "attention makes you more alert and focuses your mind... Thus, attention 1) highlights a part of one's environment and blocks out other pans; 2) primes a person for a speedy reaction, and 3) helps the learner to retain information". In this regard, Sternberg (1996: 69) points out that "Attention is the phenomenon by which we actively process a limited amount of information from the enormous amount of information available through our senses, our stored memories, and our other cognitive processes".

Generally speaking, the theories that have attempted to explain attention by using ideas from information processing theory may fall into two broad categories: "bottleneck" theories and capacity model theories. It is worth noting that both bottleneck and capacity theories are based on the idea that humans have limited information processing capacity. That is, we are never able to deal with of all the inputs that continuously flood into our processing systems from our senses and memory, and even if we were, we are limited in the number of motor responses we can make. One can describe bottleneck theories as a strong version of this limited capacity idea, in that only one message at a time can enter consciousness, since at some point processing is reduced to a single channel. Capacity models, on the other hand, are a weaker version; in that information can be processed via many channels but that there is a fixed capacity limit to be distributed amongst the channels. The issue all of these theories had to resolve was the location of selection to the stimuli. More specifically, the models had to explain the process by which we are able to make sense of our environment, given that we are constantly bombarded with information.

Functions of the Attentional System

Our attentional system performs many functions other than merely turning out familiar stimuli and turning in novel ones. The three main functions of attention are l) selective attention in which we choose to attend to some stimuli and to ignore other, 2) search, in which we actively seek out particular stimuli, and 3) divided attention, in which we prudently allocate our available attentional resources to coordinate our performance of more than one task at a time.

Selective Attention

The process of "selective attention" is one in which "the organism selectively attends to some stimuli, or aspects of stimuli, in preference to others" (Kahneman, 1973: 3). As Schneider et. al. (1984: 3) argue, this

and acquired by the human mind in ways that are different from any other knowledge. The next section spells out some alternatives to the linguistics-based approach to L_2 research. Language can be accommodated in a broader framework of how people store and acquire knowledge in general rather than being seen as something unique and peculiar of its own.

From Applied Linguistics to Cognitive Psychology

Attention: What is it?

Attention is one of those psychological topics that everyone has intuitions about, but few know exactly how to define precisely. It was long ignored in the behaviorist era as being too mentalistic and unobservable to be worthy of study in scientific psychology. In the 1950s and 1960s, however, there arose a resurgence of interest in studying attention. The revival of interest in attention in the 1950s was motivated at least in part by the discovery of surprising limitations in the handling of simultaneous messages by air-traffic controllers and by subjects in dichotic listening tasks (Kahneman and Treisman, 1984).

Many of the contemporary ideas of attention are based on the premise that there are available to the human observer a myriad of cues that surround us at any given moment. Our neurological capacity is too limited to sense all of the millions of external stimuli, but, even were these stimuli detected, the brain would be unable to process all of them (Solso, 1991). Generally, attention has been conceptualized in two ways. First, it has often been considered as a state of concentrating on something. In this tradition, William James (1970/1890) called attention the "focalization of consciousness". As a state, it has some similarities to other psychological states, such as emotions like anxiety or happiness, which are also not directly observable, but rather must be inferred from behavior. An alternative way to conceptualize attention is as processing capacity, which can be allocated in a variety of ways to different stimuli and activities. According to James (1970/1890: 403) "attention is the taking possession of the mind, in clear and vivid form, of one out of what seem several simultaneously possible objects or trains of thoughts.... It implies withdrawal from some things in order to deal effectively with others".

The modern era of attention was introduced in 1958 by Donald Broadbent, a British psychologist at Oxford University. The essential notion of Broadbent's theory was that the world is made up of many more sensations than can be handled by the perceptual/cognitive capabilities of the human observer. Therefore, in order to cope with the flood of available information, humans selectively attend to only some of the cues and 'tune out' much of the rest. This means that resource allocation is necessary when one has to execute two tasks jointly. Resources devoted to one task are not available for the other

stating that different tasks require different types of knowledge, and different kinds of learners can be identified according to which kind of knowledge they possess. According to McLaughlin et al. (1983), explicit abstract knowledge of linguistic structure can help adult learners process language by creating a shortcut in the learning process. It also saves them the trouble of creating false hypotheses (Rosenberg, 2009; Loewen & Thompson, 2009).

In conclusion, these three positions have implications for interpreting the behavior of the subjects in the writing and error correction tasks. The non-interface position, for example, predicts that L_2 learners' linguistic knowledge is entirely separate and unrelated to their actual performance in the writing tasks. According to this position, one can argue that successful performance does not necessarily mean coherent and complete linguistic knowledge and vice versa. Consequently, it would be a mistake to judge L_2 learners' knowledge on the basis of their actual performance, since both knowledge and performance are unrelated. Although linguistic knowledge appears, in some situations, to be a factor in determining the type of performance, it cannot be concluded that it is a prerequisite to successful performance (Stigler & Hiebert, 2009; Reynolds, 2010).

Regarding error correction, the non-interface position predicts that linguistic knowledge can help L_2 learners to make changes in their linguistic output provided that there is sufficient time for the learners to focus on form and that they know the rules. In some cases, however, L_2 learners may not be able to use their linguistic competence even if those conditions are met (Krashen 1991, 1994). On the other hand, the interface position, in its weak form, would predict that linguistic knowledge can be of some value to L_2 learners writing in a target language. It is not, however, an absolute guarantee for successful performance. In its strong form, the interface position would predict that L_2 learners' linguistic knowledge interacts with their communicative experiences and, as a result, both competence and performance can be mutually enhanced. That is, students' linguistic competence can be improved during the composing process and their written production will become better. Regarding error correction, the interface position would predict that L_2 learners' linguistic knowledge will help them to correct their errors. In addition, their linguistic knowledge will be further developed as a result of engaging in error correction activity. Finally, the variability position maintains that L_2 learners' performance varies according to the kind of language use that they engage in and the kind of knowledge that they acquire. That is, different kinds of knowledge are used in different types of language performance (Eslami & Fatahi, 2008; Kimberly, 2009).

Much of the previous discussion has assumed that language is represented

order to produce responses. (3) Other knowledge which includes knowledge of the native language and of other languages, and knowledge of the world. Bialystok's model constitutes a theoretical base for Sharwood-Smith's (1981) model which has been developed as a full interface model to account for the role of formal instruction in SLA. According to this model, the learner can produce L_2 output by using implicit knowledge, explicit knowledge, or both explicit and implicit knowledge. In another study, Bialystok (1979) applied her model to judgments of grammaticality either on the basis of knowledge of rules or on the basis of intuition. Thus, the task of judging grammaticality is one that does not necessarily bias towards implicit or explicit knowledge (Hoey, 2007).

The Variability Position

The variability position emphasized the interrelationship between use and acquisition. That is, the kind of language use that the learner engages in determines the kind of knowledge that he acquires. One of the attempts to account for the learner's variable control of the L_2 system had been made by McLaughlin (1978). In his attack on Krashen's distinction between learning and acquisition, McLaughlin (1978: 318) suggests another distinction which is "more empirically based and ties into a general theory of human information processing". This is the distinction between "controlled" and "automatic" processing. According to McLaughlin, the advantage of this distinction is that it enables one to avoid disputes about "conscious" or "subconscious" experience, since the controlled-automatic distinction is based on behavioral acts, not on inner states of consciousness . Controlled processing requires active attention; so that only a limited number of features can be controlled at a time without interference occurring. Automatic processing takes place without active control or attention. According to McLaughlin, automatic processes are learned following the earlier use of controlled processes. For McLaughlin, therefore, SLA entails going from the controlled to the automatic mode of operation, and it is not necessary to presuppose two unconnected knowledge types such as the "acquired/learnt" distinction.

Bialystok (1984) transforms her earlier distinction between "Explicit" and "Implicit" into the distinction between analyzed and unanalyzed knowledge, and adds to this the distinction between automatic and non-automatic to give a four-way matrix of kinds of second language performance. The analyzed factor, according to Bialystok (1984), refers to the extent to which the learner is able to represent the structure of knowledge along with its content. The control factor refers to the relative ease of access that the learner has to different items of linguistic knowledge; it relates to automaticity. Bialystok concludes by

it is widespread and may seem to some people to be intuitively obvious….. Language acquisition happens in one way, when the acquirer understands input containing a structure that the acquirer is 'due' to acquire, a structure at his or her 'i+1'.

In his discussion of the 'non-interface'-position, R. Ellis (1984) notices that it runs counter to the traditional assumption of language teaching and also to the intuitions of countless language teachers. That is, teachers distinguish skill-getting and skill-using (Rivers & Temperly, 1978) on the grounds that the former should come before the latter, particularly with adults. In fact, although Krashen does acknowledge that sometimes a rule can be learned before it is acquired, he argues that this does not establish that learning is a prerequisite of acquisition. In Krashen's view, having learned a rule does not preclude having to acquire it later on. According to Krashen's Monitor hypothesis, learning has only one function, and that is as a monitor or editor and that, learning comes into play only to make changes in the form of our utterances, after it has been produced by the acquired system. Krashen suggests that second language performers can use conscious rules only when four conditions are met. Those conditions are necessary and not sufficient, that is, a performer may not fully utilize his conscious grammar even when all four conditions are met. These conditions are (1) sufficient time; (2) focus on form; (3) knowing the rule, and (4) the rule needs to be simple (Spada, 2006; Spada & Lightbown, 2008).

The Interface Position

The interface position has been argued from a weak and strong position. The weak interface position was proposed by Seliger (1979). Seliger suggests that different learners end up with different representations of the rules they have been taught and, in turn, these rules do not describe the internal knowledge that is called upon in natural communication. These rules, according to Seliger, act as "acquisition facilitators" by focusing the learners' attention on "critical attributes of the real language concept that must be induced. That is, conscious or pedagogical rules make the inductive hypothesis testing process more efficient" (p.368). Seliger, however, does not propose that "learned" knowledge or pedagogical rules are converted into internalized knowledge. The strong interface position is advocated by Bialystok (1978, 1979), and Sharwood-Smith (1981), among others.

Bialystok (1978) postulates three hypothetical constructs. (1) Explicit Language Knowledge, which contains "all the conscious facts the learner has about the language and the criterion for admission to this category is the ability to articulate these facts" (p.72). (2) Implicit Language Knowledge which refers to the intuitive information upon which the language learner operates in

to see various degrees of performance. Specifically, it was hypothesized that the overall competence of second language learners is not systematic all the way (Bialystok, 1981, 1982). This implies that (1) a good student in solving grammar problems is not necessarily good at writing, (2) successful performance, either in writing or grammar tasks does not necessarily guarantee successful, accurate verbal explanations on students' part (Seliger, 1979), (3) poor performance in writing, at least at the sentential level, is mainly due to a deficiency in students' knowledge of grammar. Finally, it was hypothesized that students' performance in the correction tasks will be better than that in the writing task. Relatedly, their performance in the focused correction task will be better than that in the unfocused correction task.

Review of Literature

Linguistic Aspects of Writing

Explicit Knowledge of Grammar and L_2 Learners Written Production

Recent research in second language acquisition has been characterized by continuous efforts to construct theoretical models of learning and in so doing, to explain the function of explicit, formally acquired knowledge of the target language (Basturkmen, Loewen &Ellis, R.. 2004; Celce-Murcia, 2002; Dekeyser et al., 2002; Ellis, N., 2005; Ellis, R., 2001, 2002,2005, 2006; Erlam, 2003; Lyster, 2004; Philp, 2003; Van Patten, 2002, 2003; Van Patten et al., 2004; Wong, 2004; Mangubhai, 2006). In reviewing the literature on this issue, I will focus on the following three positions about the function of this knowledge: (1) the non-interface position, (2) the interface position, and (3) the variability position. Each of these positions is relevant to the issue of the relationship between conscious knowledge of grammar and the accuracy of foreign students' written production. It should be emphasized, however, that none of them would qualify as a theory in the strict sense of the word. Instead, each emphasizes certain concepts that are pertinent to the present study.

The Non-Interface Position

The non-interface position has been advanced most strongly by Krashen (1982). Krashen identifies two types of linguistic knowledge in Second Language Acquisition (SLA), acquisition and learning. He argues that acquired knowledge and learned knowledge are entirely separate and unrelated. In particular, he disputes the view that learned knowledge is converted into acquired knowledge. Krashen (1982: 83-4) puts it this way: "A very important point that needs to be stated is that learning does not 'turn into' acquisition. The idea that we first learn a new rule, and eventually, through practice, acquire

underlined). He/she was asked to correct these errors. Fourth, students were interviewed individually. Every student was asked questions regarding his/her performance in the previous three tasks, aimed at uncovering the reasons for the changes from one task to another. The students were asked to explain why changes were made, and were probed to clarify as often as necessary. No feedback on the correctness of the changes was given before the end of the interview. The explanations were tape-recorded.

The data analysis had a quantitative and a qualitative, interpretative part. The quantitative part consisted of a statistical comparison of the number of errors in the composition, unfocused correction and focused correction tasks (by means of one-way ANOVA). The qualitative part was an analysis of each student's conception of the grammatical rules that were violated, in order to explain any discrepancies between their performances on the tasks. This analysis was inductive, based entirely on the individual's explanations, and aimed at accounting for the differences between the tasks.

Rationale/Questions

Writing is viewed here as a complex process. Hence, the problem that teachers of English as a second language always encounter is that although some adult learners are successful at learning grammar rules which they have been taught and then using those rules productively and communicatively, most learners can not utilize their intellectual understanding of the grammar of the language in communicative situations. Therefore, this study was undertaken to answer the following questions: (1) Are students' errors in grammatical structures, as they will appear in their written output, due to deficiency in their conscious grammar rules, or to deficiency in their abilities to transfer this knowledge (if it exists) to other language tasks such as writing compositions in English? (2) Can conscious rules of grammar guide students' performance in monitoring (self-correcting) their written output once their attention is drawn to an error? (3) What does the change in students' performance tell us about the depth of their knowledge and strategies in solving or correcting grammar errors? (4) What factors affect second language learners' performance in writing and error correction tasks; apart from their level of morphosynctactic competence?

Hypotheses

The general hypothesis of this study was that the subjects' overall performance in the tasks used in this study will display various degrees of competence in English. That is, by comparing the performance of the subjects in each task, and that of each subject against each other, we expect

theory".

On the other hand, the subject of "attention" and its relation to learning is one of the most studied and talked about topics in our society today. Given the level of competition in our society today, the ability to maximize output from the mind and body can be an immensely valuable tool. Also, there has been considerable interest in recent years in Second Language Acquisition-(SLA) on the role of attention in SLA. For students who learn English as a second or foreign language they "must learn to create written products that demonstrate mastery over contextually appropriate formats for the rhetorical presentation of ideas as well as mastery in all areas of language", (Kroll, 1990: 140). Collins and Genter (1980: 67) make the following observation: "Much of the difficulty of writing stems from the large number of constraints that must be satisfied at the same time. In expressing an idea, the writer must at least consider four structural levels: Overall text structure; paragraph structure, sentence structure (syntax), and word structure.... Clearly the attempt to coordinate all these requirements is a staggering job".

The Present Study

Subjects/Language Tasks

Fifteen subjects participated in this study. There were nine females and six males. The subjects were students in the department of English, Faculty of Arts, Egypt. They were in their second year of their four-year program. The instruments of this study were (1) questionnaire; (2) free composition; (3) unfocused correction and focused correction tasks; and (4) interviews. First, a questionnaire was constructed to elicit information from each subject about his/her name, sex, age, linguistic background, and the extent of his/her exposure to the English language. Second, an essay of about 200 words on the subject, "The Value of Learning English", was assigned as if it were a regular class assignment. This topic was chosen because it was related to students' interest and not technical. Instructions were given to the students before they wrote. Their attention was drawn to the necessity of concentrating on both form and meaning. Two native speakers with backgrounds in linguistics and ESL teaching read and marked the students' essays. My only concern was with morphosyntactic errors. Third, the errors in the students' compositions constituted the basis of two tasks: (1) an unfocused correction task in which all sentences from the student's essay with morphosyntactic errors were provided. The students were told that there were mistakes in the sentences, and were asked to correct them. (2) A focused correction task in which the same sentences from the student's essay were presented. This time, the student's attention was drawn to the specific errors (i.e., they were

in learning. The claim behind a cognitive theory of L_2 acquisition is that "L_2 acquisition cannot be understood without addressing the interaction between language and cognition.... at present this interaction is only poorly understood. In addition, L_2 acquisition is best understood as a complex cognitive skill" (Spolsky, 1985: 101).

Theoretical Framework

During the last decade, there has been substantial growth in interest in the analysis of texts of various types. To a large extent, emphasis has been given to the analysis of spoken text. More recently, attention has been turned to the analysis of written text. In this regard Krashen (1984: 41) points out that "studies of second language writing are sadly lacking". This situation was due to the fact that, for too long, proficiency in English has meant only oral proficiency. In other words, communicating in English has always been associated with students' ability to speak appropriately. What makes the situation even worse is that recent attention to communicative competence, with its emphasis on sociolinguistic factors of language use, has led to the erroneous impression that communication is an oral phenomenon. A rationale for the delayed use of writing was grounded in principles of behavioral psychology and structural linguistics: written language was essentially a recording of speech, and a learner could code writing only through reference to the oral code, which was previously and thoroughly mastered (Achard, 2007; Brown, 2009).

Writing has now begun to attract the attention of researchers and language teachers. As Coombs (1986: 115) suggests, "writing in a foreign language constitutes an important part of language proficiency. Like speaking, writing shows that the individual can use the language to communicate". Accordingly, writing now has been the focus of much discussion in the literature for more than 20 years. However, there exists, at present, no coherent, comprehensive theory of second language (L_2) writing. This can be explained in part by the newness of L_2 writing as an area of inquiry, but an equally important reason is the prevalent assumption that L_1 and L_2 writing are, for all intents and purposes, the same. Therefore, L_2 writing specialists need to look beyond L_1 writing theories, to better describe the unique nature of L_2 writing, to look into the potential sources of this uniqueness (cognitive, developmental, social, cultural, educational, linguistic), and to develop theories that adequately explain the phenomenon of L_2 writing. Johns (1990: 24), rightly, maintains that "in the 1980's, English as a second-language composition research developed and matured to an extent never imagined by the oral -aural proponents of the 1960s and early 1970s. Most of this research, however, has been drawn from research in first language (L_1) composition, which in turn is based upon L_1

Preliminary Remarks

The study of Second Language Acquisition (SLA) had its origins in attempts to solve practical problems. Until quite recently, research in this area was widely regarded as falling entirely within applied linguistics, and many still see the primary motivation for this research as that of contributing directly to the solution of the complex and socially important problems surrounding foreign and L_2 instruction (Ritchie and Bhatia, 1996). Broadly speaking, SLA research grew out of many language-related disciplines. Five major groups of researchers have contributed to our understanding of L_2 acquisition: 1) foreign-language educators who are worried about their students' progress; 2) child-language researchers who noticed that L_2 acquisition might be similar in interesting ways to L_1 acquisition; 3) linguists who wanted to use L_2 acquisition to test notions about language universals; 4) psycholinguists who were interested in language processing issues, and 5) sociolinguists and anthropologists who are interested in how language is used in various social settings (Snow, 1998; Sheen, 2005).

Specifically speaking, linguistics provides a useful perspective on L_2 learning and has led to stimulating ideas and research. Yet it must be remembered that linguistics is only one of the disciplines that SLA research can draw on; the full richness of the disciplines rests on the variety of ways that second languages impinge on the minds and lives of L_2 users. Multiple sources of information are needed to build a picture of the language knowledge in the mind (Cook, 1993: 269-270). I do, personally, believe that there is no single scientific truth. As McLaughlin (1987: 6), correctly, points out, disciplines tend to become fragmented into 'schools', whose members are loath to accept, and are even hostile to the views of other schools using different methods and reaching different conclusions. Each group becomes convinced that it has a corner on 'truth'. One philosophical position contends that truth can never be known directly and in its totality. Multiple ways of seeing result in multiple truths. Scientific progress is achieved as we come to illuminate progressively our knowledge in a particular domain by taking different perspectives, each of which must be evaluated in its own right (Bardovi-Harlig, 2006; Conley, 2008; Cohen, 2008).

The field of linguistics and cognitive psychology contain separate paradigms for describing second language acquisition. Linguistic theories assume that language is learned separately from cognitive skills, operating according to different principles from most learned behaviors. The cognitive framework of learning emerges from cognitive psychology and is based, in part, on information processing and, in part, on studies and theory that have evolved over the past fifteen years or so on the role of cognitive processes

الميكانيزمات اللغوية والإدراكية لأداء متعلمي اللغة الثانية في المهام المتعددة الاتجاهات

د. حسنى مصطفى الدالى *

الملخص

يتركز الاهتمام في الآونة الأخيرة في مجال علم اللغويات التطبيقية على الكشف عن الميكانيزمات الإدراكية واللغوية التي تؤثر في أداء متعلمي اللغة الإنجليزية بوصفها لغة ثانية، وبخاصة في حل المشكلات اللغوية المتعددة الاتجاهات.. ومن هنا تهتم هذه الدراسة بإلقاء الضوء على المفاهيم النفسية والإدراكية وبخاصة ظاهرة «الانتباه» وبيان تأثير هذه الظاهرة في أداء الدارسين للغة الإنجليزية بوصفها لغة ثانية في أثناء كتابة المقال وتصحيح الأخطاء النحوية والمورفولوجية ... وذلك من خلال دراسة تجريبية أجراها الباحث على عينة من الطلاب الذين يدرسون اللغة الإنجليزية بوصفها لغة ثانية، وتوصلت هذه الدراسة إلى عدة نتائج، منها، أولاً: أن أداء الطلاب في كتابة المقال وتصحيح الأخطاء النحوية والمورفولوجة يرتبط إيجابا أو سلبا بما لديهم من معرفة بطبيعة المهام اللغوية التي يؤدونها نوعا وكما... وقد يبدو هذا أمرًا بدهيا إلا أنه يرتبط في الوقت نفسه بمدى الكفاءة الإدراكية للطلاب وقدرتهم على تحمل الأعباء النفسية التى تتطلبها المشكلة اللغوية التي يعملون على حلها. ثانيا: أن إخفاق الطلاب في الأداء اللغوي قد يرجع في بعض الأحيان إلى الضعف الإدراكي لدى الطلاب، وليس بالضرورة إلى الضعف اللغوي كما كنا نتصور في الماضى.. وعلى هذا تؤكد الدراسة أن فهم عملية اكتساب اللغة الثانية يتطلب معرفة مدى التفاعل بين اللغة والإدراك، ولهذا تنادى بضرورة إجراء المزيد من الدراسات البحثية لمعرفة الكيفية التى يفكر بها الطلاب، والكيفية التي نعلمهم بها التفكير تعليما استراتيجيا فعالا.

---

* *أستاذ مساعد في اللغويات - جامعة الإمارات العربية المتحدة.*

Linguistic and Cognitive Mechanisms of L2 Learners' Performance in Tasks with Various Constraints

Hosni Mostafa El-dali Ph.D

Abstract

Recently, in Second Language Acquisition (SLA), much attention has been focused on cognitive mechanisms that underpin learners' performance in tasks with various constraints. The present study focuses on "attention" and other related concepts with respect to their definitions, theories, and presents empirical evidence of their role in shaping second language learners' performance in essay writing; unfocused, and focused correction tasks. Fifteen subjects participated in this study. They were asked, first, to write an essay on 'the value of learning English'. Second all subjects performed on two correction tasks; one was unfocused and the other was focused. Finally, each student was interviewed to explain his/her performance in the three tasks. The data analysis had a quantitative part which consisted of statistical comparison of the number of errors in the composition, unfocussed correction and focused correction tasks (by means of one-way ANOVA). It also had a qualitative part which was an analysis of each student's conception of the grammatical rules that were violated in order to explain any discrepancies between their performances in the three tasks.

This study, first, demonstrates that the deficiency in L2 learners' knowledge results in inaccurate composition writing and unsuccessful correction of errors even if their attention was drawn to these errors. Second, it offers another interpretation for the noticeable discrepancies in the subjects' performances. Such an interpretation is mainly based on the argument that composing in English is a multidimensional activity which requires L2 learners to do more than one thing simultaneously. Third, it shows that our students' failure to perform systematically may be due, sometimes, to cognitive deficiency. Accordingly, this study supports the view that language acquisition may not be fully understood without addressing the interaction between language and cognition. Fourth, this study shows that although 'noticing' or 'conscious awareness' may have some positive effect on L2 learners' performance; this effect, however, is constrained by two important factors: (1) learners' overall linguistic competence, and (2) the nature of the task; that is, whether it requires controlled or automatic processing of information. This is why further research is needed to know how our students think and how to teach them to think strategically.

---

* ***Associate Professor of Linguistics - United Arab Emirates University.***