

The Impacts of Using Schema Awareness on ESP Learners' Self-Esteem and Attitudes; The Case Study of Using Schema Awareness in Technical English for Civil Engineering Students

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Abstract

According to the importance of technical English in universities, schema awareness can help learners to improve their knowledge about the technical English and enhance their self-esteem and attitude toward language learning which are challengeable for many ESP students. Due to the importance of schema awareness through activating the background knowledge, this study tried to investigate the impacts of schema awareness on attitudes and self-esteem of civil engineering students in technical English course in university. To do this end, 60 civil engineering students from Omran Tose'eh University (Hamedan, Iran) were selected in order to see whether schema awareness have any significant improvement on technical English score or no. Subsequently, the researchers conducted two group of experimental and control

group in which experimental one contained technical and useful information about subjects like surface tension, open channel hydraulics, engineering hydrology, reinforced and steel structures, and structural analysis through schema awareness. Therefore, the gain score of each learner from pre-test to post-test was evaluated through independent sample t-test to see if there is any significant improvement in technical English score of these ESP learners. After analyzing the results of learners, the findings revealed that there is much improvement in technical English score, if the learners taught through schema awareness. In another words, it can be concluded that schema awareness can improve the learners' technical English score or language proficiency in civil engineering field. ESP learners, ESP teachers, and curriculum and syllabus

designers can benefit from the results of this study.

Keywords: English as Specific Purposes, Schema Awareness, Attitude, self-esteem, Civil Engineering

1. Introduction

English as an universal language associates with role of mind and psychology for learning English as a Foreign Language (EFL) and also English for a Specific Purposes (ESP) fields (Setayesh & Marzban, 2017). According to this, ESP requires to pay attention to the language application ability and helping its learner to improve their major knowledge in better way. Through the process of language learning in ESP learners, students experience many psychological challenges such as lack of attitude, shyness, self-esteem or even linguistic challenges (Yu, 2020; Bosco et al, 2020). According to Arnold (1999), personality factors, beliefs, attitudes, the ambiance of the classroom, shyness, or the quality of classroom interaction may help or hinder learning on language learners.

In order to solve these kinds of problems which can be improved through psychological implementation, many methods and treatments were suggested by scholars (Bosco et al, 2020; Hosseini & Shokrpour, 2019; Pudyastuti & Sari, 2016). For instance, recent works in this fields suggest that teacher should pay attention to the mental activities and the role of mind

and background knowledge in process of teaching and learning (Hassan, Akhatar, & Khan, 2020; Chen et al, 2019; Musa, 2017). With respect to this, many scholars advised that schema awareness can play critical role in the language learning process (Graziano, 2019). To put it clearly, schema theory which is the consideration of the role of schema and the role of background knowledge in language learning can presents effective ways for ESP or EFL learners to recover or create meaning from their personal previously acquired knowledge (Cai & Wu, 2020; Tan et al, 2017). In addition to this, Schema awareness describes how perception is changed and influenced by people's subsisting information (Rumelhart, 1977). Within the schema-theoretic framework, the process of learning is guided by the principle that all new information is sampled against existing schema (Zhang, 2016). Although there are numerous number of investigation in the field of schema awareness, examination to examine how schema awareness can influence the psychological behaviors of ESP learners (Keshmirshekan, 2019; Farangi and Saadi, 2017). Due to this, the present study investigated and modified the impact of schema awareness as an effective factor in language learning and consider possible effects on learners' attitude, and self-esteem of ESP learners who learn English in their

technical English course for engineering fields.

Therefore, with predicting and estimating the relationship between schema awareness attitude and self-esteem, we can provide a useful data for solving the problems of teaching and learning English in Iranian ESP learners, especially civil engineering students. In order to achieve the purpose of the study, the following research questions were raised:

Q1: Is there any significant impact schema awareness on attitudes of ESP learners?

Q2: Is there any significant impact of schema awareness on self-esteem of ESP learners?

2. Review of the Literature

Each of the variables studied in this study has a variety of research backgrounds that help understand them better. In this part of this study, each variable is elaborated in the field of research. Here the researcher reviews some concepts, definitions and studies related to schema awareness, attitude, and self-esteem.

2.1. Research on Schema Awareness

Schema awareness describes how perception is changed and influenced by people's subsisting information (Rumelhart, 1977). According to this approach, understanding a subject is an interactive manner between the text itself and the reader's earned background knowledge, which is arranged in complex constructions or "schemata" (Cai & Wu,

2020). During that process modifications are made to incorporate information not previously accounted for into the construction of prior knowledge (Keshmirshekan, 2019). This principle results in two modes of processing known as bottom-up (or text-based) and top-down (or knowledge-based) processing. Provided that the informing input that is recognized through bottom-up processing and the conceptual predictions that made through top-down processing are compatible, readers are said to have comprehend the texts. In case of a mismatch, the reader is forced to revise the interpretation in such a way as to do the two compatible once again.

Comprehension is, consequently, a difficulty of beginning, re-elaborating or creating a schema that implements a logical statement of the connections between the objects and functions declared in a conversation (Keshmirshekan, 2019). Schemata are, therefore, an important factor for comprehension. Nevertheless, it must be taken into account that not every student proposes a text with the related framework or schemata so that one person's understanding of a text may change from another's. The study carried out by Anderson et al. (1977) studying the influence of theoretical specialization on the understanding of two ambiguous texts clearly illustrates this point.

There are two categories of prior knowledge that have concerned researchers in recent times: knowledge of text structure or formal schemata and knowledge of text content or content schemata (Cao & Fu, 2019).

2.1.1 Formal Schemata

Some representation of L1 analysis has produced empirical confirmation that the eloquent combination of a text communicates including the reader's formal schemata to influence reading knowledge. This conclusion has been confirmed to be effective for both account (e.g. Rumelhart, 1977; Johnson 1977) and expository passages. In the area of L2, Carrell's (1983) analysis illustrates that when the content of a fiction is kept consistent, but the rhetorical structure changes, L2 comprehension, like L1 comprehension, is assumed. Furthermore, writers on contrastive rhetoric such as Kaplan (1966, 1976) have indicated the need to raise the learner's awareness of the rhetorical conventions of the target language. The evidence so far suggests that there are culture-specific thought patterns determining the structure of expository texts.

2.1.2 Content Schemata

The two main areas of research into content knowledge have been knowledge of a specific culture or subculture and knowledge of a specific subject, domain and/or discipline.

i) Culture-specific knowledge

Culture-specific knowledge comprises the shared knowledge and assumptions held by the destination language community regarding not only places, events, and institutions, but also attitudes, beliefs, and social conventions (Tan et al, 2017). The study has quite conclusively confirmed that former experience of the culture-specific knowledge presupposed by a subject changes the direction the subject is known (Steffensen et al., 1979).

An examination carried out by Gathbonton and Tucker (1971) described that EFL learners brought wrong opinions when reading different texts due to cultural disagreements. Similar outcomes have been reached at by further researches into this field (e.g. Johnson, 1984; Carrell, 1984b).

ii) Subject knowledge

Absence of content schemata may also occur independently of culture specificity. People belonging to the same culture group may differ greatly in their background knowledge in certain content areas (Tan et al, 2017).

2.1.3 Second Language Learners and the Activation of Schemata

As pointed out by Carrell (1984), among others, cultural specificity of texts indicated that teachers must be sensitive to potential comprehension difficulties which ESL/EFL readers may encounter with a text due to a lack of familiarity with the culture-specific content the text presumes. Therefore,

teaching L2 students to read is not achievable by simply choosing any text or reading materials and expecting the students to make sense out of them. ESL reading teachers should realize that the extent to which L2 readers are familiar with the content of the text has a large impact on their reading comprehension. Carrell (1984a, 1984b) indicates that ESL/EFL teachers should also work on minimizing their students' reading difficulties by providing them with familiar contents that include relevant cultural information. The selected reading materials must activate students' relevant schemata which will then lead to a better understanding of what is being read. Carrell (1984a), Williams (1984), and other researchers showed that ESL reading comprehension may be affected not because the ESL readers lack the appropriate schema, but because they fail to activate it. For the teacher, then, the importance of background knowledge has three main implications: first, the teacher must take into account the knowledge on which any written text is based. Second, if a reader is not actively using his/her background knowledge, a significant part of the reading process is not taking place. Third, teachers should have as their principal objective the development of problem-solving, creative, interpretive strategies in which the students can exploit whatever knowledge or resources they may have. Teachers, therefore, in teaching

students to activate and use their background knowledge, are helping them to become better readers.

All of this leads us to the importance of how to take content schema into consideration in our teaching. Williams (1984) gives three phases – which he calls the pre-reading phase, the reading phase, and the post-reading phase – for teaching reading comprehension. Of these, the most important for building background knowledge is the first, pre-reading phase where the instructor has the opportunity to use pictures, slides, movies, games and other such devices to activate and build upon the students' schema. In this phase, students might also be asked to write about their knowledge of the subject and, after writing, discuss their knowledge with other students. In the second phase, reading, the students read about the subject. In this way they continue to build upon their own existing schema. Each time they read on the same subject, their knowledge of the subject becomes greater. Then, through the activities of the third, post-reading phase, they students integrate this background into a new schema structure.

2.2. Attitude in Language Learning

Attitude is a psychological concept used to “demonstrate the way and endurance of human behavior” Baker (1992, p.10). Baker (1992) mentioned that the word has Latin and Italian origin and it applies to tend to the specific activity. Chaiklin (2011),

revealed that observational investigation on attitude can be necessary for social sciences and humanities because attitude can influence many other factors like desire and motivation toward doing something.

Moreover, attitude was also described as a cognitive idea. Lanos (2014) reported on prior analysis of the characteristics of the philosophical nature of attitudes. She declares that attitudes having a cognitive concept are in the form of information. Besides, Smith (1996) specifies this knowledge as schemas, beliefs, and conventions. These schemas as Lanos (2014) highlights can be initiated in the required context. Being a form of knowledge, this cognitive attribute to attitudes appears to implement the idea with a real presence in the human mind. Therefore, the attitude seems to be a need for an object to base one's schemata about something. According to recent analysis (Lanos 2014), language can be viewed as an object of attitude. Additionally, McKenzie (2010) defines that language attitude is an "umbrella term" that shows the ability of human to learn and use the language in an appropriate way. Consequently, the association of language attitude demands to be viewed from different angles. Baker (1992) emphasizes the importance of attitude in the language context stating, "the state, condition and significance of a language is most frequently and mostly

easily ... covered by attitudes to that language".

Lanos (2014) summarized the different meanings given to language attitude to come up with all the components included in one's attitude towards language. Some proposed explanations involve the social dimension of language which belongs to the language and its application in society; including the circumstances where it is practiced and its speakers. So in addition to the attitudes towards the language itself and its social dimension, there is also attitude towards the knowledge situation and language planning etc.

Some of the aspects of language were revealed to affect the attitude toward the language as an attitude object. For instance, McKenzie (2010, p.25) states that, "attitudes towards global languages such as English are likely to be strong". Another aspect of language attitude has to do with its stability and instability. In this respect, Lanos (2014) maintains that language attitudes may have a specific degree of stability, which provides for their classification, but can also replace. The consideration of attitudes towards language may need to be flexible enough to notice the potential change of these attitudes especially in ESP learners. There have been many investigations focusing on the attitudes of ESP learners in the past few years.

Brunton (2009) estimated the attitudes of learners who were hotel employees and studying ESP, stated that learners have an understanding attitude towards ESP because it has a 'informative connection towards their business'. Because in their view, ESP is universal in nature and it can present them a broad range of lexical details, practice in reading skills, awareness related to common themes and topics and command over speaking skills.

Moreover, Wei Tsao, & Fang, (2008) highlighted different critical view regarding ESP, is that learners and instructor may have assertive attitude towards ESP, if it changes in terms of objectives, materials and approaches from general English. Both the participants, learners and teachers, have positive attitudes towards ESP and recognize its significance as it integrates specialized terms and content with reference to the field. Martinović and Poljaković (2011) declared motivation and attitudes as an influential constituent within learning English for specific purposes.

2.4. Research on Self-Esteem

White (1959), Coopersmith (1959) and (1967), Rosenberg (1965) have been the principal subscribers to the community of the theoretical notion of self-esteem. Basically, their definitions point to three major elements or dimensions of self-esteem:

- Competence and worthiness.
- Cognition and impression.

- Stability and openness.

The analysis shows that all elements are included to a specific point and may change a person depending on personal characteristics and context features. Subsistence has been thought greatly under separate names (efficacy, success, etc.) and can be a significant control in school environments regarding academic performance (Cracker & Major, 1989). Developmental psychology puts the development of proficiency in middle childhood. On the other hand, worthiness happens in early childhood and comes basically from phylogenetic interpretation, for occurrence, when parents convince acceptance and approval after a child does something famously. Worthiness is making a decision about oneself. Both appearances exercise control on each other. Also, part of the research concerning the conceptualization of self-esteem has restricted consideration of whether to identify it as being related to thought or impression. Since evaluation is significantly affected in our sense of worthiness and capability, cognition is then a prime factor. However, neuro-scientific investigations have revealed that cognition and influence are distinct but inseparable (Heatherton & Polivy, 1991) and have stressed the connections between the neocortex, involved in thought and the limbic system which is related to sentiments. Finally, possibly the most

complex problem researchers have allowed on the conceptualization of self-esteem has been its dynamicity in terms of confidence or openness. In White's psychodynamic distance, most openness occurs during childhood and then self-esteem becomes relatively stationary, but still subject to change to a lesser degree. In that sense, self-esteem can alternate more than other stationary characteristics like personality and aptitude (Alrabai, 2017).

Arnold (1999) and many other researchers regard to the consequence of efficiency in the communication classroom and language training is an anxiety-provoking adventure for many learners (Muchnick and Wolfe 1982; Horwitz et al. 1991; MacIntyre and Gardner, 1991). As Horwitz et al (1991) note, the consequence of the difference between the "true" self as associated to the language learner and the more inadequate self as can be performed at any given time in the foreign language would seem to recognize foreign language anxiety from other academic concerns such as those connected with mathematics or science. Probably no other field of research involves self-concept and self-expression to the level that language learning does.

Generally conversing, self-esteem is one of the basic impulses in personal presences. When the level of self-esteem is below, the emotional homeostasis is troubled, creating uncertainty, fear, social background, and other negative circumstances. Self-esteem

can exercise a determining influence on a person's life, for good or bad; when there is very low self-esteem, this may even bring about a need for clinical practice. However, though in the circumstances of language learning low self-esteem is a non-clinical event, it can have serious consequences. Students may avoid taking the necessary risks to acquire communicative competence in the target language; they may feel profoundly troubled and even drop out of the class.

3. Methodology

As discussed in the previous chapters, this study was set out to identify the effects and influences of schema awareness on a self-esteem and attitudes of Iranian ESP learners. For this purpose, the methodology for measuring the variables can have a significant contribution in clarifying the results, which has been introduced in this section.

3.1. Participants

In this part, the demographic information of the participants of the study such as age, gender, education, and nationality are provided, in order to prevent any ambiguity in the collected data. Participants of this study included 60 male and female (32 male and 28 female) intermediate Iranian ESP learners who had enrolled in Technical English class in Omran Tose'eh University in Hamedan, Iran. The age range of the learners were 19-25 and all of them were the students of civil engineering in this

university and attended in the Technical English course. It should be noted that, all of these participants were selected through convenient sampling which is based on non-probability sampling, because researchers had access to them easily and they could find them in the mentioned university. After selecting the participants, the researchers divided them into two groups (Each of them=3) of experimental and control group through simple randomization.

3.2. Instruments

In order to answer the research questions, the following instruments were utilized.

3.2.1. Self-esteem Questionnaire

The Rosenberg Self-esteem scale with 10-items includes global self-esteem by mapping both positive and negative questions about the individuals and self-concept was used in this study. The computation is considered to be unidimensional. All the questions are returned using a 4-point Likert scale format ranging from strongly agree to strongly disagree. The Rosenberg Self-Esteem Scale is a generally used self-report instrument for evaluating individual self-esteem, and the results can be analyzed through item response theory.

3.2.2. Attitude Questionnaire

This study used Attitudes about Language Learning Inventory developed by Horwitz (1988) to assess the learners' beliefs about learning a foreign language and technical

English. The 36-statement employs a 5-point Likert-scale ranging from "strongly disagree" (1) to "strongly agree" (5). This instrument includes five dimensions: 1) the difficulty of language learning, 2) foreign language aptitude, 3) the nature of language learning, 4) learning and communication strategies, and 5) motivation and expectations. The validity and reliability of the study were checked in the study of Barton (2012).

3.3. Designs

Because the purpose of the present study was to investigate the effects of one variable on other variables, the research method used in this study was quasi-experimental with pretest-posttest design. The main intention of this study was to find out the impact of on independent variable, namely, schema awareness on a set of dependent variables (learners' self-esteem and attitude) in both group of experimental and control.

3.4 Data Collection Procedure

This study contained various phases:

In the first level, researchers divided the students into two groups of experimental and control group randomly. Then all students completed questionnaires that were given to them to assess their pre-test degree of attitude, and self-esteem.

In second level, the teacher used schema awareness strategies in experimental group. This steps can be summarized as follows:

Step 1: Before teaching, arouse students' interest by giving warm-up questions: How do you prefer to use technical English in your major? Why? How can we adopt and adapt the technical English in our English knowledge? In teaching subjects like surface tension, open channel hydraulics, engineering hydrology, reinforced and steel structures, and structural analysis, teacher tried to activate and use the learners' background knowledge by forming questions that can be listed as followings:

Have you ever seen open channels in North of the Iran?

Have you ever analyzed the structure of constructions such as dam, spill way, culvert or other structures?

How can we use engineering hydrology to improve our flood management or precipitation-runoff model?

How can we adopt stilling basin in

And etc.

After this warm up questions, teacher started to show the picture of subjects or main vocabularies of the reading comprehensions to build a mental image about the concepts. Again in this stage, teacher started to expand the knowledge or concepts by gathering information from learners in the classroom. Moreover, teacher tried to discuss the concepts and subjects with learners to shape their schema toward language vocabularies or technical English.

Step 2: Assistant with considering the top-down processing skill, tried to give the direction to the concepts by writing down the keyword like "culvert" or "open channel" on the blackboard. To activate existent schemata graduate students into groups to brainstorm the concepts. After brainstorming, teacher could elicit the information from a few students.

Step 3: To build up a general schema, then define keywords orally and in written texts. It should be mentioned that, the students of control group didn't receive any specific method for learning and they continued their classes in traditional way.

The last phase included giving the mentioned two questionnaires again to the students as post-tests to realize if there is any improvement in the experimental group's performance after treatment or not.

3.5. Data Analysis

Multiple independent-samples t-test for comparing gain scores of ESP learners' attitude from the pretest to the posttest indicated that there was a significant difference between the mean of gain of experimental group and control group. In other words, in order to answer the research questions, the responses of students to each variables' questionnaire in both pre-test and post-test was evaluated. The analysis was carried out through SPSS.

4. Results and Discussion

In this part of the study, the researcher tried to answer mentioned research questions

and reject or accept the hypothesis in following sections. First, to examine the potential effects of schema awareness on ESP learners' attitude across time, from the pretest to the posttest, one independent samples **t-test** was conducted on the gain scores (the deviation score), the difference between the pretest and the posttest of students in both experimental and control groups. The improvement (gain) from the pretest and to the posttest was estimated for each student by subtracting each person's posttest score from his or her pretest score.

It should be said that prior to independent samples t-test, the normality assumption was investigated, and that the skewness and kurtosis of the pretests and posttests in both groups were both between -2 and +2 (See Table 4.1 and Table 4.2). Therefore, the normality assumption of the independent samples t-test was satisfied. Furthermore, ESP learners' attitude was considered as a latent composite, so the means of students' responses to questions of this scale were calculated and used in the t-test.

Table 4.1 Descriptive Statistics of Experimental Group in Different Times of Testing of Attitude

	N	Mean	Std. D	Skewness		Kurtosis	
					Std.		Std.
	Statistic	Statistic	Statistic	Statistic	Error	Statistic	Error
EXPPre	30	12.49	3.19	-0.24	0.30	-0.66	0.60
EXPPos	30	17.06	3.80	1.40	0.30	0.77	0.60

Note: EXPPre = Experimental group attitude pretest score, EXPPos = Experimental group

Table 4.2 Descriptive Statistics of Control Group in Different Times of Testing of Attitude

	N	Mean	Std. D	Skewness		Kurtosis	
					Std.		Std.
	Statistic	Statistic	Statistic	Statistic	Error	Statistic	Error
CNTPre	30	12.22	3.16	-0.26	0.30	-0.64	0.60
CNTPos	30	13.47	3.59	0.17	0.30	-0.76	0.60

Note: CNTPre = Control group attitude pretest score, CNTPos = Control group attitude posttest score

The independent-samples t-test for attitude from the pretest to the posttest comparing gain scores of ESP learners' indicated that there was a significant

difference between the mean of gain of experimental group ($M = 4.56$, $SD = 4.08$) and that of control group ($M = 1.25$, $SD = 2.97$), $t(107.80) = 5.08$, $p = .00$, equal variance not assumed (See Tables 3 and 4), with Cohen's d effect size of .90 which was a large effect (Sawilowsky, 2009). It can be argued that students in the experimental group had far more advances from the pretest

to the posttest in their attitude (an average of 4.56 points increase), as against with that of their counterparts in control group (an average of 1.25 point increase). Consequently, it can be said that learner's schema awareness had a significant large impact on EFL learners' attitude, and our first null hypothesis was rejected.

Table 4.3 The Descriptive Statistics of Attitude Gain Scores of Different Groups from Pretest to Posttest

					Std. Error
		N	Mean	Std. D	Mean
Groups	EXP	60	4.56	4.08	0.52
	CNT	60	1.25	2.97	0.38

Note = EXP = Experimental, CNT = Control

Table 4.4 Independent Samples t-test of Gain Scores of Attitude from Pretest to Posttest

		Levene's							
		Test		t-test					
		F	Sig.	t	df	Sig.	Mean	95% CI	
							Difference	Lower	Upper
Gain Score	Equal variances assumed	4.72	0.03	5.08	118	0.00	3.31	2.02	4.60
	Equal variances not assumed			5.08	107.80	0.00	3.31	2.01	4.60

Finally, in order to examine the potential impacts of schema awareness on ESP learners' self-esteem across time, from the

pretest to the posttest, the second independent samples t-test was conducted on the gain scores (the deviation score), the

difference between the pretest and the posttest of students in both experimental and control groups. The improvement (gain) from the pretest and to the posttest in this research question, again, was estimated for each student by subtracting each person's posttest score from his or her pretest score. It should be mentioned that, as discussed before, prior to conducting independent samples t-test, the normality assumption was investigated, and the

skewness and kurtosis of the pretests and posttests in both groups were both between -2 and +2 (See Table 4.5 and Table 4.6). Consequently, the normality assumption of this independent samples t-test was satisfied. Additionally, ESP learners' self-esteem was considered as a latent composite, so the means of students' responses to questions of this scale were calculated and used in the t-test

Table 4.5 Descriptive Statistics of Experimental Group in Different Times of Testing of Self-esteem

	N	Mean	Std. D	Skewness	Kurtosis
				Std.	Std.
	Statistic	Statistic	Statistic	Statistic	Error
EXPPre	30	9.66	4.03	-0.18	0.30
EXPPos	30	15.96	3.09	-0.34	0.30

Note: EXPPre = Experimental group self-esteem pretest score, EXPPos = Experimental group self-esteem posttest score

Table 4.6 Descriptive Statistics of Control Group in Different Times of Testing of Self-esteem

	N	Mean	Std. D	Skewness	Kurtosis
				Std.	Std.
	Statistic	Statistic	Statistic	Statistic	Error
CNTPre	30	9.50	3.85	0.17	0.30
CNTPos	30	11.80	3.89	0.41	0.30

Note: CNTPre = Control group self-esteem pretest score, CNTPos = Control group esteem posttest score

The independent-samples t-test for comparing gain scores of EFL learners' self-esteem from the pretest to the posttest showed that there was a significant

difference between the mean of gain of experimental group ($M = 6.30$, $SD = 5.03$) and that of control group ($M = 2.30$, $SD = 3.45$), $t(104.43) = 5.07$, $p = .00$, equal variance not assumed (see Tables 4.7 and 4.8), with Cohen's d effect size of .94 which was a large effect (Sawilowsky, 2009). Thus, it can be argued that students in the experimental group had far more advances

from the pretest to the posttest in their self-esteem (an average of 6.30 points increase), as against with that of their counterparts in control group (an average of 2.30 point increase). Consequently, it can be said that learner's schema awareness had a large significant impact on EFL learners' self-esteem, and our second null hypothesis was rejected as well.

Table 4.7 The Descriptive Statistics of Self-esteem Gain Scores of Different Groups from Pretest to Posttest

		N	Mean	Std. D	Std. Error Mean
Groups	EXP	60	6.30	5.03	0.64
	CNT	60	2.30	3.45	0.44

Note = EXP = Experimental, CNT = Control

Table 4.8 Independent Samples t-test of Gain Scores of Self-esteem from Pretest to Posttest

		Levene's Test		t-test					
		Test							
		F	Sig.	t	df	Sig.	Mean Difference	95% CI	
								Lower	Upper
Gain Score	Equal variances assumed	12.25	0.01	5.07	118	0.00	4.00	2.43	5.56
	Equal variances not assumed			5.07	104.43	0.00	4.00	2.43	5.56

As discussed in previous sections, the primary aim of this research was to assess the influence and relationship between ESP learners' attitude, and self-esteem through using schema-awareness in language classes. In order to discuss on the findings of this study, we can say that these findings are consistent with a number of studies that are describe in this section.

The results of the research implied that, schema-awareness is a powerful tool to make the foundation of meaningful input which expands the linguistic and meta-cognitive knowledge of students including the knowledge of syntax, grammar, and communication styles and consideration of learners based on the prior experience and background knowledge of learners that are in line with the results of Cai and Wu (2020), Keshmirshekan (2019), Cao and Fu (2019), and Tan et al (2017).

In case of schema-awareness, Cai and Wu (2020), Keshmirshekan (2019), Cao and Fu (2019) indicated that activating schema in classrooms can make connection between what they learnt and what they already know, facilitate learners' speech and communication actions in various circumstances, and conveyed different meaning in different situation and contexts. In other words, results of the study shows the large impact of conducting schema awareness theories on making connection between the knowledge of learners and increase the learners' ability to explore and

understand different concepts in oral and written communication in ESP courses.

Moreover, recent studies tried to explore how students decide, when and how they experience attitudes, how they show them, and attitudes constantly useful, which must be regulated in several phases. Scholars stated that learners' attitude is rooted in the psychoanalytic and anxiety and coping traditions which can regulate the performances of learners. Therefore, the result of their study are in line with the results of this study which indicated that learners' attitude is positively connected with the reports of teacher about children's academic achievement, productivity in class, math success score, and standardized before time literacy.

In case of self-esteem and attitudes, Alrabai, (2017), Horwitz et al. (1991), and MacIntyre and Gardner, (1991) indicated that schema-awareness in the classrooms and the syllabus of learners with high level of self-esteem can make connection between what they learnt and what they have already known and it may facilitate learners' speech and communication actions in various circumstances and also convey different meaning in different situations and context. Along with this claim, this study showed that self-esteem can be a good facilitator for increasing the learners' awareness and increasing the learners' self-esteem. In other words, results of the study can show the large

relationship between schema awareness and learners' self-esteem.

In addition to what was stated above, in the traditional way of teaching mode, with no activation of background in their mind before learning, students come to the while-listening phase rapidly, which caused them to feel anxious and nervous because they know nothing about the listening materials. These psychological and emotional circumstances would become restrictions on learning and make comprehension more difficult. And with no background activation, students can only use the bottom-up processing model which focuses on deriving the meaning of the message based on the incoming language data, from sounds, to words, to grammatical relationships, and finally to meaning. Learning the words in isolation is a passive, static, and misleading process. In the traditional teaching mode, listening skills and strategies are seldom introduced to students while listening and the post-listening activities are totally neglected. All these cannot benefit students either on their language knowledge accumulation or on their improvement of language comprehension.

From the above discussion, we can see that the new teaching model which is based on the schema theory pays due consideration not only to the linguistic knowledge but also to the background knowledge. It helps students obtain background activation

before listening and using both bottom-up and top-down processing models to achieve better understanding while listening. Therefore, the Schema Theory-based teaching mode can improve students' learning since it is both practical and applicable.

5. Conclusion

This study was an attempt to explore the potential impacts of schema awareness on attitudes, and self-esteem of ESP learners. Firstly, the findings showed that schema awareness has a positive and big impact on learners' attitude. Accordingly, it can be said that, schema awareness can increase the attitude of ESP learners. It seems that as long as ESP students are concerned with their background knowledge and adjusted to the problematic situation, they will have better attitude toward language learning. This would assist them to successfully plan and critically adapt to the attainment of personal goals in educational settings.

Finally, it can be implied that schema awareness has positive impacts on the self-esteem of the ESL learners. It can be concluded that those successfully adapt to background knowledge demands and have better perception of self and others would continue the route of professional growth with higher levels of enthusiasm and feel more confident in language context.

In sum, it can be said that schema awareness is a process of interaction between the background knowledge and the

presupposed knowledge in the learning context. Through this special kind of teaching, the new approach based on schema theory is more effective than traditional approach in improving students' language learning ability. The study shows that schema theory facilitates the mentioned variables and thus can be applied to practical teaching. Although schema theory contributes greatly to psychology fields, it is still imperfect, for it cannot explicitly explain the phenomenon or process concerning language learning. For instance, it provides no explanation of why one schema rather than another might be selected to guide comprehension and inference. So, the study is limited and much broader research in this respect needs to be carried out. Moreover, this study has some fruitful and tangible pedagogical implications for language teachers, ESL students, and material developers.

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