Promoting EFL Learners' Academic Motivation and Reading Comprehension via Portfolio Development of Concept Maps

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Abstract

Portfolios as a means of constructivist learning appear to show great promise in enhancing diverse dimensions of learning and promoting learner motivation. This study is an investigation into the effectiveness of portfolio development on the reading comprehension and academic motivation of undergraduate students majoring in English Literature in Iran. In order to answer the research questions, a quasi-experimental design in the form of a pretest (treatment) posttest control group was utilized in this study. Participants included two classes of reading comprehension at Tehran's Alzahra University. Learners in the experimental group were required to develop a portfolio containing 10 self-generated concept maps based on the content of the readings as their artifacts. The instruction in the control group was conducted in the traditional teacher-directed manner. Two TOEFL tests and an Academic Motivation Questionnaire were administered to both groups. Results of the statistical analysis proved that students benefited from the portfolio development in the form of concept map generation both in their reading comprehension and their motivation levels.

Keywords: alternative assessment, concept map, motivation, reading comprehension, portfolio assessment

Introduction

Prior to the 1980s, models of education were inclined towards the knowledge transmission-absorption paradigm. Emphasis was on the product of knowing

rather than its process. Instruction was aimed at enabling the learners to absorb objective knowledge that have already been verified by other people, usually the experts, and transmitted by teachers as sole information-givers to passive students (Anyanwu, 2008). In the circumstances of this approach, teachers were regarded as the disseminators of information and learners as passive recipients of the knowledge that teachers impart. This approach recognized the learners' least amount of active participation in the learning situation (Tangdhanakanond, Pitiyanuwat, & Archwamety, 2006).

To reverse this trend, a paradigm shift has been advocated in education. A shift from a behavioral deterministic-paradigm that is goal-directed in terms of terminal behavior and the measurement of observable behaviors towards a non-deterministic holistic-humanistic paradigm has led to the emergence of constructivist approaches (Delmastro, 2003). Therefore, in the paradigm shift toward constructivism, ownership of learning is transferred from the teacher to the learners since it is believed that knowledge which learners construct on their own is more enduring than that which is delivered to them by the 'expert' (Anyanwu, 2008). In other words, the learner is recognized as a meaning maker rather than an empty vessel waiting to be filled with knowledge.

Alternative Forms of Assessment

Fundamental to education is the need to evaluate students' learning and the effectiveness of teaching methods and the programs offered. Assessment allows faculty members to determine what and how well students are learning. It also allows faculty to fine tune teaching methods; therefore, it should be an integral part of the educational process, continually providing both *feedback* and *feedforward*. For that reason, it needs to be incorporated systematically into teaching strategies at all levels. Overall, the purpose of assessment should be to improve standards, not merely to measure them (Huerta-Macias, 1995; Klenowski, 2002).

Recent educational developments such as constructivism and multiple intelligence theories request new movements to provoke radical changes in traditional approaches of instruction and assessment. For this reason, alternative assessment approaches are needed in assessing the learning process and outcomes as an important means of gaining a dynamic picture of students' academic and linguistic development. Hamayan (1995) claims that alternative assessment refers to procedures and techniques which can be used within the context of instruction and can be easily incorporated into the daily activities of the classroom. This comes about as there is growing

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recognition that a single measure is incapable of estimating the diversity of skills, knowledge, processes, and strategies that combine to determine students' progress.

Alternative assessment is particularly relevant to foreign language and second language instruction because it focuses attention on what students can do with the language rather than what they are able to produce or recall. In contrast to traditional testing, students are evaluated on what they integrate and produce rather than on what they are able to recall and reproduce (Huerta-Macias, 1995). For this reason, alternative assessment approaches are needed in assessing both the learning process and outcomes.

Portfolio Assessment

Portfolio assessment, as one of the ways of alternative assessment, has become widely used in educational settings as an alternative to the chronic ailments observed by the one-shot traditional testing culture. Indeed, portfolios have become an increasingly common element of authentic assessment across many university classrooms in various disciplines such as mathematics, biology, social sciences, and second language learning. In this regard, the necessity of using portfolio has been emphasized by many researches (Birgin, 2003; De Fina, 1992; Gussie, 1998; Kohonen, 2001; Micklo, 1997; Mumme, 1991; Norman, 1998, all cited in Birgin & Baki, 2007; Chen, 2006). A huge amount of research has also been carried out on the effectiveness of alternative assessment over traditional methods in Iran (e.g. Nezakatgoo, 2005).

More qualitative, expansionist approaches such as portfolio provide an alternative to the dominant quantitative testing tradition as Klenowski (2002, p. 2) argues, "Portfolio use for assessment and learning offers the opportunity to redress the imbalance caused by testing and mechanistic conceptualizations of curriculum and assessment". He further emphasizes that there is a need to build a symbiosis between curriculum and assessment policy that is reflected in pedagogical practice. The use of the portfolio offers the opportunity for the realization of this important integration of assessment with curriculum development.

A range of definitions of the portfolio has been developed, illustrating the growth and diversity of its use. For example Paulson, Paulson, and Meyer

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(1991, pp. 60-61) define portfolio as, "a purposeful collection of learner work that illustrates efforts, progress, and achievement in one or more areas [over time]. The collection must include: student participation in selecting contents, the criteria for selection, the criteria for judging merit, and evidence of student self-reflection".

Grace (1992, p. 1), who stresses the learning process, defines portfolio as, "a record of the child's process of learning: what the child has learned and how she has gone about learning; how she thinks, questions, analyzes, synthesizes, produces, creates; and how she interacts – intellectually, emotionally and socially – with others". While Winsor and Ellefson (1995) who stress both the learning process and learning product, state that, "Portfolio is a fusion of process and product. It is the process of reflection, selection, rationalization, and evaluation, together with the product of those processes" (cited in Birgin & Baki, 2007).

The construction of a portfolio focuses on the process as much as the final product. A portfolio allows the creator to demonstrate critical thinking skills by demonstrating the process of collecting, selecting, and reflecting upon their own learning. Information gathered in a portfolio can help teachers diagnose a student's strengths and weaknesses. Moreover, when students analyze and reflect upon their own work, they gain insight into their own shortcomings and also their own thinking and learning process. As Trepagnier (2004, p. 197) maintains, "The process builds a relationship between teachers and students and between students and the work they produce". It could be stated that assessment becomes more individual and holistic since according to Wang and Liao (2008), students' longitudinal process performance can be evaluated.

Concept Maps and Reading Comprehension

Concept mapping was developed by Novak during the 1970s and is based on the Ausubel-Novak learning theory (cited in Novak & Cañas, 2006). One of the most cited definitions for concept maps has been provided by Novak and Cañas (2006) who state that concept maps are graphical tools for organizing and representing knowledge. They include concepts, usually enclosed in circles or boxes of some type, and relationships between concepts indicated by a connecting line linking two concepts.

Concept maps are heuristic tools that allow two-dimensional representation of knowledge in the form of hierarchical diagrams that reflect

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the conceptual organization of a general theme or concept and show the relationships between its components. In the teaching-learning of L2, concept maps is a tool that allows one to represent constructivist knowledge acquired through reading and interpretation of texts, promotes active participation in the construction of new knowledge, and generates significant learning on the basis of previous experiences and conceptual changes generated during the reader's interaction with peers.

Concept mapping allows the creation of concepts in a non-rote and automatic way through active processes of preparation, collation, and confirmation by the student, identifying what is relevant or not, reading and rereading the text as often as necessary, emphasizing and extracting information, selecting key concepts and hierarchies, and establishing linkages between different aspects of the subject. Additionally, it allows an exchange of views, a deeper study of the topic, creating a need for additional consultation, and provides a complete scheme for comprehensive and analytical study of the theme presented in the text (Delmastro, 2003).

Concept mapping as an educational strategy is in line with the shift from teacher to learner from teacher to learner and as a result holds the potential to improve academic achievement (Peterson & Snyder, 1998). In this regard, learners should be taught and encouraged to create concept maps (Laight, 2004). The important point is that the initial process of drawing a map not only demands active involvement of the learner in the learning process but also sheds light on their understanding of a specific learning area. Consequently, such information about learners' understanding enables facilitators to identify learners' cognitive deficiencies and provide remedial feedback.

Motivation

Motivation is of great importance in language education as it is one of the most common terms teachers and students use to explain what causes success or failure in learning. Indeed, motivation provides the primary impetus to initiate second/foreign language (L2) learning and later the driving force to sustain the long and often tedious learning process. Without sufficient motivation as Dörnyei (2009) rightly states, even individuals with the most remarkable abilities cannot accomplish long-term goals. Neither are appropriate curricula and good teaching enough on their own to ensure academic achievement; students also need to have a modicum of motivation.

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Getting learners involved and motivated in learning is essential. This requires developing skills and strategies for regulating motivation. How can learners be brought to see themselves as agents of their own thinking with the capacity to redirect their thinking in improved ways? The social-interactive context of learning would seem to play a crucial role. As McCombs (1994, cited in Ushioda, 2008) argues, by providing positive interpersonal support and appropriately structured feedback, teachers can encourage and scaffold learners' attempts to reflect constructively on their learning experience and to redirect their thinking in more positive ways. The teachers' task here is not so much to tell learners what they think, but to lead learners to reflect on and evaluate their own achievements and learning experience in a constructive manner.

Motivation and Self-Determination Theory

One of the most influential paradigms explored in mainstream motivational psychology has been *self-determination theory* introduced by Deci and Ryan (1985) as an elaboration of the intrinsic/extrinsic paradigm (cited in Dörnyei, 2001). This theory includes the well-known distinction between *intrinsic motivation* (i.e. performing a behavior for its own sake in order to experience pleasure and satisfaction such as the joy of doing a particular activity or satisfying one's curiosity) and *extrinsic motivation* (i.e. performing a behavior as a means to an end, that is, to receive some extrinsic reward such as obtaining good grades or alternatively avoiding punishment).

Self-determination theory places the various types of regulations on a continuum between self-determined (intrinsic) and controlled (extrinsic) forms of motivation, depending on how internalized they are, that is, how much the regulation has been transferred from outside to inside the individual. Applying the intrinsic/extrinsic continuum can be helpful in organizing language learning goals systematically since learning an L2 almost always contains a combination of external and internal regulatory factors.

Extrinsic motivation has traditionally been seen as something that can undermine intrinsic motivation; however, research has shown that under certain circumstances, if they are sufficiently self-determined and internalized, extrinsic rewards can be combined with, or can even lead to, intrinsic motivation. According to Deci and Ryan (1985), the need for autonomy is an innate human need, referring to the desire to be self-initiating and self-regulating of one's actions. Therefore, self-determination, that is,

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engaging in an activity with a full sense of wanting, choosing, and personal endorsement (cited in Dörnyei, 1998), is seen as a prerequisite for any behavior to be intrinsically rewarding. Other researchers such as Paris and Turner's (1994, cited in Dörnyei, 1998) have shared this view by asserting that the essence of motivated action is the ability to choose among alternative courses of action, or at least, to choose to expend varying degrees of effort for a particular purpose.

An important point to consider is that in light of the self-determination theory, extrinsic motivation is no longer regarded as an opposing counterpart of intrinsic motivation but has been placed along a continuum between self-determined and controlled forms of motivation.

Even though many theories of motivation exist, in this study we are concerned with academic motivation which draws upon the social cognitive theory of motivation, according to which, students are active in their education and capable of interpreting rather than merely responding to stimuli. In academic terms, motivation can be defined as a student's willingness, need, desire, and compulsion to take part and prosper in the learning process (Levy, 2008).

This research intended to offer an alternative assessment method – portfolio assessment – as compared with the more widely used traditional assessment method for the improvement of reading comprehension in Iran's university classes. After developing a portfolio assessment framework as an instructional procedure, the researchers attempted to investigate whether the students in the portfolio assessment class displayed higher reading comprehension as well as experiencing greater motivation than those in the traditional classes. Therefore, the objectives of the study, in summary, were:

➢ To assess the effect of portfolio development on students' reading comprehension, and
➢ To see the effect of portfolio development on students' intrinsic and extrinsic motivation

To fulfill the above objectives, the following null hypotheses were raised:

$H_0$1. *Portfolio development of concept maps has no significant effect on EFL learners' reading comprehension.*

$H_0$2. *Portfolio development of concept maps has no significant effect on EFL learners' intrinsic motivation.*

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$H_0$3. Portfolio development of concept maps has no significant effect on EFL learners' extrinsic motivation.

In order to verify the above hypotheses, a quasi-experimental design in the form of *a pretest [treatment] posttest control group* was adopted investigating the effect of portfolio development on adult EFL learners' reading comprehension and motivation.

Method

Participants

The students selected for the study were from two intact classes of first-year students studying for a BA degree in English Literature at Tehran's Alzahra University, comprising a total number of 62 students. As the researchers did not have the luxury of randomly selecting and assigning their subjects to the two groups (due to the regulations of the university), they had to resort to the convenient sampling procedure and a quasi-experimental design. However, to make sure that the two control and experimental groups required to participate in this study were homogeneous in terms of their reading comprehension ability at the outset of the study, a pretest was conducted with its required subsequent statistical measures (explained in the results section of this paper). The class was a four-credit obligatory reading course consisting of two sessions each week. The participants' age ranged between 18 and 26. The experimental group comprised 33 students while 29 students were in the control group.

Instrumentation

The reading section of a language proficiency test, a textbook of reading in English, and a questionnaire were used in this study which were:
1. The reading section of a TOEFL (2004) used for the pre- and posttest;
2. *Brush Up Your English: An Advanced Reading Course (1)* (Nowruzi, 2001); and
3. Academic Motivation Questionnaire (Shia, 1998).

More details of the above three instruments are provided in the following section.

Procedure

Administering the TOEFL (Pretest)

At the beginning of the study, with the intention of examining whether the two classes available for the study were homogeneous or not, the reading comprehension section of a standardized Test of English as a Foreign Language (TOEFL, 2004) was utilized. The test consisted of five passages with 50 multiple-choice items with a time allotment of 55 minutes for completing the test. This served as the pretest for the research. The descriptive and inferential statistics of the pretest administration are tabulated in the result section of this paper.

Instruction

Once the subjects were randomly assigned to the two control and experimental groups, students attended class for two sessions per week for one term consisting of 15 weeks in both groups. Each session lasted about 90 minutes.

The control group was conducted in the traditional teacher-directed way. In this class, pre-reading activities such as brainstorming or discussing the title of the lesson were carried out; afterwards, some while-reading activities such as predicting the forthcoming paragraphs or the ending of the lesson were performed and once the reading was over, post-reading activities were presented for each reading lesson. After the completion of each lesson, all questions posed by the students were answered and they were required to complete the exercises at home. The next session, the exercises were checked with the students in class.

The difference between the control and experimental groups was that portfolio development and the artifacts included in it were introduced and explained to the latter group but not to the control group. In the experimental group, after each unit of reading was discussed and completed in class, students had to find out the main idea and most important points of each lesson and draw a concept map for it at home, since as Yancey (2002)

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maintains learners should be the information architects of their own portfolios (cited in Barrett & Carney, 2005).

In the first two sessions, information regarding the main characteristics and benefits of concept mapping was provided to the participants in the experimental group. Strategy training was practiced following Harris and Graham (1996): 1) strategy description, 2) discussion of goals and purposes, 3) modeling of strategy, 4) student mastery of strategy steps, and 5) guided practice and feedback (cited in Talebinezhad & Mousapour, 2006). Afterwards, several concept maps (CM) drawn by students from another class were displayed. For the third lesson, by encouraging learners to contribute to the discussion and through brainstorming technique, a CM was drawn on the board by eliciting information from the learners. In this way, all learners contributed to CM generation.

For the later sessions after studying each unit of reading and the completion of all the exercises, learners were required to draw a CM based on the lesson studied at home and the next session, they handed in their self-generated CMs. These CMs were assessed based on the criteria developed by the teacher that learners were informed about and were returned to the students afterwards and collected by them in a portfolio. In order to increase the learning value of portfolios, and to make sure learners benefited from each others' ideas and CMs, each session a few students were asked to display their CMs in class and the other learners were encouraged to comment on them. In this way, learners' listening and speaking ability were focused on as well. Since the development of portfolio is an essential task in the portfolio system, guidelines for its development were provided at the start of the course. By the end of the term, students were required to showcase their achievements and favored artifacts to other class members so everybody had a chance to view several completed portfolios in order to learn from them and obtain fresh ideas as to how to improve their own work.

At the end of the term, students in both the control and experimental groups had to participate in a TOEFL (posttest) reading comprehension exam to be compared with the TOEFL pretest scores.

Grading

The grading scheme of this portfolio system was used to monitor and support students' learning process, achievement, and efforts. For that reason,

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portfolios were rated by the teacher of the course (one of the researchers) in light of completeness (whether the collection recorded different learning activities), documentation (whether works were dated and showed self-reflection), language (whether language use was clear and correct), and design and neatness (whether it was organized and presented neatly). The components used for the grading of each portfolio was established (Table 1) with grades ranging from 1 to 4 assigned to each component; at the end, all these points were added up and a total grade was assigned to each portfolio.

Table 1 – Portfolio grading scheme

	1 (not good)	2 (good)	3 (very good)	4 (excellent)
Completeness				
Documentation				
Language				
Design & neatness				

Administering the Posttest

The same pretest (the 50-item reading section of a TOEFL) was administered as the posttest at the end of the instruction to all the participants in both experimental and control groups. Again, both the descriptive and inferential statistics of this administration are presented in the result section of the paper.

Administering the Academic Motivation Questionnaire

The Academic Motivation Questionnaire (Shia, 1998) consists of 60 questions with seven-scale Likert type answers (see Appendix). The scaling was numbered as 1 "Does not describe me", to 7 "Strongly describes me" including 20 questions related to intrinsic motivation and 40 related to extrinsic motivation. The questions were randomly distributed in the questionnaire; therefore, respondents did not have any idea as to which question inquired about intrinsic motivation and which about extrinsic motivation.

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This questionnaire was intended to measure the effectiveness of portfolio development on both intrinsic and extrinsic motivation of the participants, and to compare the motivation of experimental and control groups. The participants were required to fill out the questionnaire anonymously in one of the class sessions at the end of the treatment period. They were given ample time to complete the questionnaire which they had to return to the researcher on the same session. Although responding to it was not obligatory, they were encouraged to complete it.

Results

Pretest

As explained above, the classes were intact; hence, to make sure that the two classes bore no significant difference in terms of their reading comprehension at the beginning of the study, the reading comprehension section of a TOEFL test was administered to both groups. The descriptive statistics of this administration appear below in Table 2.

Table 2 – Descriptive statistics of the pretest

Group	Measures of Central Value			Measures of Variability			Skewness	
	Mode	Median	Mean	Range	Variance	Standard deviation	Statistic	Standard error
Cont	490	490	471.58	270	4136.89	64.31	11.94	-.17
Exp	465	465	462.39	233	1840.37	42.89	7.46	-.03

Considering that there is little difference between measures of central value (i.e. mean, median, and mode), and, more conclusively, since the size of the skewness ratio in both groups fell between -1.96 and 1.96, it can be concluded that the above distribution had the statistical normality assumption and the mean could be used as the best measure of central tendency in the area of parametric statistics. Therefore, an independent samples *t*-test was carried out to compare the means of both groups.

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Table 3 – *t*-test of the two groups' performance on the pretest

	Levene`s Test for Equality of Variance		*t*-test for Equality of Mean						
	F	Sig	*t*	Dr	Sig. (2 tailed)	Mean Difference	Std. Error Difference	95% Confidence interval of the Difference	
								Lower	Upper
Equal variance assumed	5.278	.25	.669	60	.506	9.192	13.735	-18.28	36.67
Equal variance not assumed			.653	47.782	.517	9.1923	14.086	-19.13	37.52

As Table 3 indicates, with the F value of 5.278 at the significance level of 0.25 being greater than 0.05, the variances between the two groups were not significantly different. Therefore, the results of the *t*-test with the assumption of homogeneity of the variances are reported here. Since the ρ value was 0.506 which is greater than 0.05, the conclusion is that there was no significant difference between the mean scores of the two groups at the outset. Hence, the researchers could rest assured that the two experimental and control groups manifested no significant difference in their reading prior to the treatment.

Furthermore, the reliability of the pretest administration was 0.852 through the Cronbach Alpha as shown in Table 4 below.

Table 4 – Reliability of the pretest

Cronbach's Alpha	N of Items
.852	50

Posttest

At the conclusion of the term, the same TOEFL reading comprehension used for the pretest was administered as the posttest. For administrative purposes, the obtained scores were converted to 20 (since this test had to also serve as the students' final test at the end of the university course). The descriptive statistics of this test is displayed below in Table 5.

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Table 5. Descriptive statistics of posttest TOEFL exam

Group	Measures of Central Value			Measures of Variability			Skewness	
	Mode	Median	Mean	Range	Variance	Standard deviation	Statistic	Standard error
Cont	18.50	18.50	18.32	10.50	6.09	2.46	.45	-.61
Exp	19.50	19.50	19.96	9	3.93	1.98	.34	-.22

Again, with the skewness ratio falling in the -1.96 and +1.96 range and the distribution of scores proving to be normal in both groups, a *t*-test was carried out on the above scores. But prior to this, the reliability index of the posttest administration was measured to be 0.836 (Table 6).

Table 6 – Reliability of the posttest

Cronbach's Alpha	N of Items
.836	50

The results of the *t*-test on the scores obtained on the posttest is displayed in Table 7 below.

Table 7 – *t*-test of the two groups' performance on the posttest

	Levene`s Test for Equality of Variance		*t*-test for Equality of Mean					95% Confidence interval of the Difference	
	F	Sig	*t*	Df	Sig. (2 tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variance assumed	.117	.733	-2.902	60	.005	-1.6421	.5659	-2.77	-.51
Equal variance not assumed			.2.861	53.67	.006	-1.6421	.5740	-2.79	-.49

As Table 7 indicates, with the F value of 0.117 at the significance level of 0.733 being greater than 0.05, the variances between the two groups were not significantly different. Therefore, the results of the *t*-test with the assumption of homogeneity of the variances are reported here. Since the ρ

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value was 0.005 which is smaller than 0.05, the first null hypothesis of this study was rejected meaning that portfolio development had been an effective strategy in advancing learners' reading comprehension throughout the treatment.

Motivation Questionnaire

Another variable under investigation was motivation. As described earlier, the Academic Motivation Questionnaire was administered at the end of the term. To estimate the reliability of the questionnaire, the Chronbach's alpha reliability was computed and the alpha coefficient came out to be 0.8261 (Table 8).

Table 8 – The reliability of the academic motivation questionnaire

Cronbach's Alpha	N of Items
.8261	60

After the administration of the questionnaire, the numerical values of intrinsic motivation were collected and analyzed. The descriptive statistics of this process appear in Table 9 below.

Table 9 – Descriptive statistics related to intrinsic motivation in two groups

Group	Measures of Central Value			Measures of Variability			Skewness	
	Mode	Median	Mean	Range	Variance	Standard deviation	Statistic	Standard error
Cont	108	100	97.78	62	216.02	14.69	2.77	-.64
Exp	120	116	112.64	63	187.64	13.69	2.58	-.42

With the distribution of the scores that were achieved by both groups being normal as indicated by the skewness ratio in both groups, an independent samples *t*-test was carried out on the above means to clarify whether a significant difference existed or not.

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Table 10 – *t*-test of the two groups' performance on intrinsic motivation

	Levene`s Test for Equality of Variance		*t*-test for Equality of Mean						
	F	Sig	*t*	Df	Sig. (2 tailed)	Mean Difference	Std. Error Difference	95% Confidence interval of the Difference	
								Lower	Upper
Equal variance assumed	.173	.679	-3.913	54	.000	-14.8571	3.7970	-22.47	-7.244
Equal variance not assumed			-3.193	53.73	.000	-14.8571	3.7970	-22.47	-7.243

As Table 10 indicates, since the F value of 0.173 at the significance level of 0.679 is greater than 0.05, the results of the *t*-test with the assumption of homogeneity of the variances are reported here. And as the ρ value was 0.000 which is smaller than 0.05 and higher scores were obtained for the experimental group (Mean = 112.64, SD = 13.69) compared with the control group (Mean = 97.78, SD = 14.69), which indicated higher intrinsic motivation for the portfolio assessment group compared with the control group. Thenceforth, the second null hypothesis of this study was rejected too: *concept map portfolio development does bear a significant effect on EFL learners' intrinsic motivation.*

To address the third and final hypothesis of this study, the scores of the subjects in both groups in terms of their extrinsic motivation was calculated. Table 11 shows the descriptive statistics.

Table 11 – Descriptive statistics related to extrinsic motivation

Group	Measures of Central Value			Measures of Variability			Skewness	
	Mode	Median	Mean	Range	Variance	Standard deviation	Statistic	Standard error
Cont	161	161	159.67	77	506.07	22.49	4.25	-.26
Exp	184	184	177.25	77	542.19	23.28	4.40	-.08

As displayed in the above table, higher scores were obtained by the experimental group (Mean = 177.25, SD = 23.28) compared with the control group (Mean = 159.67, SD = 22.49). Resting assured of the normality of both

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distributions (skewness ratios falling in the safe margin), an independent samples *t*-test was carried out on the above data (Table 12).

Table 12 – *t*-test of the two groups' performance on extrinsic motivation

	Levene`s Test for Equality of Variance			*t*-test for Equality of Mean						
	F	Sig	*t*	Df	Sig. (2 tailed)	Mean Difference	Std. Error Difference	95% Confidence interval of the Difference		
								Lower	Upper	
Equal variance assumed	.297	.588	-2.87	54	.006	-17.5714	6.1187	-29.84	-5.30	
Equal variance not assumed			-2.87	53.94	.006	-17.5714	6.1187	-29.84	-5.30	

The F value of 0.297 at the significance level of 0.588 is greater than 0.05 (Table 12) and since the ρ value of 0.006 being reported here with the assumption of the equality of variances is smaller than 0.05, the third and final null hypothesis of this study was rejected too meaning that *portfolio development of concept maps does bear a significant effect on EFL learners' extrinsic motivation.*

Conclusion

Portfolio development which includes information regarding the process of learning was found to be very useful in increasing learners' reading comprehension and also enhancing their motivation. This is because compiling portfolios creates a sense of achievement, enthusiasm, self-belief, self-satisfaction, and deeper learning processes since intrinsically motivated learners attribute their educational results to internal factors. These internal are factors help learners control the amount of effort they put in and enable them to believe they can be effective agents in reaching desired goals and make them more interested in mastering a topic, rather than just rote-learning to achieve good grades.

One major implication of portfolio development for language learners is that students often do not understand their own learning processes and need

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practice with learning strategies that will help them develop their learning and thinking abilities. Once students develop more complex learning strategies, they are then better prepared to think critically and analytically about the specific content they are learning. Therefore, it could be stated that when students use portfolios, they assume more responsibility for their learning, better understand their strengths and limitations, and learn to set goals. In short, portfolios allow students to think critically, and become active, independent, and self-regulated learners (Blackburn & Hakey, 2006; Riedeinger, 2006; Vucko, 2003; Perry, 1998; Mills-Courts & Amiran, 1991, all cited in Abrami, Wade, Pillay, Aslan, Bures, & Bentley, 2008).

The findings of this study can be important for language teachers because students' portfolios can contribute to a deeper understanding of their academic achievement. Language teachers can create classroom environments that motivate students and encourage learner autonomy and self-efficacy. Since the result of this study showed that portfolio assessment is related to language learning, language teachers need to focus on establishing appropriate contexts for the development of learner portfolios. This can be done through creating a non-threatening environment in which the final exam is not the most important criterion for passing judgments on the language abilities of learners. When students become aware that what matters to the teacher is learning as an end in itself and the teacher considers gradual personal progress over time to be a measure of success, they will gradually accept portfolio development as part of the measurement of their success.

Teachers should be aware that the greatest overall benefit of portfolio development is that the students are taught to become independent thinkers, and the development of their autonomy as learner is facilitated.

Facing waves of new measures in education, apparently, many teachers cling to old practices and do not attempt anything unfamiliar. Language teachers should note that as Dysthe and Engelsen (2004) have stated, there is an unexploited potential in portfolios used both as a learning tool and as an assessment tool. Now what they need most is a feasible model: a portfolio combining multiple approaches to instruction and assessment, plus (most important of all) one that motivates students and improves their learning.

It can be concluded that portfolio assessment simply needs to be seen in terms that recognize its own strengths and differences from other methods, and as a complement rather than a replacement of any other assessment method and procedure.

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Overall, this study corroborated the findings of previous studies (Chen, 1999, 2000; Hsieh, 2000, cited in Chen, 2006) that portfolios are a dynamic device to facilitate learning and develop ownership in addition to fostering students' motivation (Genesee & Upsher, 1996; Nezakatgoo, 2005; Song & August, 2002).

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Appendix

Academic Intrinsic Motivation

Read each question carefully and choose the number that best describes you. There are no right and wrong answers, simply choose 1, if the sentence does not describe you at all; 7, if the sentence strongly describes you. If you describe yourself as somewhere in the middle, please rate yourself accordingly.

1. I want to learn everything I need to learn. (Need)

                    1   2   3   4   5   6   7

2. Finishing an exam first leaves me afraid that I did something wrong or forgot something. (Fear)   1   2   3   4   5   6   7

3. No matter how much I like or dislike a class, I still try to learn from it. (Mas)

                    1   2   3   4   5   6   7

4. When faced with a difficult test, I expect to fail before I expect to do well. (Fear)

                    1   2   3   4   5   6   7

5. I sign up for the same classes that my friends sign up for. (Peer)

                    1   2   3   4   5   6   7

6. I feel that challenging assignments can be great learning experiences. (Mas)

                    1   2   3   4   5   6   7

7. College helps me to gain valuable knowledge. (Mas)

                    1   2   3   4   5   6   7

8. My quality of performance is dependent on my grade in the class. (Mas)

                    1   2   3   4   5   6   7

9. Academics are the last thing that I want to talk about when hanging out with my friends. (Peer)-R   1   2   3   4   5   6   7

10. When I receive a low grade on an exam, I try to hide it from others. (Peer)

                    1   2   3   4   5   6   7

11. I feel good about myself when others do not understand material that is clear to me. (Pow)   1   2   3   4   5   6   7

12. I learn simply for the sake of learning. (Mas)

                    1   2   3   4   5   6   7

13. When I have to make an academic choice, I go to my parents for advice. (Auth)

                    1   2   3   4   5   6   7

14. I prefer difficult tasks as opposed to moderate tasks. (Pow)-R

                    1   2   3   4   5   6   7

15. I never boast about my grades. (Pow)-R

                    1   2   3   4   5   6   7

16. I am not one of the smartest students in my class. (Pow)-R

                    1   2   3   4   5   6   7

17. I am satisfied with an average grade as long as I learn from my mistakes. (Pow)

                    1   2   3   4   5   6   7

18. I sign up to take the easiest teacher so that my grades will be better. (Pow)

                    1   2   3   4   5   6   7

19. I feel helpless about school after receiving a few bad grades. (Pow)

                    1   2   3   4   5   6   7

20. I have no preference to impress "power figures". (Auth)-R

                    1   2   3   4   5   6   7

21. Finishing an exam quickly makes me feel good. (Pow)

                    1   2   3   4   5   6   7

22. I work best in a group environment. (Need)-R

                    1   2   3   4   5   6   7

23. I do all that I can to make my assignments turn out perfectly. (Need)

                    1   2   3   4   5   6   7

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24. I feel more accepted by others when I receive a good grade on a test. (Peer)
                            1   2   3   4   5   6   7

25. I sign up for the classes that will prepare me for the future. (Need)
                            1   2   3   4   5   6   7

26. I have high expectations of myself. (Need)
    1   2   3   4   5   6   7

27. I see myself as well-informed in many academic areas. (Mas)
    1   2   3   4   5   6   7

28. I get frustrated when I find out that I did not need to study as much as I did for a test. (Need)   1   2   3   4   5   6   7

29. Sometimes I do more than I have to for an assignment to help me understand the material better. (Mas)   1   2   3   4   5   6   7

30. I find my ability to be higher than most of my peers. (Pow)
    1   2   3   4   5   6   7

31. I enjoy learning about various subjects. (Mas)
    1   2   3   4   5   6   7

32. Being in college gives me the opportunity to prove to my family that I can achieve something. (Auth)   1   2   3   4   5   6   7

33. I wait till the last minute to complete my assignments. (Need)-R
    1   2   3   4   5   6   7

34. I would only sign up for a club if it helped me to reach a long-term goal. (Need)
    1   2   3   4   5   6   7

35. I feel ashamed when I receive a low grade. (Fear)
    1   2   3   4   5   6   7

36. I have no problem telling my parents when I receive a bad grade on an exam. (Auth)-R   1   2   3   4   5   6   7

37. I feel that my ability is sufficient in the classroom. (Fear)-R
    1   2   3   4   5   6   7

38. Even when I have studied for hours, I don't feel that I have studied enough.(Fear)
    1   2   3   4   5   6   7

39. I get nervous when my professor begins to hand back tests. (Fear)
    1   2   3   4   5   6   7

40. I enjoy challenging tasks. (Fear)-R
    1   2   3   4   5   6   7

41. I get frightened that I will not remember anything when I take a test. (Fear)
    1   2   3   4   5   6   7

42. In my studies, I set short term, goals. (Fear)
    1   2   3   4   5   6   7

43. I have no doubts that I will achieve my academic goals. (Fear)-R
    1   2   3   4   5   6   7

44. My academic interests are not influenced by anyone but myself. (Auth)-R
    1   2   3   4   5   6   7

45. It is important to complete assignments the way that my professor would want them completed. (Auth)
    1   2   3   4   5   6   7

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46. It does not bother me when others perform better than I on a test. (Pow)-R
                1   2   3   4   5   6   7

47. When I do poorly on an exam, I feel that I let my professor down. (Auth)
                1   2   3   4   5   6   7

48. I feel good about myself when I finish a difficult project. (Need)
                1   2   3   4   5   6   7

49. I like to spend time reading about things that interest me. (Mas)
                1   2   3   4   5   6   7

50. I try to live up to what my professor expects out of me in the classroom. (Auth)
                1   2   3   4   5   6   7

51. I try to do my best on every assignment. (Mas)
                1   2   3   4   5   6   7

52. I like to be one of the most recognized students in the classroom. (Peer)
                1   2   3   4   5   6   7

53. I sign up for the same classes that my friends sign up for. (Peer)
                1   2   3   4   5   6   7

54. I have the same attitude toward college as my friends. (Peer)
                1   2   3   4   5   6   7

55. I study best when I am alone.(Peer)-R
                1   2   3   4   5   6   7

56. I still want to go to class even when my friends don't go. (Peer)-R
                1   2   3   4   5   6   7

57. I feel that the smarter I am, the more accepted I will be by other students. (Peer)
                1   2   3   4   5   6   7

58. My grade point average is no where near the grade point average as my friends. (Peer)-R   1   2   3   4   5   6   7

59. I feel that I should be recognized when I demonstrate my abilities in the classroom. (Auth)   1   2   3   4   5   6   7

60. I set high goals for myself. (Need)
                1   2   3   4   5   6   7