



INTERACTION EFFECT OF META-COGNITIVE LANGUAGE LEARNING STRATEGIES-BASED INSTRUCTION IN ENGLISH AND HEMISPHERICITY ON STUDENTS' SELF-REGULATION

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ABSTRACT:

This paper attempts to ascertain the interaction effect of meta-cognitive language learning strategies-based instruction in English and hemisphericity on students' self-regulation. For this purpose, an intervention programme based on meta-cognitive language learning strategies of about 32 hours was developed for students of standard eighth spreading over ten weeks. The aim of the research was to ascertain whether meta-cognitive language learning strategies instruction has any effect on self-regulation of students. Structured tools were used in the study. The participants of the study included 52 and 48 students in the experimental and control groups respectively. The effect size of hemisphericity and treatment on self-regulation of students was found to be 0.07 and 0.08 respectively which is large in magnitude.



KEYWORDS: meta-cognitive language learning strategies, hemisphericity, self-regulation.

INTRODUCTION

There has been an increasing interest toward language learning and language learners since 1970s with the emergence of cognitive revolution, and since then great attention has been paid to language learning strategies. Research led to efforts to explain the cognitive processes in all aspects of learning, including language learning. Initial studies of language learning focused on describing externally observable behaviors of language

learners, followed by attempts to label strategic behaviors and ultimately to categorize those strategic behaviors and link them to language proficiency. There are many psychologists, who have given various definitions of learning strategies but one of the most applicable definitions which have been cited most frequently in the literature was provided by (Oxford, 1990). She defines language learning strategies as "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations". It

is, indeed, a reflection of what the learner intends to do and the specific actions he can take. She also, prominently, includes how context plays a crucial role in the language learning process. Yet today a conscious effort is required by the students to develop their study skills in a variety of ways and this also includes their meta-cognitive skills so that they can in-turn develop self-regulation to comprehend definition of the terms, to decode the words, to know its multiple contextual meanings, spelling, pronunciation & prosody during speech. There

are many theories relating to the idea of self-regulation. However Svinicki.(2010) quotes the work of Ryan and Deci in 2000 when they suggested their self-regulation theory which is said to motivate individuals to study through three basic needs; autonomy, competence and relatedness.

RATIONALE OF THE STUDY

The purpose of this study is to investigate the effect of meta-cognitive language learning based instruction in English and hemisphericity on eighth standard school students' self-regulation. The variables focused on in the present study include meta-cognitive strategies based instruction and hemisphericity as the independent variables and self-regulation as the dependent variable. The study is likely to enhance the use of meta-cognitive language learning strategies to improve students' English language skills. Since strategy used has been emphasized explicitly as one of the objectives of the study, it heightens the importance and significance of this study. Through the findings of this study, the researcher hopes to provide empirical evidence to show the effect of meta-cognitive language learning strategies on the students' self-regulation and also further provide implications for pedagogical practice for teachers.

NEED OF THE STUDY

In Indian schools, meta-cognitive strategy training is not an internal part of teaching. Teachers do not seem to pay attention to these strategies while designing their lessons. Language skills do not receive its due importance and students do not seem to be sufficiently trained to use meta-cognitive language learning strategies. Although there have been a number of studies like this one in different contexts abroad, here the study emphasizes that more research is needed to investigate the role of meta-cognitive language learning strategy instruction in learning and improving English language.

RESEARCH QUESTION

Considering the purpose of this study and in an attempt to initiate more research in the field of meta-cognitive language learning in second and foreign language (L2) acquisition in India, the research question for this study has been formulated as follows:

What is the effect of meta-cognitive language learning strategy based- instruction in English learning and hemisphericity on self-regulation of the students?

STATEMENT OF THE PROBLEM

Interaction Effect of Meta-cognitive Language Learning Strategies-based Instruction in English and Hemisphericity on Self-regulation of Students

REVIEW OF RELATED LITERATURE

Meta-Cognitive Language Learning Strategy and Self-Regulation:

Kuyper, Van der Werf& Lubbers (2000) studied educational attainment in a longitudinal study of 2,038 Dutch secondary school students and found motivation, meta-cognition, and self-regulation to be predictors of attainment, along with student background variables and prior achievement. Meta-cognitive and self-regulation variables were scarcely related to mean achievement.

Nevin, Bradshaw, Cardelle-Elawa&Diaz-Greenberg, (2009) used principles derived from critical pedagogy theory and constructs from motivation theory such as meta-cognition and self-regulation, the authors elicited teacher candidates' voices so as to deepen an understanding of the major factors that shape their identity in becoming teachers, especially in light of today's multicultural societies. They described pre-service and in-service teachers' responses to assignments that engaged them in using critical pedagogical processes which helped them operationalize a philosophy of their teaching and strengthened their motivations to teach. The findings support the importance of identifying and working with the social, historical, and cultural contexts in which teachers work and live. The participants spanned three university settings (two in the south western United States and one in Brunei, Darussalam), underscoring that the cultures within which teachers derived their identity play a

significant role in shaping the many different types of "self" that are engaged in the social context of a teacher's practice at particular points in space and time.

Lia (2010) stated that "weak vocabulary knowledge often results in poor reading comprehension and low vocabulary results in problems for many middle elementary students' reading comprehension". She also stated that this problem has far reaching consequences especially when students who enter the intermediate grades, because the reading expectations graduate from learning to read to reading to learn. Furthermore to fully comprehend text also means to understand directions on a science test, read a word problem in math, and so on. However reading many different types of materials has benefits too because it enables students to see newly learned words in a variety of contexts. Both students with low-and high-level literacy skills benefit from time spent reading; vocabulary which is learned from context and comprehension is therefore improved if the difficulty of the material presented is appropriate to the current reading level (Squires, 1995). Another approach from research has also demonstrated that time spent reading, both inside & outside of school, is essential to developing vocabulary. To read outside school students need to develop their meta-cognitive skills to better enhance their understanding of text through enhanced self-regulation (Stahl and Fairbanks, 1986; Nagy, Herman, and Anderson, 1985).

McBain (2011) looked at the ways in which vocabulary is taught and in particular what important learning points ESL (English Second Language), students should know in order to understand new vocabulary words. It also discussed various ideas of how teachers could teach vocabulary. It highlighted the importance of a theory that states there are 3 key stages that students' progress through when they are learning new vocabulary. In addition it focused on how this theory can be applied in the classroom when designing new materials, and on the types of exercises and learning experiences that ESL students could use to develop their meta-cognition and self-regulation skills as a view to long term strengthening of their vocabulary study to enhance reading and in-depth understanding. The article concluded with a suggestion on how vocabulary logs could be designed and organized from simple word associational exercises to comprehension exercises and finally through to generative style exercises.

Jahedi (2012) explored and identify the relationship between motivational beliefs (self-efficacy, intrinsic value, test anxiety) and self-regulated strategies (cognitive strategy and self-regulation) and academic achievement (marks obtained by students in four test conducted during that academic year) of school students. The study also found out whether motivational beliefs and self-regulated learning components influenced academic achievement. Data was collected from 8th standard students in group of 12 to 15 years of English medium schools in Pune city. The alpha Coefficient reliability of the scale showed that these scale have substantial to high internal Consistency with regards to the Indian sample. Some Statistical Techniques such as Pearson's product moment correlation, t-test and ANOVA were used. The major findings showed that there was significant correlation between motivational beliefs components and self-regulated learning components of the students. The findings from the second and third research question showed that all components of motivation and self-regulated learning strategies influenced academic achievement of students.

Mahadi & Subramaniam (2013) highlighted the role of meta-cognitive self-regulated learning strategies in enhancing performance among students by providing theoretical and empirical foundations drawn from literature on meta-cognitive awareness, self-regulated learning strategies and language performances, specifically towards language achievements.

Busso (2014) focused on the concepts of risk and resilience and their potential to inform clinical interventions, school-based prevention programs, and social policies. Research suggests that childhood adversity can trigger a cascade of psychological and neurobiological events that can lead to mental disorders in later life. Yet little is known about how these processes manifest in adolescence, a developmental window that is typically associated with an elevated risk for psychopathology and represents a period of neurological growth and reorganization that is second only to early childhood. A better understanding of adolescent brain development may provide an empirical grounding to improve the focus and timing of interventions, particularly those that target self-regulation, meta-cognition, and

social supports. Finally, opportunities and challenges that emerge when bridging neuroscience and prevention science are discussed.

OPERATIONAL DEFINITIONS OF THE TERMS

Meta-cognition: Meta-cognition refers to a learner's awareness of his/her own knowledge and cognitive processes and ability to understand, control and manipulate his/her own cognitive processes.

Meta-cognitive Strategies: Meta-cognitive strategies refers to methods used to help students understand the way they learn and refers to the processes designed for students to manage, monitor and evaluate their learning and 'think' about their 'thinking'.

Hemisphericity: Brain hemisphericity is the tendency of an individual to process information through the left hemisphere or the right hemisphere or in combination.

Self-Regulation: Self-regulation is an integrated learning process, consisting of the development of a set of constructive behaviors that affect one's learning. These processes are planned and adapted to support the pursuit of personal goals in changing learning environments.

SCOPE AND DELIMITATIONS OF THE STUDY

In the present study, English medium schools from Greater Mumbai affiliated to the SSC board have been included. It excludes schools with other medium of instruction such as Marathi, Hindi, Urdu, Gujarati etc. The present study includes eighth standard students only. Students from other primary and secondary classes have been excluded. It also excludes schools affiliated to ICSE or CBSE boards. The present research studies interaction effect of meta-cognitive language learning strategies-based instruction in English and hemisphericity on self-regulation of students. It excludes other variables such as SES and IQ as other independent variables. Similarly, the study includes self-regulation as the dependent variable.

It has adopted the quantitative approach to the study rather than the qualitative approach.

OBJECTIVES OF THE STUDY

1. To ascertain the interaction effect of the intervention programme and hemisphericity on self-regulation of students.
2. To compute the effect size of the intervention programme and hemisphericity on self-regulation of students.

NULL HYPOTHESES OF THE STUDY

1. There is no significant interaction effect of the intervention programme and hemisphericity on self-regulation of students.

METHODOLOGY OF THE PRESENT STUDY

The study has adopted the quasi- experimental method design of the pre-test post-test, non-equivalent groups type. It can be described as follows: The pre-test-post-test non-equivalent groups design:

$$O_1XO_2$$

$$O_3CO_4$$

where,

O_1 and O_3 = Pre-test scores

O_2 and O_4 = Post- test scores

And

X : Experimental group

C : Control group.

The duration of the intervention programme was for 32 hours in the experimental group. There was no intervention programme given in the control group. The control group was taught using the traditional method.

Factorial Design (2×3)

Factorial design has been used to study the interaction effect of the intervention programme and hemisphericity on self-regulation of students.

Sample of the Study

In the present study, the sample has been selected consisting of one intact class each, of standard eight from two different schools situated in the Greater Mumbai. The experimental and the control groups included 52 and 48 students respectively.

Techniques of Data Analysis

- ANCOVA
- Partial eta-squared

Tools of the Study

In the present study following tools were used by the researcher to collect the data:

1. Hemispheric Dominance Test (Venkataraman, 1996)
2. Self-Regulation Questionnaire (Brown, Miller, & Lawendowski, 1999)

Hemispheric Dominance Test (Venkataraman, 1996)

Hemispheric dominance test is a readymade tool prepared by Venkataraman (1996). The tool consists of 50 items. The tool is prepared to know the use of hemisphericity. There are students who make more use of right hemisphere and some students make use of left hemisphere, some students make use of both hemispheres equally. The tool helped to know the relationship with hemisphericity dominance.

Hemisphere	Reliability
Right Hemisphere	0.89
Left Hemisphere	0.71
Integrated Hemisphere	0.65

Scoring of the Tool

There are two columns given in the test for each item. The student has to put a tick mark either in one of these columns or both. A tick mark in the first column shows the dominance of the right hemisphere. A tick mark in the second column shows the dominance of the left hemisphere. A tick mark in both columns shows the dominance of the both hemispheres and integrated hemisphere. The illustrations of the items pertaining to the hemispheric dominance which are included in the Hemispheric Dominance Test are as follows:

The examples of the items indicate the right hemispheric dominance are,

1A – I understand clearly the information passed through gestures and actions.

2A – I have the habit of taking while reading or writing.

The examples of the items indicate the left hemispheric dominance are,

1B – I understand clearly the information when passed through words by others.

2B – I need complete silence while reading or writing.

The examples of the items indicate the integrated hemispheric dominance are,

1A – I understand clearly the information passed through gestures and actions.

1B – I understand clearly the information when passed through words by others.

The minimum possible score for right hemispheric dominance is 1 whereas maximum possible score is 49. The minimum possible score for left hemispheric dominance is 1 whereas maximum possible score is 49. The minimum possible score for integrated hemispheric dominance is 1 whereas maximum possible score is 49.

Self-Regulation Questionnaire (Brown, Miller, &Lawendowski, 1999)

The Self-Regulation Questionnaire (SRQ; (Brown, Miller, &Lawendowski, 1999)) was developed as a first attempt to assess the self-regulatory processes through self-report. Items were developed to mark each of the seven sub-processes of the Miller and Brown (1991) model, forming seven rationally-derived subscales of the SRQ.

Reliability

Reliability of the SRQ appears to be excellent. Test-retest reliability for the total SRQ score was high ($r = .94, p < .0001$). Internal consistency of the scale was also quite high ($\alpha = .91$), consistent with the idea that its items contain much redundancy.

Content Validity

The SRQ also has shown strong convergent validity with concomitant measures. In community sample (Aubrey et al., 1994), SRQ score was significantly and inversely correlated with volume of alcohol consumption per occasion ($r = -.23, p = .04$) and with negative consequences of drinking ($r = -.46, p < .0001$). That is, people with lower scores on the SRQ were more likely to be heavy and problem drinkers. The SRQ also significantly discriminated individuals meeting diagnostic criteria for alcohol dependence ($N = 32$; lowest scores) from heavy drinkers not seeking treatment ($N = 29$; intermediate scores) and people without alcohol problems ($N = 22$; highest SRQ scores).

In a clinical study with alcohol-dependent inpatients (Brown, 1994), individuals with lower SRQ scores showed more evidence of frontal impairment on neuropsychological measures, more alcohol-related consequences, fewer abstinent days, and a higher percentage of heavy drinking days. SRQ scores have also been found to be related to impulsivity (Patock-Peckham, Cheong, Balhorn, &Nagoshi, 2001).

In a sample of 300 college students (Brown, Baumann, Smith, & Etheridge, 1997), lower SRQ scores were associated with binge drinking, more alcohol-related consequences, and more frequent marijuana use. In a subsequent study of 303 college students, SRQ scores were inversely related to risk-taking ($r = -.244, p < .001$) and impulsivity ($r = -.469, p < .001$) as well as binge drinking, driving after drinking, marijuana use and tobacco smoking.

Again with college students ($N=251$), the parenting style of the same-sex parent predicted students' self-regulation scores, which in turn predicted alcohol use and problems (Patock-Peckham, Cheong, Balhorn, &Nagoshi, 2001).

Scoring

All 63 items are answered on a 5-point Likert scale with the following scale points:

1	Strongly disagree
2	Disagree
3	Uncertain or Unsure
4	Agree
5	Strongly Agree

For reverse-scaled items, 1=5, 2=4, 3=3, 4=2 and 5=1

Intervention Programme

The duration of the intervention programme was 32 hours. The control group was taught using the traditional method. The experimental group was taught by using the intervention programme based on CALLA (Cognitive Academic Language Learning Approach model) which had five steps as follows:

1. **Preparation** (Activate background knowledge)
2. **Presentation** (Explain, Model)
3. **Practice** (Prompt use of strategies, Give feedback)
4. **Self-Evaluation** (Assess strategies)
5. **Expansion** (Support transfer)

The teaching units were selected from the syllabus prescribed for the schools affiliated to the SSC board for the state of Maharashtra and included the topics on Noun, Adjective and Adverb Formation, Noun and Adjective Clauses, Remove and Use “too, enough, so that...cannot, hardly, scarcely”, text book poems and prose, Letter writing, Narrative essay, Expansion of ideas, Report writing, Speechwriting.

Data Analysis

Null Hypothesis 1: There is no significant interaction effect of the intervention programme and hemisphericity on self-regulation of students. This hypothesis was tested using two-way ANCOVA in which the pre-test scores of self-regulation of students are controlled.

The following table shows the relevant statistics of self-regulation of students by intervention programme and hemisphericity.

Table 1: Relevant statistics for ANCOVA

	HEMISPHERICITY			
	Both	Left	Right	Total
	N	N	N	N
EG	3	10	39	52
CG	5	4	39	48
	8	14	78	100
	Mean	Mean	Mean	Mean
EG	160.44	165.66	155.75	157.92
CG	149.01	157.93	151.24	151.56
Total	153.29	163.45	153.49	154.87

The following table shows the ANCOVA for self-regulation of students by intervention programme and hemisphericity after partialling out the effect of the pre-test scores of self-regulation of students.

Table 2: ANCOVA for Self-regulation of students by Intervention Programme (IP) and Hemisphericity(H)

Source	SS	df	MS	F	P
Rows (IP)	1003.46	1	1003.46	6.72	0.0111
Columns (H)	1174.6	2	587.3	3.93	0.023
Interaction (IPxH)	-206.41	2	-103.2	-0.69	<.0001
Error	13890.95	93	149.37		
Total	15862.6	98			

The preceding table shows that (a) the F-ratio for rows i.e.intervention programme is significant at 0.0111 level. Hence it may be concluded that self-regulation of students differs on the basis of experimental group and control group. (b) The F-ratio for columns i.e. hemisphericity is significant at 0.02 level. Hence it may be concluded that self-regulation of students differs on the basis of their hemisphericity. (c) The F-ratio for interaction effect of intervention programme and hemisphericity is significant at <.0001 level. Hence it may be concluded that there is an interactive effect of intervention programme and hemisphericity and self-regulation of students.

Since the F-ratio for the interaction effect is significant, the t-test is done to ascertain which Mean scores differ from each other as shown in table 3.

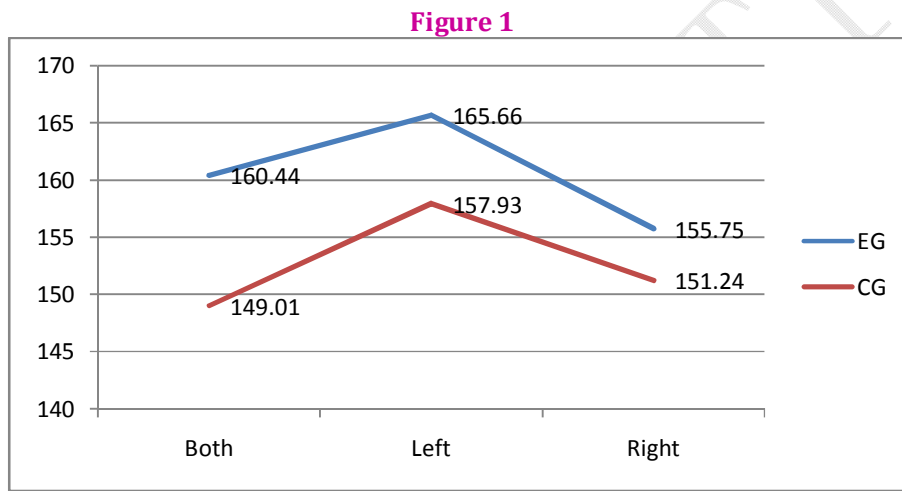
Table 3: Mean difference in self-regulation by interaction between Intervention Programme and Hemisphericity

Group	Mean	N	t	I.o.s.
EG	157.92	52		
CG	151.56	48	2.61	0.01
EG - B	160.44	3		
CG - B	149.01	5	1.28	NS
EG - L	165.66	10		
CG - L	157.93	4	1.07	NS
EG - R	155.75	39		
CG - R	151.24	39	1.99	0.05
B	153.29	8		
L	163.45	14	1.88	NS
L	163.45	14		
R	153.49	78	2.81	0.01
B	153.29	8		
R	153.49	78	0.04	NS

CONCLUSION

The major concern of the present study was to explore the effectiveness of explicit meta-cognitive strategies-based instructional programme and hemisphericity on self-regulation of students. From the preceding table, it can be seen that there is a significant effect of (a) the intervention programme, (b) hemisphericity of students and (c) the interaction between these two on the self-regulation of students. Further, the mean self-regulation of students from experimental group is significantly greater than that of control group. The mean self-regulation of students with dominant left-brain hemisphericity is significantly greater than that of the dominant right-brain hemisphericity. On the other hand, the mean self-regulation of students from the experimental group is significantly greater than that of the control group among the students with dominant right-brain. This implies that the experimental treatment is more effective in enhancing self-regulation of students with dominant right-brain.

The interaction effect of meta-cognitive strategies-based instruction and hemisphericity on self-regulation of students is shown in figure 1.



Effect Size

The following table shows the effect size:

Table 4: Effect Size

	Effect size	
	Magnitude	Interpretation
Intervention Programme	0.07	Large
Hemisphericity	0.08	Large
Interaction effect	0.02	Small

DISCUSSION

The intervention programme developed by the researcher has an effect on the self-regulation of students of experimental group with right hemisphericity dominance. This could be because students exhibited greater control over their learning by setting goals to achieve, understanding the material or the subject actively, interacting vigorously with the content, making use of evidence, inquiry and evaluation, taking a broad view and relating ideas to one another, are motivated by interest, relating new ideas to previous knowledge, relating concepts to everyday experience and thinking about what they know and what they did not know. They also are more able to relate and distinguish between evidence, facts and arguments. They tend to read and study beyond the course requirements and do

evaluation and reflection for themselves. The instructional programme perhaps helped students in setting goals, managing their learning, monitoring their progress, thinking about their learning and learning from their mistakes. Thus, meta-cognitive strategies instruction was more effective in improving self-regulation in students.

In other words, the explicit instruction and practice the experimental group received about how to plan their English learning, set specific goals within a time frame, select the most appropriate meta-cognitive learning strategy, monitor strategy use, use a combination of strategies, self-testing degree of mastery, managing their time by devoting some time during their study hours to practice, and finally evaluating the whole process, contributed to this improved and expanded English knowledge as well as self-regulation. The findings of this study indicate that explicit meta-cognitive language learning strategies instruction has positive impact on the lexical knowledge development of ESL students (English as a Second Language) and self-regulation. It corroborates with studies focused on other types of learning strategies such as cognitive strategies using the two kinds of instruction (explicit and embedded) (Wenden, 1987; Carrel et al., 1989; Kern, 1989; Cohen, Weaver, & Li, 1998; Wenden, 1998) according to which learning strategy instruction has positive effects on development of skills and components of language.

The findings of this study support the foreign language research literature on strategy training of other components and skills of the language such as reading comprehension (Kern, 1989; Carrell, 1998). Moreover, it can be asserted that the model used to teach meta-cognitive strategies was a practical and useful one.

The findings of the present study have implications for learners, teachers, and teacher educators in the realm of education in general. It helps teachers in accomplishing their challenging task of teaching English in ESL contexts where learners have less exposure to English language. Teachers can help learners use different meta-cognitive strategies to facilitate their English learning. Textbook writers, especially in the context of ESL, do not include a sufficient amount of information on learning strategies. A need for the inclusion of and emphasis on learning strategies is obvious.

Both learners and teachers need to become aware of learning styles and strategies through strategy instruction. Attempts to teach students to use learning strategies have produced good results (Rubin & Thompson, 1994). The main objective of such attempts is to allow students to become more aware of their preferred learning strategies and to help them become more responsible for meeting their own objectives. Such objectives can be only achieved when students are trained in strategy use so that they become more independent and effective.

However, before teaching students how to use strategies effectively, teachers should be trained in strategy instruction and assessment. They should also be trained on how to implement strategy instruction inside their classrooms. Cohen, Weaver, and Li advised teachers to systematically introduce and reinforce learning strategies that help students use the target language more effectively and thus improve their performance. Oxford (1990a) suggests that strategy training can be achieved after familiarizing the students with the language learning strategies and providing them with opportunities for practicing these strategies through integrating them into the classroom instructional plan and embedding them into regular class activities.

There is a need for more comprehensive research on a wide range of variables affecting language learning strategies use.

Finally, the idea of self-regulation and empowerment with strategic instruction will possibly prove more effective in certain contexts. Where learners of ESL have been educated in a more teacher-centered, top-down curriculum rather than one that promotes learners' autonomy and independence, strategy instruction could prove most effective.

REFERENCES

- Abdullah Coskun (2010). "The effect of metacognitive strategy training on the listening performance of beginner students." *Novitas-ROYAL (Research on Youth and Language)*, 2010, 4 (1), 35-50. Retrieved on July 19, 2016 from http://www.novitasroyal.org/Vol_4_1/coskun.pdf

- Brown, J. (2008). Effect size and eta squared. Shiken: JALT Testing & Evaluation SIG Newsletter. 12 (2) April 2008 (p. 38 - 43). Retrieved on May 1, 2019 from <https://stardock.cs.virginia.edu/empirical/resources/Brown28.pdf>
- Busso, Daniel S. (2014). Neurobiological Processes of Risk and Resilience in Adolescence: Implications for Policy and Prevention Science. *Mind, Brain, and Education*, v8 n1 p 34-43. Retrieved on July 19, 2016 from https://eric.ed.gov/?q=meta+cognition+and+selfregulation&ff1=dtySince_2007&ff2=subMetacognition&ff3=subBrain+Hemisphere+Functions&id=EJ1028653
- Gi-Pyo Park. (2011). The Validation Process of the SILL: A Confirmatory Factor Analysis. Retrieved on October 26, 2016 from <http://files.eric.ed.gov/fulltext/EJ1081044.pdf>
- Jahedi, Soheyla (2012). A study of relationship between motivational beliefs and self-regulated strategies and academic achievement of school students.". Retrieved on July 19, 2016, from <http://shodhganga.inflibnet.ac.in/handle/10603/3842>
- Kuyper, H.; Van der Werf, M. P. C.; Lubbers, M. J. (2000) "Motivation, Meta-Cognition and Self-Regulation as Predictors of Long Term Educational Attainment. " Retrieved on July 19, 2016 from <https://eric.ed.gov/?q=meta+cognition+and+self-regulation&id=EJ620761>
- M Farmanlu & Seyed Jalal Abdolmanafi-Rokn (2014). Relationship between EFL In-service Teachers' Language Learning Strategies and their Beliefs toward Teaching Methodologies. *International Journal of Applied Linguistics & English Literature*, Vol. 3 No. 6. Retrieved on July 19, 2016 from www.journals.aiac.org.au/index.php/IJALEL/article/download/.../113
- McBain, Robert (2011). "Teaching Vocabulary to ESL Students". Retrieved on July 19, 2016 from <https://eric.ed.gov/?q=meta+cognition+and+self-regulation&id=ED523679>
- Nevin, Ann; Bradshaw, Lori; Cardelle-Elawar, Maria; Diaz-Greenberg, Rosario (2009). Becoming a Teacher: A Cross-Cultural Analysis of Motivation and Teacher Identity Formation. Retrieved on July 19, 2016 from <https://eric.ed.gov/?q=meta+cognition+and+self-regulation&id=ED505403>
- R. Mahadi & G. Subramaniam (2013). The role of meta-cognitive self-regulated learning strategies in enhancing language performance: a theoretical and empirical review. Retrieved on July 19, 2016 from [http://www.aessweb.com/pdf-files/jasr%203\(6\)570-577.pdf](http://www.aessweb.com/pdf-files/jasr%203(6)570-577.pdf)
- Rasekh & Ranjbar (2003). Metacognitive Strategy Training for Vocabulary Learning. Retrieved on July 19, 2016 from <http://tesl-ej.org/ej26/a5.html>
- Self-Regulation Questionnaire (Brown, Miller, & Lawendowski, 1999). Retrieved on June 1, 2015 from [http://casaa.unm.edu/inst/SelfRegulation%20Questionnaire%20\(SRQ\).pdf](http://casaa.unm.edu/inst/SelfRegulation%20Questionnaire%20(SRQ).pdf)
- SPSS Tutorials. <https://www.spss-tutorials.com/spss-partial-eta-squared/comment-page-1/#comment>
- Svinicki, Do. M. (2010) Student learning: From Teacher-Directed to Self-Regulation New Directions for Teaching and Learning no 123. wileyonlinelibrary.com DOI: 101002/tl.411
- Zare, P. (2012). Language Learning Strategies Among EFL/ESL Learners: A Review of Literature. Retrieved on July 19, 2016 from http://www.ijhssnet.com/journals/Vol_2_No_5_March_2012/20.pdf
<http://imaging.mrc-cbu.cam.ac.uk/statswiki/FAQ/effectSize>