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The Interplay between Reflective Thinking and Language Achievement: A Case of Iranian EFL Learners

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Abstract

The present study aims at exploring the relation of EFL learners' reflective thinking attitudes and language achievement (GPA). The association of the learners' reflective thinking styles with their educational levels as well as their gender, were also estimated. To this end, 196 students from universities of Gonabad and Mashhad, two cities in the Northeast of Iran, took part in this study. The data were analyzed using descriptive statistics and correlational analysis. The results indicated among the comprising factors of reflective thinking, understanding receives the highest mean, followed by reflection and critical reflection. Habitual action, on the other hand, has the lowest mean score. Moreover, the highest correlation is observed between UND and language achievement (GPA). The second higher correlation was found between REF and GPA, followed by CREF and GPA. It was also found that there is a significant negative correlation between HA and GPA. According to the results, MA students achieved higher mean scores in UND, REF, and CREF but lower mean scores in HA in comparison with their BA counterparts. Regarding their reflective thinking, there are no significant differences between males and females. The findings of the present study may redound to the benefit of teacher educators, administrators, policymakers, and teacher training courses (TTC), teacher educators, administrators, and policymakers.

Keywords: *EFL Learners, Reflective Thinking, Language Achievement (GPA), Understanding (UND), Reflection (REF), Critical Reflection (CREF), Habitual Action (HA)*

Introduction

Reflection as an umbrella concept is applied to gain a better understanding of the relatively complicated world. That is, reflective thinking pinpoints effective paths for stopping, stepping back, and thinking deeply in the place of just merely accepting. In the information age and the fast speeding world, Huitt (1998) pinpointed that thinking plays a significant role in individuals'

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achievement. In Huitt's view, these changing conditions require new outcomes, such as critical thinking and reflective thinking, which are associated with higher-order thinking skills to be embarked upon as a focus of schooling.

Reflection provides students a useful lens into analyzing and evaluating their learning processes. It helps them to monitor their development from the lower state to the experienced professional ones. In other words, reflection enables learners to be aware of where they are at the beginning and then decide what to do to improve in the future. The term 'reflection' or 'reflective thinking' may be credited to the work of John Dewey (1933, p.9). He defined it as "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the conclusion to which it tends" (as cited in Phan, 2007).

Leafing through the literature on reflective thinking underpins Schön's influential role as well as Dewey (Gencer, 2008). Dewey approached reflective thinking from a philosophical viewpoint; Schön approached it from an application perspective. Schön admitted Dewey's views of problem-solving, questioning, and thinking, then attempted to establish a link between reflection and action. Dewey(1993) assessed reflective thinking as an active and evolving way of thinking. In his view, reflective thinking is a process to remember, think over, and assess any experiences. Moreover, Loughran (1996) characterized reflective thinking as including phases such as claim, problem, hypothesis, reasoning, and testing. Atay (2003) described reflective thinking as a process, and characterized this processas "remembering, thinking over and assessing with a particular purpose of any experience" (p. 54). Loughran (1996), on the other hand, described reflective thinking with phases such as claim, problem, hypothesis, reasoning and testing(p.13).

Furthermore, there were definitions given by Boud, Keogh, and Walker (1985) as well as BoydandFales(1983),whichareconsistentwithDewey'sdefinition. Reflection in the context of learning is a generic term that motivates learners to explore their experiences to gain new understandings and appreciations (Boud, Keogh, & Walker, 1985, p. 19).

Therefore, reflection provides learners a useful lens to analyze and evaluate their learning progress. Boyd &Fales (1983) stipulated reflective learning as the process of internally examining and exploring an issue of concern accompanied by an experienced, results in a changed conceptual perspective as far as it creates and clarifies meaning in terms of self (p. 100). It is worth emphasizing that, in Dewey's words (1933) reflective thinking involves (1) a state of doubt, hesitation, perplexity, mental difficulty, in which thinking originates, and also (2) an act of searching, hunting, inquiring, to find material that will resolve the doubt, settle and dispose of the perplexity (p.12).

In the same line of inquiry, Mezirow (1998), extending the work of Dewey, argued that critical reflection involves a change to personal beliefs. Thus, critical reflection empowers students to think critically about their own learning. Reflective thinking as an eye-opening and informative device is beneficial in the learning processes, because it enables students to go into the depth of activities, or in another word to investigate the reasons of any experiences. Keyto this discussion, Chaffee (1985) maintained that meaningful education equips learners with the tools necessary to understand thoroughly the world they are in. Taking a similar path, Dewey (1933) suggested that helping learners to acquire habits of reflection which engage them in the careful consideration and actions. That is, reflective thinking encourages and guides the learning processes.

The benchmark of successful learning is to nurture and motivate the process of thinking critically and reflectively (Ivie, 2001; Henderson-Hurley, & Hurley, 2013; Heydarnejad, Ebrahimi, & Najjari, 2018). It is a fundamental prerequisite of successful education that learners feel

responsible for their thinking process and to develop reasonable criteria for analyzing and evaluating their thinking. In this regard, Dewey (1933) notated that every person has to learn how to think well, particularly how to gain general habits of reflecting.

In light of the existing literature and according to the definitions of critical thinking and reflective thinking, it is believed that these two concepts are related. Reflectivethinkingis considered as a part of critical thinking's analyses and decision-making process (Houston Independent School District, 2012). Alongside, Dewey (1933) defined reflection as a form of freedom from routine behavior. In his view, reflection empowers everyone to plan according to direct activities with foresight and to act in deliberate fashion (p.17).

In Mezirow's view (1998), there were two levels of reflective action. The lower or less critical level was sub-divided into content and process reflection. Dewey (1933) used the term critical reflection to refer to deeper, more thoughtful, and more profound reflection. Mezirow (1998) extended the work of Dewey, argued that critical reflection involves a change to personal beliefs. A glance through literature shows that the work of Marton and Säljö (1976) was the origin of studies on student's approaches to learning (SAL). They identify two major categories of approaches to learning: deep and surface. Those students who may adopt a deep approach, go into a deeper understanding of the meaning and link it to their prior knowledge and personal experience. On the other hand, those who may take a surface approach, get merely information without any further analysis (Murphy & Tyler, 2005; Ivie, 2001).

In attempts to clarify the meaning of reflective thinking, Mezirow (1977, 1991, & 1998) theorized the four stages of reflective thinking. They are habitual action, understanding, reflection, and critical reflection. A mechanical and automatic activity that is not accompanied by conscious thought is habitual action. Habitual action includes action which is done regularly or usually as a habit, often with little conscious thinking about it. Put it another way, Schön (1983) called this type of behavior knowing-in action. Understanding happens when learning occurs without relating to other situations. Accordingly, Bloom (1979) defined comprehension as "understanding without relating to other situations." The third stage, reflection, is active, conscious, and careful consideration of any information. Mezirow (1991) called reflection as validity testing. The higher level of reflective thinking is Critical Reflection.

Leafing through the empirical studies in the reflective thinking domain mirrors increasing attention towards reflective thinking in recent years. For instance, Phan (2007), in his empirical study, examined the relationships between university students' approaches to learning, academic self-efficacy beliefs, reflective thinking, and academic performance. The results highlight possible sources of reflective thinking and generally reveals the contributions of learning approaches and self-efficacy to predicting different stages of reflective thinking.

In like manner, Ruwang and Wen lin (2007) examined elementary science methods course that facilitates the identification and description of the changes in students' conceptions and understanding of inquiry teaching, and the cultural influences, reflections, and situational factors influencing these changes. They found out that learners' active involvement in explicit evaluation tasks leads to more success in understanding the intended concept.

Considering the salient role of reflective thinking in successful learning, this study aimed to delve into this crucial construct in the domain of English as a foreign language in Iran. In so doing,

the following research questions were posed and investigated in the present study:

RQ_1. Does university students' reflective thinking have any significant role in their academic achievement?

RQ_2. Is there any relationship between university students' reflective thinking attitudes and their educational level?

RQ_3. Is there any relationship between university students' reflective thinking attitudes and their gender?

METHOD

Participants

The participants of the study were 196 university students from Gonabad and Mashhad, two cities in Northeast of Iran. They were 75 male and 110 female (11 participants did not specify their age) with an age range of 18 to 26 (6 participants did not specify gender). They were seniors and juniors who were studying English Literature, English Teaching, and English Translation in Gonabad and Mashhad universities.

Instruments

Reflective thinking questionnaire (RTQ)

To assess reflective thinking, the RTQ developed by Kember, Leung, Jones, and Loke (2000) was utilized. It contains 16 items that measure four types of reflective thinking: habitual action, understanding, reflection, and critical reflection. According to Leung and Kember (2003), the reliability estimates range from .58 to .74 for the four subscales of the RTQ. The items are answered on a seven-point scale from 1 (''definitely agree'') to 7 (''definitely disagree''); for instance, ''When I am working on some activities, I can do them without thinking about what I am doing.'' (Habitual action), ''I need to understand the material taught by the teacher to perform practical tasks.'' (Understanding), ''I sometimes question the way others do something and try to think of a better way.'' (Reflection), and ''As a result of this course, I have changed my normal way of doing things.'' (Critical reflection). In this study, the reliability of the components of reflective thinking was acceptable, too.

Procedure and Data Collection

The current study was carried out in two universities in Gonabad and Mashhad between November and December 2018. Out of 220 distributed questionnaires, 196 answers returned to the researchers. The university students voluntarily took part in the study. They were also asked to indicate their grade point average (GPA) on the questionnaires. To ensure reliability, the participants' questionnaires were coded numerically, and they were asked to complete the questionnaire anonymously. As an incentive, the participants were allowed to receive feedback about their performance on the instruments by presenting their codes.

Results

Table 1 presents descriptive statistics of EFL learners' reflective thinking comprising four components and language achievement (GPA). As the table shows, among the comprising factors of reflective thinking, understanding (M=13.95, SD=3.47) has the highest mean followed by reflection (M=13.30, SD=3.26). Habitual action (M=10.17, SD=2.64) receives the lowest meanscore.

Table 1
Descriptive Statistics of Reflective Thinking and GPA

	Min	Max	Mean	SD
Habitual Action	5.00	16.00	10.1731	2.64249
Understanding	5.00	20.00	13.9551	3.47775
Reflection	6.00	20.00	13.3013	3.26747
Critical Reflection	5.00	20.00	12.5513	2.79237
GPA	13.00	18.25	16.3462	1.20599
Valid N (listwise)	196			

To see whether these observed differences among the four components of reflective thinking are statistically significant, a one-way *ANOVA* was applied to the data.

Table 2
The Results of One-Way ANOVA for Determining Differences among the Components of Reflective Thinking

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1275.543	3	425.181	45.291	.000
Within Groups	5820.442	620	9.388		
Total	7095.986	623			

As Table 2 indicates, there are significant differences between the four subscales of reflective thinking (F= 45.291, p<0.05).

The *ANOVA* analysis revealed that among the four components of reflective thinking, there is a difference somewhere among the means, but the precise location of differences is not clear. To locate the exact place of differences, a post-hoc comparison of the means was run for the five dimensions. In so doing, a Scheffe's test was utilized. Table 3 displays the results of Scheffe's test.

Table 3
The Scheffe's Test for Determining the Location of Difference across the Four Reflective Thinking

(I) VAR00002	(J) VAR00002	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					L_Bound	U_Bound
HA	UND	-3.78205*	.34692	.000	-4.7545	-2.8096
	REF	-3.12821*	.34692	.000	-4.1007	-2.1557
	CREF	-2.37821*	.34692	.000	-3.3507	-1.4057
UND	HA	3.78205*	.34692	.000	2.8096	4.7545
	REF	.65385	.34692	.315	-.3186	1.6263
	CREF	1.40385*	.34692	.001	.4314	2.3763
REF	HA	3.12821*	.34692	.000	2.1557	4.1007
	UND	-.65385	.34692	.315	-1.6263	.3186
	CREF	.75000	.34692	.198	-.2225	1.7225
CREF	HA	2.37821*	.34692	.000	1.4057	3.3507
	UND	-1.40385*	.34692	.001	-2.3763	-.4314
	REF	-.75000	.34692	.198	-1.7225	.2225

*. The mean difference is significant at the 0.05 level.

The results of the post hoc Scheffe's test revealed that at the level of 0.05, there was a significant difference between HA, UND, REF, and CREF. The mean scores of UND is significantly different from those of HA and CREF but not from that of REF. The mean scores of REF is significantly different from that of HA but not from mean scores of UND and CREF. The mean scores of CREF are significantly different from HA and UND but not from that of REF.

To examine the relationship between reflective thinking and language achievement, Pearson product-moment correlation was run. The correlation coefficients among EFL learners' reflective thinking and language achievement (GPA) are presented in Table 4. As it can be seen, the highest correlation is observed between UND and GPA ($r = 0.566$, $p < 0.05$). The second higher correlation was found between REF and GPA(r=0.477, p<0.05), followed by CREF and GPA ($r = 0.477$, $p < 0.05$). It was also found that there is a negative significant correlation between HA and GPA ($r = -0.327$, $p < 0.05$).

Table 4
The Correlation Coefficients between Reflective Thinking (Habitual action, Understanding, Reflection, Critical Reflection) and GPA

	HA	UND	REF	CREF	GPA
1. HA	1.00				
2. UND	-.621**	1.00			
3. REF	-.57**5	.949**	1.00		
4. CREF	-.604**	.818**	.778**	1.00	
5. GPA	-.327**	.566**	.477**	.444**	1.00

**Correlation is significant at the level of 0.05

TodelvemoreintoEFLlearners' reflective thinking, the association of each thinking style with learners' demographic variables, such as gender and educational level, was estimated.

The following table shows the descriptive statistics of thinking styles across two educational levels: 1) BA and 2) MA.

Table *5*
Descriptive Statistics of Reflective Thinking across BA and MA University Students

	Level	N	Mean	Std. Deviation	Std. Error Mean
HA	1.00	71	11.5915	2.44118	.28971
	2.00	85	8.9882	2.19031	.23757
UND	1.00	71	11.0986	2.51370	.29832
	2.00	85	16.3412	2.09622	.22737
REF	1.00	71	10.6197	2.20627	.26184
	2.00	85	15.5412	2.11881	.22982
CREF	1.00	71	10.6479	2.23670	.26545
	2.00	85	14.1412	2.14450	.23260

As the table indicates, BA students obtained higher mean scores in HA but lower mean scores in the other three thinking styles in comparison with their MA counterparts. To see if these differences are significant statistically, independent-samples t-test among the participants of the two groups were run. Table 6 represents the results of the t-test.

Table 6
Independent-Samples T-Test Displaying the Results of Level Differences in Reflective Thinking

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
HA	7.016	154	.000	2.60331	.37103
UND	-14.206	154	.000	-5.24258	.36905
REF	-14.178	154	.000	-4.92146	.34712
CREF	-9.935	154	.000	-3.49329	.35160

As can be seen, there is a statistically significance between the two groups regarding their reflective thinking as follows: HA (t=7.01, p<0.05), *UND* (t=-14.20, p<0.05), *REF* (t=-14.17, p<0.05), and CREF (t= -9.93, p<0.05). In other words, it was confirmed that MA students enjoy higher levels of reflective thinking in terms of understanding, reflection, and critical reflection.

An identical analysis was run for the role of gender in each thinking style. Table 7 presents the descriptive statistics of thinking styles genders: 1) female and 2) male.

Table7
Descriptive Statistics of Reflective Thinking across Male and Female University Students

	Level	N	Mean	Std. Deviation	Std. Error Mean
HA	1.00	102	10.1961	2.4171	.23933
	2.00	54	10.1296	3.0470	.41466
UND	1.00	102	13.9412	3.4807	.34464
	2.00	54	13.9815	3.5046	.47692
REF	1.00	102	13.2157	3.2658	.32377
	2.00	54	13.4630	3.2950	.44839
CREF	1.00	102	12.4804	2.7457	.27187
	2.00	54	12.6852	2.8977	.39460

As the table indicates, male and female students' scores on reflective thinking are quite cole to each other. To investigate if these slight differences are significant statistically, independent-samples *t*-test among the participants of the two groups were run. Table 8 represents the results of *t*-test.

Table 8
Independent-Samples T-Test Displaying the Results of Gender Differences in Reflective Thinking

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
HA	.149	154	.882	.06645	.44612
UND	-.069	154	.945	-.04031	.58717
REF	-.449	154	.654	-.24728	.55131
CREF	-.435	154	.664	-.20479	.47117

As can be seen, there are no significance differences between males and females regarding their reflective thinking as follows: HA (t= .149, p<0.05), *UND* (t= -.069, p<0.05), *REF* (t= -.449, p<0.05), and CREF (t= -.435, p<0.05).

Discussion

The current study examined EFL learners' reflective thinking, which comprises four components (habitual action, understanding, reflection, and critical reflection) and their language achievement (GPA). As the results showed, among the comprising factors of reflective thinking, understanding has the highest mean score, followed by reflection and critical reflection. Habitual action received the lowest mean score. A rigorous and reflective learner is a responsible thinker. He or she applies a certain ethical stance that is habitual skepticism and a recognition that is getting to the depths of things. This learner attempts to take out of the comfort zone of habitual action. Habitual action is an automatic mechanical routine and procedure, demanding no attempt to be made to understand the contents acquired.

On the other hand, reflection and understanding are formed from a deep learning approach. Reflective thinking implies that learners should overcome fears and uncertainties to evaluate their practice in order to make meaningful changes critically. Key to this discussion, Dewey (1933) considered reflection as a form of freedom from routine behavior that emancipates us from merely impulsive and merely routine activities. It enables people to direct their activities with foresight, to plan according to ends-in-view or purposes of which they are aware, and to act deliberately and intentionally, to know what they are about when they act (p. 17).

The quality of a person's learning is directly affected by the quality of their thinking about learning. As the results show, the ability to analyze and critique information at a high- order level is seen more between the university students than school students. This is because university students build a stronger understanding of the core concept of learning than school students, and they escape automatic mechanical and habitual learning. They realize the powerful role that thinking plays in their lives and assume more responsibility for their learning. To take command of the thinking skill that controls their lives, they reflect on their accomplishments and evaluate their actions. Consistent with existing research evidence, for university students, habitual action, which is not the result of a conscious choice, get the lowest mean score. University students feel more responsible for achieving a better and deeper understanding. Responsible university learners develop strategies to apply new knowledge to complex situations in their everyday activities. They actively attempt to make sense and find meaning in new experiences. Subsequently, they gain valuable insights that cannot be found in habitual actions. They are not like a school student to be told what to do and how to practice new subjects every session. For them, the professors have the role of facilitators and moderators. From the beginning of the term, they have given the syllabus, so the sense of being responsible leads them to try hard and not just depend on their professors and their teaching approaches.

According to the findings of this research, the difference between HA, UND, REF, and CREF is significant. The mean scores of UND are significantly different from those of HA and CREFbutnotfromthatofREF.Inlinewiththeresearchoutcomes,themeanscoresofREFis significantly different from that of HA. On the other hand, this difference is not significant from the mean scores of UND and CREF. Also, the result shows, the mean scores of CREF is significantlydifferentfromHAandUNDbutnotfromthatofREF.Asitisprovedinprevious studies, deeper understanding, and comprehension underpin much higher-order thought. University students try to learn and understand on a deeper level, which paved the way for reflection. University students have more opportunities to establish an appropriate mental set for reflecting. This is due to the nature of the physical environment in which reflection is expected to take place. They are not at the age of accepting anything without knowing the reason. They feel challenged enough to think

deeply about what they have learned and the connection between those ideas with their previous experiences and what they already know. Fully challenged and interested university students look beneath the surface of new subject material and engage in fuller understanding and improved thinking. Moreover, this ability to examine the bigger picture and view the situation more holistically empowers critical breadth (Lucas, 2012; Ghanizadeh & Heydarnejad, 2015; Heydarnejadetal., 2018). Infact, university students are more concerned about their understanding, their preparation for the future and more willing to question and critique. Critical reflection is a key component in the learning processes of learners, especially where there is rich learning possible through specific experiences.

The next finding of the research indicated the relationship between these components of reflective thinking and language achievement. It was shown that the highest correlation is observed between UND and GPA.The second higher correlation was found between REF and GPA, followed by CREF and GPA. It was also found that there is a significant negative correlation between HA and GPA. Based on the results, reflective thinking components influence a learner's effectiveness in language achievement. Among these components, as it was discussed before, understanding has the highest mean score followed by reflection, critical reflection, and finally, habitual action.

The use of appropriate language learning strategies often leads to improved proficiency or achievement (Thompson & Rubin, 1993; Pishghadam, Adamson, & Shayesteh, 2013; Ebrahimi, Khoshsaligheh, Behtash, & Heydarnejad, 2018; Heydarnejad, Ebrahimi, & Adel, 2019). Strategic learners have metacognitive knowledge about their own thinking and learning approaches and a good understanding of what a task entails (Chamot, 2004). University students feel more anxiety in modern society which is changing everyday and becoming more complex. This sense of anxiety helps them develop strategies to apply new knowledge to the complex situations in their everyday activities. As far as they are more concerned about their outcomes, they relate new knowledge to prior understanding and develop higher-order thinking skills. Their better understanding and analysis have clear relevance to their success and satisfaction with their language achievement. University students with high responsibility have this ability to orchestrate their learning strategies to fully understand and achieve more. As successful understanding paved the way for reflection, more effective language learners with an opportunity to step back and reflect about how a particular set of problem solving strategies is appropriated for achieving their goal gain more desirable outcomes. In addition, critical thinking enhances student learning and self-confidence (Lucas, 2012). When students learn better and have more self-confidence, they are more successful in their achievement. On the otherhand, habitual action which is not the result of a conscience choice, but rather something a person does out of habit is not a suitable way of learning. This kind of learning (if it can be called learning) does not lead to achievement.

The next finding of this research is that MA students use deep thinking styles: 'understanding', 'reflective', and 'critical reflective' thinking more frequently than BA students. That is, students with a higher educational degree (MA) tend to apply reflective thinking components more than students with a BA degree. HosseiniFatemi & Vahidnia (2014) stated that EFL learners might change attitudes in the transition from BA level to MA level. These changes in attitude can be followed by the change in their efficacy beliefs, level of motivation, and setting of goals. These

researchers believed social and environmental factors empower MA Iranian EFL learners to promote their motivation at higher levels of education. Every MA student must complete a minimum of 30 credit hours of coursework, and before graduating from the program must write a thesis. In this sense, MA students feel more challenged to shoulder the responsibility of their learning and, in turn, attain higher-order thinking styles.

The last finding of this research concerns gender differences in reflective thinking. No differences were observed across the four comprising factors of reflective thinking. That is, both male and female university students are concerned about their strategies for learning. They, both male and female university students, attempts to promote higher-order thinking skills, which in turn, facilitate higher-order learning skills.

Conclusion

Taken together, the findings of the present study have important implications for reflectivity on the part of the teachers. Farrell (2003) stipulated that reflective practice allows teachers to act in a deliberate critical manner, raises their awareness about teaching. He believed reflective practice enables deeper understanding and triggers positive changes. A teacher's involvement in reflective teaching improves students'ability to be critically reflective, an issue which seems fundamental in recent educational reforms (Yost, Sentner, & Frolenza-Baily, 2000; Heydarnejad et al., 2018). According to Dewey (1933), reflection leads to further students' and even teachers' growth. In sum, in teacher education programs, there should be an emphasis on teaching reflective thinking and its components, which in turn enhance the implementation of efficient teaching styles (Heydarnejad, Hosseini Fatemi, & Ghonsooli, 2017), and consequently, lead to learners' promotion. Also, to educate effective teachers, there is a need for in-service training courses on how to foster reflective thinking practices in classrooms.

Furthermore, the findings put forward the prospect of developing an educational environment that is more likely to encourage students to develop higher-order thinking, which leads to higher student achievement. Such an educational environment enhances students' perception of their abilities and improves student autonomy. This environment helps students to move beyond a primary concern of 'how' questions to 'what' and 'why' questions.

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Competing Interests

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