The Effect of Concept Mapping on Iranian Intermediate EFL Learners' Self-efficacy and Expository Writing Accuracy

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Abstract—**The purpose of this study is to investigate the questions of whether 1) Does concept mapping knowledge have any effect on Intermediate EFL learners' self-efficacy? 2) Does concept mapping knowledge have any effect on Intermediate EFL learners' expository writing accuracy? The following five steps determine the delivery and the sequence of the study: 1) A TOEFL test (writing section) as the pretest, 2) self-efficacy questionnaire, 3) 8 sessions of instruction on concept map construction with experimental group, 4) integration of concept mapping as a pre-writing strategy in experimental group, and 5) post-test of writing and self-efficacy questionnaire with both groups. Firstly, the writing Proficiency Test along with self-efficacy questionnaire was given to 180 learners. Based on the results of TOEFL writing test and self-efficacy questionnaire, 60 intermediate homogeneous participants were selected and randomly assigned to two groups of control and experimental. In the course of 22-sessions, during regular class time 15 minutes were devoted to concept mapping. Each session the participants of both groups were given a writing task besides their course book writing section. The students in the experimental group were engaged in concept map construction after writing each task and were organized their pre-writing activities such as discussion, doing exercises, and reflective practices according to their constructed maps. A post-test of writing and an efficacy questionnaire were administered to all the participants and the pair sample t- test, and independent sample t-test were used to answer the study questions. The results showed that concept mapping had a significant effect on self-efficacy and expository writing accuracy.**

Index Terms—**concept mapping, self-efficacy, expository writing**

I. INTRODUCTION

The most important skill in language is writing. Writing is essential to academic success it is an active, productive skill, students learning to write in a foreign language come across multiple challenges. Of this group, writing needs thinking strategies that allow the individual to express him or herself competently. It is a complicated activity that needs a certain level of linguistic knowledge, writing conventions, vocabulary and grammar. As noted by Celce-Mercia (1991), expressing one's ideas in written form in a second or foreign language, and doing so with reasonable accuracy and coherence, is a major achievement. A type of writing is Expository writing; it is probably the type most frequently used in college courses (Bander, 1983).

Writing is an important skill by which students improve and perform their knowledge. The ability to define individual's thoughts effectively in writing is based on the individual's feeling of efficacy towards the skill which he/she acquires in his/her learning. However, writing is the most popular means by which teachers evaluate students' knowledge; it is not a skill to be learned easily. It is a complex task that needs a number of processes to be performed. Undoubtedly, expository writing is the genre that is needed in education and work. In the middle grades and beyond, writing becomes the backbone and expression of academic growth. As children move from the stage of learning to read to the stage of reading to learn, expository writing helps them to organize and express their thinking. Since expository writing needs logical analysis, students are required to have direct instruction in how to organize their writing, give their logical options based on the main topic, and create plausible sentences.

Expository writing usually emphases the main topic, logical supporting facts, strong organization, a logical order, clarity, unity, coherence, and smooth transitions. It is used in the college admission or job application essay (CV), a query letter, proposal, and inter-office memo is useful in school and workplace.

In the years 1987 and 1993, Gere and Sharples proposed that expressing one's ideas in written form in a second or foreign language, and doing so with reasonable accuracy and coherence was an important achievement. The complexity

of writing as a task tends to heighten anxiety levels in students who were taking writing courses. As was mentioned by Yavuz and Genc in the year 1998, this anxiety can often demotivate the student or lead to discouragement, and thus may result in negative attitudes towards writing. They were Claimed that most students, low and high achievers alike, found writing difficult and view it as something they just had to persevere through in order to pass certain exams This might related to affective elements such as student attitudes, writing apprehension and self-efficacy in writing.

As was recommended by Pajares and Valiante in the year 1994, through their experience if a student will become unwilling to express him or herself in writing lacks confidence in his or her ability to write, or will feel apprehensive about writing then the student will unlikely to be proficient at writing composition. Self-Efficacy (SE) is an important aspect of Albert Bandura's Social Cognitive Theory (SCT). Albert Bandura's theory on SE began in the 1970s and continues to be developed by others as it is applied to different behavioral theories and problems.

Self-efficacy (SE) has been described as a sense of confidence in which a behavior can be successfully organized and completed. It acts to be strengthen approach to tasks feel efficacious about and to weaken motivation for tasks which fallen less confidents (Bandura, 1986).

Recently, concept mapping has been used as a tool for learning and teaching. Concept maps are tools that make ideas visual. They allow prior experience and understanding to be taken into consideration when building new concepts into the perceptual framework. By using concept maps, learners use their prior knowledge to understand the new concepts. It makes a link between unknown and known information that leads to deeper understanding (Novak, 2010).

By choosing concepts and linking words carefully, learners can use concept maps as a learning tool to catch every nuances of meaning, and summarize their knowledge. Concept mapping relies heavily on cognitive theory and Ausubel's assimilation (Novak & Cañas, 2008) theory. According to assimilation theory, learning is the most effective when new knowledge is related to previously learned material.

II. STATEMENT OF THE PROBLEM

Writing is considered as one of the cumbersome skills in EFL context. Hyland (2003) pointed out that writing is a sociocognitive activity which involves skills in planning and drafting. Writing is always seen as one of the most prominent skills in EFL pedagogy whose paramountcy is especially underscored in academic and higher educational settings. However, for the students, writing is mostly regarded as a challenging and unmanageable task. This leaves an immense responsibility on EFL teachers and writing instructors who are expected to bring the learners into terms with this focal, yet undervalued skill.

Self-efficacy beliefs are exceedingly important in terms of writing and even in everyday life. For example, self-efficacy beliefs can affect health, cognitive factors, career development, and academics (Bandura, 1997). They predict writing performance but also have far-reaching effects. Self-efficacy beliefs can affect perceived usefulness of writing and writing apprehension, both of which are key factors in terms of writing performance (Pajares & Valiante, 1999).

Concept maps can be considered both a cognitive and constructivist learning strategy. Based on Ausubel, Novak and Hanesian's (1986) view of cognitive learning, when learners create concept maps they are focusing on determining relationships between and among concepts within their cognitive structures.

As was suggested by Harmer in the year 1998, the writing skill had finally been recognized as an important skill for language learning. Having said that, through extensive research, a number of approaches and techniques have been provided regarding ESL or L2 writing during the last decade. But this study aims at surveying whether concept mapping knowledge have influence on self-efficacy and expository writing performance of Iranian EFL learners.

III. SIGNIFICANCE OF THE STUDY

According to McLeod (1987) writing is both cognitive and emotional activities, so it has a useful effect on all phases of writing process. The implication is that EFL instructors should study students' beliefs about their writing capabilities, their attitudes towards writing, and their level of apprehension about writing. Bandura recommended that self-efficacy beliefs were developed primarily through inactive attainment; in other words, people's confidence will grow as they attempt and complete tasks and the feeling of success will increase confidence whereas failure will decrease it (1986).

In addition, as was acknowledged by Bandura in the year 1987, the verbal persuasion was messages that individuals will receive from authority figures, could reinforce and increase self-efficacy. As well as helping students with writing apprehension, self-efficacy and attitude, teachers should also make efforts to help students understand how their affective processes could influence their EFL writing performance. Briefly, teachers should make every effort to help their students increase competence through confidence. As noted, our investigation provides evidence for the roles and importance of writing apprehension, attitudes towards writing, and writing self-efficacy in relation to actual writing performance. This research could be considered a preliminary investigation on which follow-up work could be based. In a comparative future study, it would be interesting to assess whether student performance improves after training or coaching on self-efficacy, apprehension, and attitude related to writing.

In recent years, there has been a great body of research on the effect of strategy training on language learning. The findings of the study done by Chen (2007) revealed that strategy training not only leads to the improvement of language proficiency, but also engages the dynamic internal changes in the learning process. Strategy training has been applied to

language learning skills such as reading, and listening (Rao, 2007). However, little has been done on writing and speaking.

Rao (2007) investigated the effect of brainstorming on developing writing skill. The findings of this study revealed that students who have been trained in brainstorming strategy outperformed the other group of students who did not receive any instruction. Also, the attitudinal part of the survey indicated that students who used brainstorming had a positive idea about the effectiveness of the brainstorming technique. So, it is of paramount importance to invent activities before asking students to compose an essay. There has been great body of research on the effect of concept mapping in education in the first language. However, there has been limited number of research in the second language area (Vakilifard & Armand, 2006).

Concept mapping has been applied as a pre-writing strategy. However, there has been limited number of research in this field. Lin (2003) studied the effect of computer-based concept mapping as a pre-writing strategy for middle school students. In this study, the researcher compared the computer based concept mapping as a pre-writing strategy with paper-and-pencil concept mapping. According to the findings of the study, computer-based concept mapping was effective in enhancing idea generation and the total quality of the students' pre-writing concept maps in preparation for a persuasive writing task.

In comparison with computer-based concept mapping, the students who constructed the paper and-pencil concept maps scored better in persuasive writing according to the criteria contained in the state authorized writing rubric than the students who generated computer-based concept maps. Ojima (2006) conducted a case study of three Japanese ESL writers in Japan on the effect of concept mapping as pre-task planning. The results of the study indicated that concept mapping as a pre-task planning task was influential in improving ESL learners composition skills, but in ways unique to individual experience, motivation, and task conditions.

Pishgadam and Ghanizadeh (2006) investigated the impact of concept mapping as a pre-writing activity on EFL learners' writing ability. The findings of the study revealed that the students in the experimental group outperformed the students in the control group in terms of quantity and quality of generating, organizing, and associating ideas. Also, the results of the study indicated that concept mapping could be effective for affective as well as cognitive instructional objectives.

Another study done by Talebinezhad and Mousapor Negari (2001) on the effect of explicit teaching of concept mapping as a learning strategy in expository writing on EFL learners' self-regulation found that learners gained higher self-regulation in writing task as the result of the explicit instruction of the concept mapping strategy. And the last but not the least is the study done by Cho and Lee (2010). The study aimed at examining the use of collaborative concept mapping strategy in Iranian writing classes. They mention that the collaborative concept mapping strategy was used to engage Iranian students in communicative and acculturative interaction. Findings of the study demonstrated that concept mapping was beneficial in improving Iranian students writing skill in general, and in improving the organization, language use, and vocabulary in writing in particular.

The aim of the researcher in this research is to investigate the influence of concept mapping knowledge on Iranian intermediate EFL learners' self-efficacy and their expository writing. Information organizing during or after learning is one advantage of concept maps. These visually depict connections are often used across the curriculum or in a unit of study. The other advantage of these is used to organize ideas in writing before beginning to write. These can be used in note-taking in a unit of study that extends for a long duration of time as the connections unfold.

The findings of the study would be of considerable significance in the design of EFL courses in general and writing courses in particular. Concept mapping knowledge, if proved to be effective in improving the learners' language related skills, can be employed in EFL classes as a powerful and lively means to increase the learners' self-efficacy and expository writing accuracy.

IV. RESEARCH QUESTIONS AND HYPOTHESES

Based on the objectives of the current study, the following research questions were formulated

1) Does concept mapping knowledge have any effect on Iranian Intermediate EFL learners' self-efficacy?

2) Does concept mapping knowledge have any effect on Iranian Intermediate EFL learners' expository writing accuracy?

There were two null hypotheses based on the research questions:

H01: Concept mapping knowledge does not have any effect on Iranian Intermediate   EFL learners' self-efficacy.

H02: Concept mapping knowledge does not have any effect on Iranian Intermediate EFL learners' writing accuracy.

V. METHOD

Participants

In this research 180 male and female subjects were selected from four private language institutes. After homogenizing TOEFL test, pre-writing test was taken, nearly by self-efficacy questionnaire 60 males and females were selected and these 60 subjects randomly were divided into two groups, one group was control and the second group was experimental. These subjects had four years English experience at these private language institutes. All of the

participants were Iranian students. They aged between 16 and 18. The subjects were taking Interchange 3 third edition, while they were attending interchange classes, all of the process of research was implemented during regular class time.

Instruments

Three instruments were used for this research, they included: 1. A TOEFL proficiency test, 2. A Self-efficacy in Writing Scale (SWS), and 3. Concept Mapping Forms.

Self-Efficacy in Writing Scale (SWS)

In the year 2004, Yavuz Erkan developed this writing scale self-efficacy questionnaire. The researcher in this research employed the writing scale self –efficacy questionnaire because the aim of the researcher was to assess the students' self-efficacy in writing. According to Bandura (1977), this 28-item writing scale self-efficacy questionnaire will grade the strength of subjects' beliefs in their writing ability. The items of the scale were graded with the four-tier system Likert scale which its grades were adjusted in this sort from Strongly Disagree, Disagree, to Strongly Agree, and Agree. Each statement on the scale was preceded by the phrase "I can …**".**

Based on its robust psychometric properties, the researcher for assessing self-efficacy in writing skill in foreign language assumed that this new writing self-efficacy scale will be a reliable and valid tool. For the ease of using and understanding, the questionnaire was translated to Persian. And the Persian version of this questionnaire was approved by two experienced psychology and linguistic teachers. The Persian version of the scale was administered to the subjects in order to determine their self-beliefs which had linked to their writing in English.

Procedure

The following five steps determine the delivery and the sequence of the study: 1) A TOEFL test (writing section) as the pretest, 2) Self-efficacy questionnaire, 3) 8 sessions of instruction on concept map construction with experimental group, 4) Integration of concept mapping as a pre-writing strategy in experimental group, and 5) Writing post-test and self-efficacy questionnaire with both groups and self-efficacy questionnaire just for experimental group.

As stated earlier, the sample population in this research was included 180 learners of pretest TOEFL Test Practices Book by Keith S. False (1994) to check the homogeneity of students; students were divided in two groups. Experimental learners received self-efficacy questionnaire. To reduce the possible fluctuation of reliability of writing scores, two experienced teachers were scored the students' writing tasks and the average score of both raters were considered as the final score of writing.

Based on the results of TOEFL writing test, 60 participants who took 0.5 SD above and below the mean score, i.e. between 49-65 were considered as intermediate level and they were randomly assigned to two groups of control and experimental. Experimental group received self-efficacy questionnaire. The two classes were conducted by the same teacher. The course book Interchange 3 third edition (J.C. Richard) and the instructional materials (some writing extracts from IELTS and TOEFL writing) were identical for both groups. The difference was that the students in the experimental group were engaged in concept map construction after writing each task and were organized their pre-writing activities such as discussion, doing exercises, and reflective practices according to their constructed maps. Conversely, the students in the control group didn't develop their pre-writing activities based on concept mapping technique. The strategy training for experimental group in classroom was that following the pre-testing, the participants attended 22 sessions during regular class time, each session 15 minutes were devoted to concept mapping. Strategy training was done according to the model proposed by Harris and Graham (1996). At the end of the course the same self-efficacy questionnaire will be given and a post-test was administered to examine the possible existence of differences between two groups.

Design

This study was conducted on the basis of quasi-experimental design whereby the control group received regular classroom instruction. The experimental group, on the other hand, was exposed to the concept mapping as pre-writing was offered the opportunity to interact with pre-writing before starting writing. This group was given sub topics about topic of writing and the pervious information related to new information that allowed for application of various theories to the events that were about to take place. This project is not intended to be a definitive statement concerning how individuals learn best or by what means. That is well beyond the purview of the current study. However, this study is an attempt to determine the extent to which students' concept mapping as pre-writing performance affected on self-efficacy and expository writing.

VI. Data Collection and Data Analysis

1) Proficiency Test

The participants of this study were 180 EFL students. After administering the proficiency test, 60 students who took scores ±0.5 SD above and below the mean, i.e. the scores between 49 and 65 were considered as homogeneous intermediate level and were chosen as the participants of in this study.

TABLE 1
DESCRIPTIVE STATISTICS OF SCORES OF ENGLISH PROFICIENCY TOEFL

N	Valid	180
	Missing	0
Mean		57.2100
Std. Error of Mean		1.17261
Median		56.0000
Mode		50.00
Std. Deviation		16.58315
Variance		275.001
Scenes		-.301
Std. Error of Scenes		.172
Kurtosis		.194
Std. Error of Kurtosis		.342
Range		80.00
Minimum		10.00

The mean of subjects' proficiency scores was 57.21 and the standard deviation was 16.583. The subjects' proficiency test scores ranged from 10 to 90 (see table 4.2). The distribution of proficiency scores was approximately normal because the ratios of skewness (-0.301) and kurtosis (0.194) to their respective standard errors were not over +2.
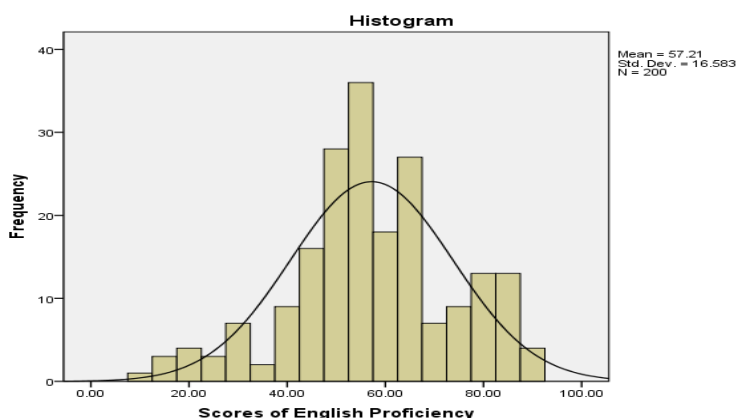

Figure 1 Histogram of scores of proficiency test

In order to insure the reliability of Proficiency test, a correlation analysis and reliability analysis of proficiency scores were carried out. The correlation analysis and reliability analysis of proficiency test showed that the selected TOEFL test and the added 20 vocabulary items are highly correlated and reliable. Table 4.2 shows the reliability analysis of the proficiency test. Cronbach's Alpha showed that the instrument enjoys a high degree of internal consistency.

TABLE 2
RELIABILITY STATISTICS OF PROFICIENCY TEST

Cronbach's Alpha	Number of items
0.87	100

2) Pre-Writing task scores
The reliability analysis of the scores demonstrated the inter-rater reliability of writing scores.

TABLE 3
CORRELATION ANALYSIS OF WRITING SCORES

		Writing Score1	Writing Score 2
Pre Writing Score1	Pearson Correlation	1	.893[**]
	Sig. (2-tailed)		.000
	N	60	60
Pre Writing Score 2	Pearson Correlation	.893**	1
	Sig. (2-tailed)	.000	
	N	60	60

**. Correlation is significant at the 0.01 level (2-tailed).

Table 3 shows that the given scores by raters are highly correlated. Cronbach's Alpha showed that the scores enjoy high reliability (Table 4).

TABLE 4
RELIABILITY STATISTICS OF WRITING SCORES

Cronbach's Alpha	Set of scores
.87	2

TABLE 5
DESCRIPTIVE STATISTICS OF PRE- WRITING

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Prewriting	60	2.9333	.45535	-.564	.309	-.327	.608
Valid N (listwise)	60						

According to Cambridge preparation for the TOEFL test J. Gear and R. Gear (2005, p. 6) writing scores from 1 to 6. The mean of subjects writing scores was 2.9333 and the standard deviation was .45535.The scores ranged from 0 to 5 (see table 5). The distribution of writing scores was approximately normal because the ratios of skewness (-. 564) and kurtosis (-. 327) to their respective standard errors were not over +2.

After administering the writing pretest, the researchers utilized an independent sample t-test to compare the mean scores of two groups to see if there was any significant difference between the groups regarding their writing pretest scores.

TABLE 6
INDEPENDENT SAMPLE T-TEST FOR THE PRETEST SCORES

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.83	.180	1.43	58	.158	.16667	.11654	-.06662	.39995
Equal variances not assumed			1.43	57.271	.158	.16667	.11654	-.06668	.40002

The results of the independent t-test show that (t (58)=1.43., P =.158 > .05 there was no difference between the pretest scores of the control and the experimental groups. Thus it can be concluded that the two groups enjoyed the same level of writing ability.
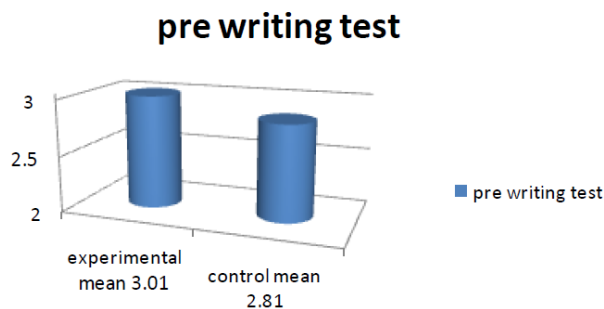

Figure 2 Pre-writing test by groups

3) Post-Writing Task Scores

After 22 sessions of treatment, a post-test was given to the participants.

TABLE 7
CORRELATION ANALYSIS OF WRITING SCORES

		Writing Score1	Writing Score 2
Post Writing Score1	Pearson Correlation	1	.923**
	Sig. (2-tailed)		.000
	N	60	60
Post Writing Score 2	Pearson Correlation	.923**	1
	Sig. (2-tailed)	.000	
	N	60	60

**. Correlation is significant at the 0.01 level (2-tailed).

Table 7 shows that the given scores by raters are highly correlated. Cronbach's Alpha showed that the scores enjoy high reliability (Table 8).

TABLE 8
RELIABILITY STATISTICS OF POST-WRITING SCORES

Cronbach's Alpha	Set of scores
.90	2

In order to analyze the obtained data, the researchers utilized Independent sample t-test after computing the mean scores of both experimental and control groups in pretest and post-test.

TABLE 9
INDEPENDENT SAMPLE T- TEST ANALYSIS OF THE POST-TEST CONTROL AND THE POST-TEST EXPERIMENTAL SCORES REGARDING EXPOSITORY WRITING

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-taile)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	2.296	.135	10.114	58	.000	1.18333	.11699	.94914	1.41752
Equal variances not assumed			10.114	57.181	.000	1.18333	.11699	.94914	1.41752

As Table 9 displays, regarding the content scores of the post-test scores considering the experimental and the control groups, the differences in both groups weren't the same and the differences were statistically meaningful (t (58) = 10.114, p = .000< .05) . Thus the second null-hypothesis as concept mapping knowledge does not have any effect on Iranian Intermediate EFL learners' expository writing accuracy **was rejected**
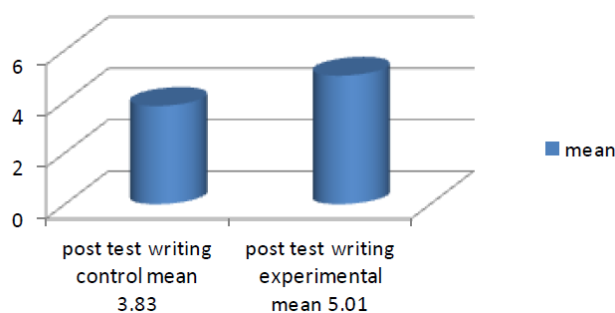

Figure 3 Post-test of writing skills by groups

Self-efficacy Analysis

TABLE 10
DESCRIPTIVE STATISTICS OF THE PRE QUESTIONNAIRE AND POST QUESTIONNAIRE SORES REGARDING SELF-EFFICACY

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pre questionnaire experimental	30	83.00	89.00	83.8667	3.84827
Post questionnaire experimental	30	93.00	97.00	93.7000	3.54430
Valid N (listwise)	30				

As it is evident from Table 10, the pre-questionnaire mean scores of the experimental group were 83.00. After the participants in the experimental group received instruction, the researchers implemented the same questionnaire to an experimental group as post questionnaire. This questionnaire after 22 sessions, more than 3 months, has been administered to the experimental group. The mean scores of the post-questionnaire for the experimental group were 93.00. To determine whether there was a significant difference between the pre-questionnaire scores and post-questionnaire scores, a Pair sample t- test was conducted. Table 6 represents the results.
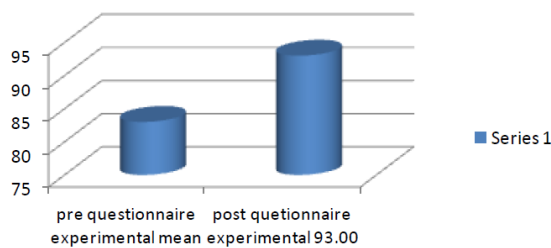
Figure 4 Pre- questionnaire and post- questionnaire

TABLE 11
MEAN, STD. DEVIATION AND STD. ERROR MEAN EXPERIMENTAL GROUP PRE-POST QUESTIONNAIRE PAIRED SAMPLES STATISTICS

Pair 1	Mean	N	Std. Deviation	Std. Error Mean
Pre questionnaire	83.8667	30	3.84827	.70260
Post questionnaire	93.7000	30	3.54430	.64710

As can be seen in table 11, the mean of the pre-questionnaire of the experimental group is, 83.8667 standard deviation is 3.84827 and standard error mean is .70260, the mean of the post-test of the experimental group is 93.7000, standard deviation is 3.54430 and standard error mean is .64710; results show that post questionnaire scores of the experimental group is higher than the pre-questionnaire group.

TABLE 12
PAIRED SAMPLE T TEST TO EVALUATE DIFFERENCES BETWEEN EXPERIMENTAL GROUPS' PRE - AND POST-QUESTIONNAIRE

Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	T	Df	Sig. (2-tailed)
Pair1	Pre &post questionnaire	-9.83333	1.96668	.35906	-27.386	29	.0000

As Table 12 displays, a significant difference was observed between the pre and post questionnaire scores of the experimental groups, i.e. (t (29) = -27.38, p=.000< .05) Thus the first null-hypothesis as concept mapping knowledge does not have any effect on Iranian Intermediate EFL learners' self-efficacy **was rejected .**

VII. DISCUSSION

The present study aimed at investigating the role of concept mapping as a pre-writing strategy in EFL learners' self-efficacy and expository writing ability. The findings of the study revealed that explicit teaching of concept mapping could improve EFL learners' self-efficacy and expository writing ability. The findings of this study reveal that concept maps as a cognitive tool can enhance learners' self-efficacy. It can also help them improve their writing skill.

The consequences of this investigation were aligned with many other researchers' results. As was acknowledged by Bandura in the year 1997, academic self-beliefs were strongly predictive value of academic performance. These researchers such as Meier, McCarthy, & Schmeck, (1984), Shell, Murphy & Bruning (1989), Zimmerman and Bandura (1994), and McCarthy, Meier, & Rinderer, (1985) have investigated the predictive value of self-efficacy relative to writing performance. They conducted that two constructs are related; in other words, self-efficacy is a predictor of actual writing performance.

The results of the present study showed that concept mapping knowledge has positive effect on Intermediate EFL learners' self-efficacy and indicated that first hypothesis which was: H01: Concept mapping knowledge does not have any effect on Iranian Intermediate EFL learners' self-efficacy **was rejected**

The results of the present study are in line with those of many other researchers such as Talebinezhad & Mousapor Negari (2001); Chan (2002), Lin ,Strickland, Ray, & Denner (2004), Vakilifard & Armand (2006), Ojima (2006), Pishgadam & Ghanizadeh (2006), Chen (2007), Rao (2007), Lee & Cho (2010). The present study demonstrated that the experimental group who received strategy instruction outperformed the control group who followed traditional approach, which is in line with the findings of the study done by Chen (2007) confirming that strategy training not only leads to the improvement of language proficiency, but also engages the dynamic internal changes in the learning process.

The results of the present study revealed that concept mapping helped learners to improve their expository writing skill. This is in consistent with some of the previous findings such as researches conducted by Lee and Cho (2010) on the effect of collaborative concept mapping strategy in Korean writing classes, Ojima (2006) case study on three Japanese ESL writers in Japan regarding the effect of concept mapping as pre-task planning, and Lin et al. (2004) research on the effect of computer-based concept mapping as a pre-writing strategy for middle school students. The results of these studies revealed that concept mapping strategy was influential in improving learners' writing ability.

Moreover, the findings of the present study are in favor of the results of the research done by Rao (2007) on the effect of brainstorming in developing writing skill. Rao (2007) proposed that brainstorming stimulates students' thinking and enables them to create ideas and organize raw materials in a logical order. In the present study, concept

mapping strategy served as a brainstorming tool. Brainstorming activates learners' prior knowledge, and facilitates the use of this knowledge.

There have been some other researches in Iranian EFL context regarding the effect of concept mapping strategy on EFL learners' writing. The results of the present study are in line with the results of the study done by Talebinezhad and Mousapor Negari (2001) on the effect of explicit teaching of concept mapping as a learning strategy in expository writing on EFL learners' self-regulation. They found that the learners gained higher self-regulation in writing task as the result of the explicit instruction of the concept mapping strategy.

Pishgadam & Ghanizadeh (2006) also investigated the impact of concept mapping as a pre-writing activity on EFL learners' writing ability. The findings of the study revealed that students who received strategy instruction outperformed the other students in terms of quantity and quality of generating, organizing, and associating ideas. The findings of the present study were similar to the results of the Pishghadam and Ghanizadeh's (2006) study, in that, it also revealed that the students who received concept mapping strategy instruction had better performance in writing.

The results of the present study showed that concept mapping knowledge has positive effect on Intermediate EFL learners' expository writing and second hypothesis : H02: concept mapping knowledge does not have any effect on Iranian Intermediate EFL learners' writing accuracy **was rejected**

VIII. CONCLUSION

The main goal of the present research is to study the effect of the explicit instruction of concept mapping strategy on EFL intermediate students' self-efficacy and expository writing. The results indicate a positive effect of the explicit instruction of concept mapping strategy on student's self-efficacy.

According to Barnhardt (1997), there is a relationship between strategy use and confidence in language learning. Students, who have had difficulties in writing a foreign language, by succeeding in the application of concept mapping strategy, would be able to improve their self-efficacy. It meant that when the students had a better idea of how to go about a writing task, they were more positive about the task. Thus, they were satisfied to take part in writing task. This made a most tangible evidence of the quality of both the learning process and conceptual understanding. Nevertheless, one more reason would be that the construction of concept maps might have helped students to build more complex cognitive structures in regard to information which was important for writing.

The writing process involves a number of cognitive tasks that must be engaged at the same time. During the writing process, language learners should devote attention to the effective communication and connective structure of texts as well as grammatical and vocabulary choices Collins & Gentner (1982). In writing classes, the challenge for educators is to provide strategic devices for the beginning writer to practice fewer task components in a meaningful way. This investigation proposed that a concept mapping technique can be used as a pre-writing strategy to reduce the cognitive demands for beginning foreign language writers during the writing process. Specifically, the study compared individual concept map construction and collaborative concept map construction to determine the benefit of using concept mapping on language learners' writing performances.

The results suggested that the students who used the concept mapping strategy for their writing planning outperformed the students who did not use the strategy in writing. This study's finding is consistent with previous studies reporting the positive impact of concept mapping on second/foreign language learning (Lin, 2003) the effectiveness of the pre-writing strategy on their writing. Based on these findings, this study concludes that concept mapping could be a viable strategy to improve self-efficacy and second/foreign language expository writing for intermediate learners'.

This study hypothesized that collaborative concept mapping activities might have allowed the language learners to spend more time thinking either in or about the foreign language during the collaborative planning process, thus improving language learning.

In the current study, the researchers chose to use this pre-writing strategy because of concept mapping is a student-directed strategy that does not rely on teacher involvement or other formal or complex technological supports it is easily adopted by users. Furthermore, concept mapping is flexible enough to be useful in a variety of learning settings. The researchers used concept mapping as pre-writing strategy to enhance the achievement as well as the self-efficacy and expository writing of intermediate EFL students.

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