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The role of learning-styles incorporation in the enhancement of EFL learners' narrative writing ability: A revelation of mental processes using think aloud protocol

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Abstract

This research tried to probe the effects of incorporating learners' preferred learning styles in instructions on their narrative writing development and their mental patterns and imagination. 74 homogeneous secondary EFL learners were divided into three groups based on their sensory styles of visual, auditory and tactile. The learners in the three groups were provided with instructions anchored to their learning styles. In the meantime, they were required to produce narrative writings on a number of topics in accordance with their course book. Prior to narrating, they had to think loudly and record their voices to reveal the approach and pattern they utilize for performing the required activities. Their voices were transcribed and later analyzed by the researchers for further investigations. The obtained results displayed a significant improvement in their writings as well as an ongoing progress of their thinking patterns. Furthermore, the data revealed the dominant mental approaches of top-down, considering the whole plot of the topic in advance, and bottom-up, considering the details prior to the entire story, used by the students. The study also displayed the positive impact of instruction on the improvement of learners' narrative writing revealing their self-imaging of the plot with which they could narrate the given topics in accordance with their own life experiences and understanding.

Keywords: Learning styles-related instruction, Mental processes, Narrative writing

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1. Introduction

Writing is one of the productive skills which reveals the inner sights of people towards their surrounding world. However, it is one of the most challenging skills to be improved since it requires a close coordination and cooperation of one's mind and thoughts. According to Banat (2007), writing is an immeasurable skill that can assist learners communicate and understand the go togetherness of language parts which should be mastered. Elsewhere, Al Souqi (2001) pointed out that writing consists of creating ideas in addition to capability of expressing them in a rationale and cohere way. Many scholars (Hyland, 2015; Kellogg & Raulerson, 2007; Megaiab, 2014; Quintero, 2008; and Rico, 2014) have emphasized the important role of writing as a productive skill on the improvement of mind development. Kellogg and Raulerson (2007, p. 237) stated "Writing well is a major cognitive challenge, because it is at once a test of memory, language, and thinking ability." Yundayani et al., (2019, p.169) proposed "Writing is a communicative skill, can be seen as a mechanism to experience students' knowledge by developing and presenting their ideas." Needless to say, instruction of how to write can play a vital role to scaffold the students' thoughts and assist them to find a suitable mind pattern with which they can develop their writings.

In the process of language acquisition, listening and speaking are learned naturally but writing and reading are 'culturally specific' learned behaviors (Brown 2001). In other words, writing requires training. Nunan (1999, p.271) viewed writing as "probably the most difficult thing to do in language". Elsewhere, he stated that writing is a "complex, cognitive process that requires sustained intellectual effort over a considerable period of time" (p. 273). To step to such a demanding process, how learners receive necessary implementations in addition to their own prior perception of their world plays an important role.

Enhancing the best performance of the learners need some factors to be included in the teaching process among which learners preferred styles of learning and contextualizing the data are great facilitators. Many scholars pointed out the beneficial role of involving learning styles in learning and teaching process including Gao (2003), Griffiths (2015), Leaver et al. (2005), Oxford (2011), and Puchta (2010). This means that including learning styles activates all sensory channels of their mind by which they

perceive more feasible information. On the one hand they can understand the data properly since it is compatible with how they receive, store, and retain the data. On the other hand, the processes they go through in their mind are actually in line with their comprehension since contextualizing the intended input deepens their perception of the data (Amerstorfer, 2016; Oxford, 2011; & Ushioda, 2009). The present investigation was inspired by their theoretical lens shedding light on incorporation of learning styles in education and its beneficial role in input comprehension.

Among different genres of writing, narrative style is the one that can involve the writer in an attempt to connect their thoughts in a rationale way. Macclure (2014) defined narrative as a writing style through which the writer tries to create a link between events or experiences of their life. Moreover, a good narration can create an amusing impact as well as a pleasurable time for the reader of the content similar to what a good story does. Jubhari et al., (2022) described narrative writing as a text which is usually written in the first person that should involve engaging experiences of the writer. Narrative as one of the genres of writing attracted many researchers (Ball, 2013; Bustmante, 2013, Kelly & Bailey, 2021; & Meyers, 2007). Bustmante (2013, p.179) believed that narrative writing "may center on facts, such as historical background. It may re-create an event, like in a personal essay to relate an anecdote to initiate a discussion or to exemplify a central theme". Similarly, Meyers (2006, p.145) described narratives as "The action, details, and dialogue of a well-written narrative allow your readers to respond to an event almost as if they were experiencing it themselves".

The effectiveness of using think aloud protocols has been proposed in many studies including Bowles (2010), Hu and Gao (2017), Wolcott and Lobczowski (2021), and Zhang and Zhang (2019). Bowles (2010, p.1) proposed that verbal reports are methods with which we can "provide insight on a variety of issues that production data alone cannot address, such as language learners' cognitive processing, thought processes, and strategies".

Practically and pedagogically, in recent years, Iran's official decision makers have tried to include more communicative curricula in addition to course book activities. However, the need of incorporating learning styles in the activities as well as instructions seems to be not entirely fulfilled. Moreover, the extent of the effectiveness of involving

learning styles on learners' improvement can reveal if teaching methods should be in accordance with learners' preferred styles of learning. This can also assist to follow their mental patterns while performing the required activities. The current study was an attempt to explore the effect of incorporation of learning styles in instructions on narrative writing ability of learners, and to reveal the thinking patterns of the language learners specifically in their narrative writing skill.

To fulfill that goal, the following research questions were addressed:

1. Does visual-based instruction significantly improve visual-oriented EFL learners' narrative writing ability across time?
2. Does auditory-based instruction significantly improve auditory-oriented EFL learners' narrative writing ability across time?
3. Does tactile-based instruction significantly improve tactile-oriented EFL learners' narrative writing ability across time?
4. How does exposure to visual-based instructions affect, if at all, the mental processes of developing a narrative writing activity in EFL learners with visual learning style?
5. How does exposure to auditory-based instructions affect, if at all, the mental processes of developing a narrative writing activity in EFL learners with auditory learning style?
6. How does exposure to tactile-based instructions affect, if at all, the mental processes of developing a narrative writing activity among EFL learners with tactile learning style?
7. Are the mental processes in writing of EFL learners with various learning styles different as a result of exposure to LS-related instructions?

2. Review of Literature

2.1. Writing

Writing is a vital need of everyone's communicative skill. It not only converts ones' thoughts into words and sentences but also enables them to create documents with which they can trace and follow their progress in this skill. Nunan (1999, p.273) defined writing as a "complex, cognitive process that requires sustained intellectual effort over a considerable period of time." According to Hedge (2005), writing necessitates the writers

to organize their minds in order to develop their ideas or information; writers should avoid any ambiguity and clearly state their aspects. Moreover, they should choose a variety of grammatical structures and vocabularies to create an appropriate writing production for their readers.

However, according to several researchers (Brown & Lee, 2015; Langan, 2012; Mohammad & Hazarika, 2016; & Richards & Renandya, 2002) ,writing seems to be an arduous task for the learners due to following reasons: a) some unrealistic or tedious course book activities they have to do; b) un-imaginative topics which are far from their background experiences or not included in their daily life routines; c) rigorous processes of gathering, organizing, and finalizing the ideas about those topics; and d) the stress of time limitation for performing well in their tasks.

Langan (2012, p.17) believed that a writer should consider certain goals while writing including “unity, support, organization, and error-free sentences”. He argued that cognitive skills such as idea gathering should be in accordance with the topic which itself needs a logical order among the text. Sequentially, the writers are required to express their opinions within a draft, then edit and finalize their written production which seems to be difficult for them. Comparably, Richards and Renandya (2002, p.303) stated that in the context of school, students confront problems getting their ideas into “eligible sentences and paragraphs”. Consequently, and following mentioned factors, writing seems to be hard to become master at. This shows itself in focusing on particular genre of writing among which narration, as the main goal of the current study. Following Manik and Sinurat (2015, p. 173), narrative writing is defined as “a type of writing which tells an event or process chronologically in certain time. Narrative writing is writing that tells a story, whether true or fictional”. Narration, assists learners to express what they have in their mind, their life experiences or a report on an event, in a simpler yet sequencing way.

All the mentioned reasons make writing a less attractive skill for the learners. Needless to say, this vital tool of communication can be more pleasant for the students if they learn how to maintain their thoughts, create satisfactory performances, and trace their own development. To attain such a goal, establishing an environment in which students feel comfortable can lead to desirable results. Obviously, no one can learn how to go through writing process without being instructed efficiently and appropriately. Novice

writers need to practice a lot and passing the process requires teachers' help so that learners can exploit their minds and thoughts, convert them into words, and finally present their productions.

2.2. Learning Styles and Contextualization

Students' styles of learning are observable at all levels of their education. Considering the preferred styles during the process of learning should be a determining factor for the teachers to present the most matching instructions to their students' ways of learning attested by some authors like Miller (2001) and Oxford (2001). Miller (2001) mentioned that educators are responsible to find out the diversity of their learners and should implement the information in different ways so that they can accommodate all preferences of the learners. Oxford (2001, p.2) stated that "if there is harmony between (a) the student (in terms of style and strategy preferences) and (b) the combination of instructional methodology and materials, then the student is likely to perform well, feel confident, and experience low anxiety." She classified sensory styles into four major kinds of visual, auditory, kinesthetic (movement-oriented), and tactile (touch-oriented). These sensory preferences display 'physical, perceptual channels' that learners feel comfortable with. She referred to visual learners as the ones who enjoy reading and obtain data from images and visual stimulations. To them, speeches, dialogues, and directions without visual references seem confusing. On the contrary, auditory learners do not need much visual data; therefore, they take advantage of oral representation of the information. Kinesthetic and tactile learners are interested in movements; they become excited working with tangible items, flashcards, and handcrafts. They prefer moving around and frequent breaks to sitting still (Oxford, 2001, p.3- 4). The effective role of learning styles on the better learning of the learners have been proposed by many scholars (Ariastuti & Wahyudin, 2022; Brown & Kelsey, 2013; Griffith, 2015; Pashler et al., 2009; Oxford, 2011). According to Ariastuti and Wahyudin (2022, p. 67) "the students' learning style preferences can be the insight for the teachers in managing the classroom practice". They believed that involving student's preferred styles can be beneficial for teachers "when they prepare a lesson, manage the classroom task, and conduct the assessment to achieve the learning goals". Similarly, Albeta et al., (2021, p.116) claimed "educators must consider learning styles and learning strategies in selecting and designing learning

materials to maximize student achievement".

However, Cools and Rayner (2001, p.302) stated that considering learning styles should be integrated with the context of the learners' environment. They believed how people behave in the educational environment not only depends on their preferred styles, but the context in which learning takes place should also be taken into account. They added that enhanced contextualization of the studies on learning styles can also imply the results of the research done on learning improvements.

2.3. Mental Process in Writing

Writing is the ability through which learners activate their mental process to convert their thoughts into verbal products. Dvorak (1986, p.155) believed that "many writers have a 'task overload' that is, inference between what they are trying to say, how to say it, and accuracy of the form". In addition, when someone starts writing, he/she tries to form words somewhere within his/her mind. Sharples (2002, p.4) stated that "the mental activities that cause particular words to appear in the mind, that allow words to flow smoothly on to paper one moment and then dry up the next, are hidden below consciousness." Vygotsky and Cole (1978, p.115) deemed writing as "a basic discovery- namely that one can draw not only things but also speech". Following this description, it can be inferred that as learners write and think about their writing, they try to, even silently, speak their thoughts within their minds in an order which might sound and seem logical to themselves. Elsewhere, Emig (1977, p. 125) stated that "Writing involves the fullest possible functioning of the brain, which entails the active participation in the process of both the left and the right hemispheres".

Gregg et al., (2016, p.80) observed how writers experience writing and the processes they were through and proposed writers must obtain "automatization of many parts of the writing process so that they can be carried on with infrequent or slight conscious attention". They added that writers' working memory in order to improve the 'time-sharing skills' develops as they grow. Following Pascual-Leone's theory (as cited in Lee et al., 2016, p.81) "the principal limitation on the complexity of cognitive performance is the number of mental schemes that a person can keep simultaneously activated. A certain limited number can be kept active through mental effort- a number that increases with age". Lee et al., (2016, p.83) presented six knowledge system concerning writing

process learners may go through: “fluency in producing written language, fluency in generating ideas, mastery of writing conventions, social cognition, literary appreciation and discrimination, and reflective thought”. However, in younger writers, integration of the mentioned skills cannot happen immediately as it occurs in more experienced ones.

However, writing might create problems for the students specifically those who study a foreign language. Quintero (2008) pointed out some of the problematic areas of writing such as grammar, punctuation, choice of vocabulary, and the like that can affect their performances. In the same vein, Jaramillo and Medina (2011) noticed that constructing the sentences and lack of linguistic resources could influence the learners’ ability to convert their thoughts into texts.

2.4. Process and Product Approaches to Writing

Sun and Feng (2009, p.150) held that “process approach to teaching writing focuses on writing process rather than the final draft” which includes several stages of: a) pre-writing or invention of writer’s thoughts; b) drafting, that can be a feedback from the instructor; c) revising the entire writing which usually consists of an overall focus, reconsideration of how the written text was organized, and providing sufficient evidence; and d) final revision of what has been written so far to check its accuracy of the sentences for the publishing the final draft.

Nunan (2001) stated that product approach puts its focus on writing tasks through which students imitate, copy, and transform teacher instructed models. Pincas (1982, as cited in Badger & White, 2000) viewed product approach in writing mainly as linguistic knowledge of the learners and their attention on the proper use of vocabulary, syntax, and cohesive devices. She believed that through this approach, learners respond to their teachers and imitate what has been instructed by the teachers. She suggested free writing for the learners in a way that students receive instruction, but they are free to create their own points of view. She added, product approach aims to create an error-free coherent writing.

The focus of process approach, on the other hand, is on the steps taken by the students to create their work. This approach sees writing as a way of creation of ideas by the writers (Zamel, 1982, p. 201). It mainly focuses on the procedures taken by the writers to solve problems, discover ideas, express ideas in writing format, and revise texts. Zamel

(1982) also stated that writing is the process of discovering ideas and making meaning out of them.

Furthermore, Tribble (1996, p.37) proposed that the process approach emphasizes writing as "activities which move learners from generation of ideas and collection of data through the 'publication' of a finished text." In process approach it is believed that no text can be perfect, but writers try to approach a perfect writing. In this approach, learners try to reflect on their own writing, discuss it with their teacher, and finally edit their writing to create an acceptable draft as their final work.

McCrimmon (1994) tried to discriminate process-oriented as a way of knowing (process) from product-oriented as a way of telling (product) in writing. Likewise, Fowler (1989) claimed that process writing matches the inherent process learners have in their mother tongue and allows them to express themselves better as individuals.

2.5. Think aloud protocol

Gregg and Steinberg (1980, p.4) defined think aloud protocol as "a description of the activities, ordered in time, which a subject engages in while performing a task." According to their description, through verbal protocols or "thinking aloud" protocol "subjects are asked to say aloud everything they think and everything that occurs to them while performing the task, no matter how trivial it may seem" (p.4).

Comparably, Flowers and Hayes (1981, p.22) asserted that "think aloud protocol is considered as a problem-solving process by which a writer tries to speak out loud to describe thoughts as it happens; the process of planning, idea and text generation, and revision". They claimed that "thinking aloud protocols share three advantages of process-tracing methods: 1-They provide direct evidence about process; 2- They yield rich data and thus promote exploration; 3- They can detect processes that are invisible to other methods." (p.219)

The above-mentioned advantages are crucial in writing since writing itself is a complex integration of processes that requires longer time. Obviously, through thinking-aloud, the writer (learner) reveals processes that might not be pre-planned. Besides, think aloud provides a "valuable window onto one's thought processes" (Hayes & Flowers, 1981, p.219).

Van Someren et al., (1994, p.30) held that "think aloud method avoids

interpretation by the subject and only assumes a very simple verbalization process. It treats the verbal protocols that are accessible to anyone, as data thus creating an objective method." During think aloud, the writer has an ongoing talking that occurs almost automatically in their minds. It is one of the applicable strategies with which learners can have a better image and awareness about their mental process as they write. In other words, think-aloud protocol helps them to reach a higher level of writing content (Pitenoee et al., 2017). Plus, it helps them to manage their thinking and have a better control over the hierarchical use of sentences as they write about the relevant topic. Moreover, it allows them to trace their own improvement as they are moving on (Azizi et al., 2017).

3. Method

This study utilized a comparative study with quantitative and qualitative approaches. The aim was to trace the writing processes and improvement of students who learn to involve their visual, auditory, and tactile learning preferences in their writing within four separate ongoing assessments.

3.1. Design

The study was an embedded mixed-methods design in nature with the qualitative stage embedded within the quantitative stage. For the quantitative stage, a quasi-experimental design was employed to reveal the impact of learning styles-based instructions on the writing development of the learners. The dependent variable was the ability to write narrative texts and the independent variable was the learning style-based instructions. For the qualitative stage, adopting a content analysis design, think aloud protocols were utilized to assist the researchers to investigate the mental processes in writing of the learners in each learning style in order to detect if there was any distinguishable thinking pattern among them.

3.2. Participants

Seventy-four school girls (8^{th} grade) in a secondary state school in Tehran, participated in this study. They were all 13 years old and at A2 level based on CEFER. English language was used as the medium of instruction and they all spoke Persian as their L1. Based on Learning Style Questionnaire (LSQ), they were divided into three experimental

groups of visual (N=42), auditory (N=9), and tactile (N=23). A pilot group of 30 female students with similar characteristics to the target groups from the same school was used to administer the translated version of LSQ to assure the researchers about the appropriateness as well as the applicability of its content.

3.3. Instruments

To fulfil the objectives of the research, the following instruments were used: first, based on the level of the participants, a Cambridge Test of Flyer (mock Flyer, 2018) was administered for ensuring homogeneity of the learners with regard to their general English proficiency including all skills. The test included the four skills: listening (25 items), reading (38 items), writing (2 sections: part 1;10 items and part 2, a picture story), and speaking. For the purpose of this study, a careful attention was paid on the second part of writing in order to be evaluated for the goal of the research. It consisted of three related picture stories that learners had to narrate. Next, participants had several writing texts in accordance with their course book items (nationality, my week, my abilities, my health, my city, my village, and my hobbies), and factors of understanding the content, choice of vocabularies, and creating logical link among the events either by sentences or connectors following IELTS band score (5 marks for each part, totally 15) were considered to evaluate their performances. Considering the proficiency level of the participants, the elementary evaluation of IELTS band scores was involved to assess their writing. In order to have an ongoing assessment, the instructor gave the learners 4 extra topics of nationality, living in another country, Mina is sick, and Nowruz by which each learning style members' writing were evaluated. Picture stories for visuals, audio tracks for the auditory learners downloaded from BBC learning English, and handcrafts like postcards and glue- and- paste activities for tactile learners. After the intervention period, the second part of writing section of another edition of Flyer (2019) test was used as the posttest to evaluate the improvement of their writings.

Second, the Learning Styles Questionnaire designed by Cohen et al. (2002) was used which included 110 items organized in 11 separate sections. For the goal of the present study only the first three parts, which detected sensory styles of visual, auditory, and tactile (10 items for each) were used to fulfill the goals of the research. The reliability of the test was estimated, r=0.769 which seemed to be acceptable. A 5-Likert scale

(0=never, 1=seldom, 2=sometimes, 3=often, & 4=always) was used in this questionnaire. Following the description of the questionnaire designers (Cohen et al., 2002), the closer their scores to the maximum of the scale, 40, the more reliance of the learner on the preferred style. The reliability of the main version appeared to be 0.839 which was considered as acceptable.

Since the present study focused on LSs of beginner learners, it was translated and simplified into Persian by the researchers so that it became comprehensible for them. Sequentially, following Tsang et al's (2017) guidelines for developing, translating, and validating a questionnaire, back translation was performed which suggested stages of: a) forward and backward translation, checked by a bilingual translator; b) expert committee, including three linguists; and c) preliminary pilot testing, using the translated version in another research resembling the intended respondents.

Third, with three to four sessions interval, students had to write about a given topic, relevant to their course book titles. Their writings were evaluated and scored based on the above-mentioned criteria by the teacher herself.

Finally, a think aloud protocol was utilized to explore the learners' mental images and processes while engaging in the narrative writing tasks (nationality, living in another country, Mina is sick, & Nowruz). To that aim, they were asked to record their voices while thinking aloud, and hand in their records to the teacher. The researchers later transcribed and analyzed their voices to find out the mental process of each learning style.

3.4. Procedure

At the onset of the study, a Flyer test was used to assure the researchers of the homogeneity of the students concerning the proficiency level of the participants. Then, the 74 students sat for the Persian-translated LSQ to be divided into three groups of visual, auditory, and tactile. The current study considered a similar writing model to the Gregg and Steinberg's (1978) structure of mental process of writing model, as exhibited in Figure 1, in order to analyze the participant's writing activities including their planning, translating, and reviewing. The instructor performed the first topic of the book, my nationality, herself in front of the learners, step by step, so that they became familiar with the required stages they had to go through. This means that, first she said out loud what she wanted to write prior to her writing and then expanded her sentences.

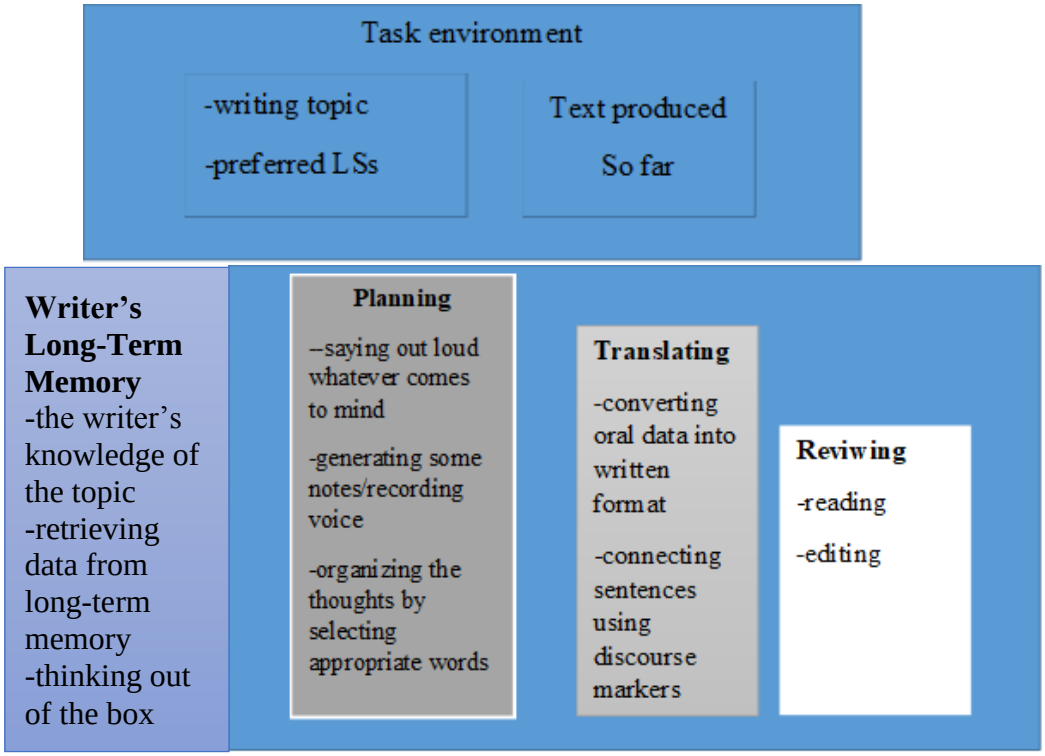

Figure 1. Structure of Mental Process of Writing

The implementation of the course book topics followed narrative format, presenting like a story by the teacher, so that learners become familiar with sequence of the events as well as how to involve connectors between the sentences. For instance, as for "my hobbies" topic, she told: "I usually start my day with some exercises; then I listen to my favorite music and make breakfast. After that, I read books. Finally, I sometimes watch movies". However, the indirect emphasis on discourse markers including first, next, after that, plus, and the like expose them to the correct narration of the events as they occur. In addition to the course book activities, which were common for all the participants, each learning style received its relevant extra activities as their specific treatment. For instance, considering one of their topics which was 'Mina is sick' (learning about sickness), visual learners had a series of related pictures that they had to narrate them based on their own understanding, auditory learners listened to relevant track, and tactile learners had to sort and match pieces of similar topic information (unscrambling sentences) and then write about it. Obviously, prior to each writing, every student was asked to think out loudly (and record her voice) about how she was going to convert her thoughts into words. This means that she had to clarify whether she would have a plan or not. They were all

monitored during this stage to make sure that they were writing what they were saying.

The course of instruction included 25 sessions, 90 minutes each. The first session included the implementation of the practices learners were required to perform for the entire course of instruction. Each four sessions, one of the previously mentioned topics was given to the learners (1st task=nationality, 2nd=living abroad, 3rd=Mina is sick, & 4th=Nowruz). To provide the treatment, the teacher spent one-third of each session or more, depending on the difficulty level of the topic on the performance of the learners. She gave each group their related activity. They were exposed to an instruction type including activities corresponding to their learning style and similar to their daily life which incorporated narrative writing. The teacher explained the topics of the course book (including: my nationality, my week, my abilities, my health, my city, my village, &, my hobbies) as if she was narrating an event to expose them to logical sequencing of the happenings in addition to using connectors of (first, plus, next, after that, etc.). Considering “my week” topic for instance, the visual learners had series of related pictures by which they had to write about the events as they appeared orderly using discourse markers. Likewise, for the auditory learners, topic-related short story tracks in accordance to the topics like nationality or sickness which were downloaded from British council English learning, were played and they had to narrate them based on their own understanding. Then, in each of the 24 sessions, they had one track (24 tracks in the entire term of instruction) for their activity. Similarly, the tactile learners had to unscramble picture stories, sorting pieces of topic-related stories, or matching pictures and then narrating them based on their own perspectives. This means the teacher selected a topic-relevant story and cut its paragraphs into several sections; sequentially, she handed them over to the students and they had to read and sort the sections to make the story. The instruction spanned over 24 sessions, October to April, 2023, and each 4 sessions the teacher gave the students an extra topic, which was similar to the course book titles, and they had to narrate it. Throughout the treatment sessions, she utilized a variety of materials in the class to create a context by which the topics became more comprehensive; for example, to teach “nationality” to visual learners, she used several posters of different countries flags and famous places in addition to displaying slides. For auditory learners, she played an audio track of a conversation among people of different

countries. And for tactile learners, she used the glob to involve learners finding various countries and then gluing and pasting the relevant unscrambled short picture stories. It is worth mentioning that, for the fulfilment of the four required tasks, and in order to prevent voice intervention, they were taken to language lab in those sessions when they had to hand over the four tasks. Subsequently, they recorded their voices with a voice recorder or their mobiles and gave it to their teachers to be saved in a file for further analyses.

4. Results

4.1. Quantitative Phase: Among Group Analyses

Initially, the researcher opted for checking the homogeneity of the learners in the three groups with respect to their writing ability at the outset. To that end, a one-way ANOVA was utilized. Normality of the distributions of the pre-test scores was checked to be met statistically.

Table 1 shows the Levene's test of homogeneity of variances. It displays that there was no significant difference among the three groups' variances (p=.425>.05). Hence, the condition was met.

Table 1. Test of Homogeneity of Variances for the Pretest Scores

Pretest			
Levene Statistic	df1	df2	Sig.
.866	2	71	.425

Table 2 shows the result of one-way ANOVA on the pretest scores of the three groups. As it shows, the difference between the three groups' pretest mean scores turned out to be non-significant (F=.557, p=.575>.05). As such, the researcher rested assured about homogeneity of the three groups of learners regarding their writing ability prior to the intervention.

Table 2. ANOVA on the Groups' Pretest Scores

Pretest					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	21.364	2	10.682	.557	.575
Within Groups	1360.595	71	19.163		
Total	1381.959	73			

4.1.1. Research Question One

In order to show if there were significant changes in the writing scores of the visual learners across four times of writing performance, a Repeated Measures ANOVA had to be used. Firstly, the normality of distributions condition was checked. As one set of scores showed to be skewed, the non-parametric Friedman Test was applied to show any significant differences among the four mean scores:

Table 3. Ranks of Visual Learners' Four Writings

	Mean Rank
Vis1	1.24
Vis2	1.88
Vis3	3.23
Vis4	3.65

Table 4 shows that the mean ranks have increased incrementally from test one to test four. The following chi-square table shows if the difference among the scores was significant:

Table 4. Test Statisticsa on Visual Learners' Writings

N	37
Chi-Square	87.840
df	3
Asymp. Sig.	.000

a. Friedman Test

Table 4 reveals that there was a significant difference among the four mean scores (X^2=87.84, p=.000<.05). As such, the corresponding null hypothesis, 'visual-based instruction does not have any significant impact on visual-oriented EFL learners' narrative writing ability across time', is rejected. Table 5 shows that the effect size was very large (.924) according to Cohen's (1988, pp.284-7) guidelines (.01= small, .06=moderate, .14=large effect).

Table 5. Multivariate Tests on Visual Learners' Writings

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's trace	.924	138.583[a]	3.000	34.000	.000	.924
Wilks' lambda	.076	138.583[a]	3.000	34.000	.000	.924
Hotelling's trace	12.228	138.583[a]	3.000	34.000	.000	.924
Roy's largest root	12.228	138.583[a]	3.000	34.000	.000	.924

Table 6 shows where the differences lie.

Table 6. Pairwise Comparisons among Visual Learners' Four Writings

Measure: MEASURE_1						
(I) Visual	(J) Visual	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1	2	-1.811*	.450	.000	-2.723	-.898
	3	-6.297*	.365	.000	-7.038	-5.556
	4	-7.297*	.435	.000	-8.179	-6.416
2	1	1.811*	.450	.000	.898	2.723
	3	-4.486*	.441	.000	-5.381	-3.592
	4	-5.486*	.550	.000	-6.602	-4.371
3	1	6.297*	.365	.000	5.556	7.038
	2	4.486*	.441	.000	3.592	5.381
	4	-1.000*	.449	.032	-1.910	-.090
4	1	7.297*	.435	.000	6.416	8.179
	2	5.486*	.550	.000	4.371	6.602
	3	1.000*	.449	.032	.090	1.910

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

As revealed in Table 6, all sig values turned out to be less than .05 indicating that each mean score was significantly higher than the mean in the previous test. The following bar graph visually illustrates the mean differences:

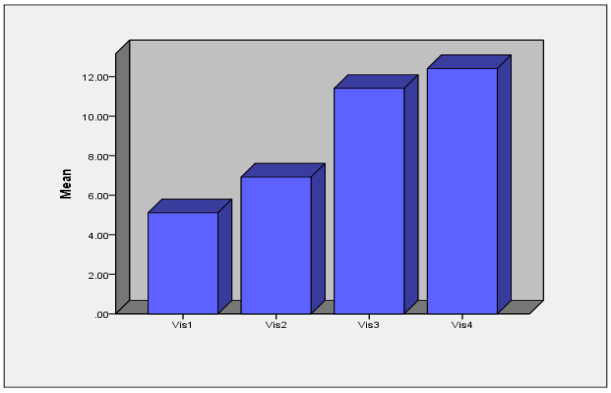

Figure 2. Bar Graph of Visual Learners' Four Mean Scores

4.1.2. Research Question Two

In order to show if there were significant changes in the writing scores of the auditory learners across four times of writing performance through the parametric test of Repeated Measures ANOVA, the normality condition was verified first. Table 7 shows whether the differences were statistically significant:

Table 7. Multivariate Testsa on Auditory Learners' Four Writings

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Auditory	Pillai's Trace	.942	32.689[b]	3.000	6.000	.000	.942
	Wilks' Lambda	.058	32.689[b]	3.000	6.000	.000	.942
	Hotelling's Trace	16.345	32.689[b]	3.000	6.000	.000	.942
	Roy's Largest Root	16.345	32.689[b]	3.000	6.000	.000	.942

As shown in Table 7, the p value corresponding to Wilks' Lambda turned out to be.000, less than .05, which indicates that there was a significant effect for time. Therefore, the corresponding null hypothesis, 'auditory-based instruction does not have any significant impact on auditory-oriented EFL learners' narrative writing ability across time', is rejected implying that there was a significant change in scores across four different time periods. The effect size of this result turned out to be very large (.942) according to Cohen's (1988) guidelines. Table 8 locates the differences among the four sets of scores:

Table 8. Pairwise Comparisons of Auditory Learners' Four Writings

Measure: MEASURE_1						
(I) Auditory	(J) Auditory	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1	2	-.889	.735	.261	-2.584	.806
	3	-6.000*	.624	.000	-7.438	-4.562
	4	-6.778*	.813	.000	-8.652	-4.904
2	1	.889	.735	.261	-.806	2.584
	3	-5.111*	.873	.000	-7.125	-3.098
	4	-5.889*	1.073	.001	-8.363	-3.415
3	1	6.000*	.624	.000	4.562	7.438
	2	5.111*	.873	.000	3.098	7.125
	4	-.778	.894	.410	-2.840	1.284
4	1	6.778*	.813	.000	4.904	8.652
	2	5.889*	1.073	.001	3.415	8.363
	3	.778	.894	.410	-1.284	2.840

As displayed in Table 8, the difference between the first and the second means was not significant (p=.261>.05). However, the difference between the second and the third means turned out to be significant (p=.000<.05). The difference between the third and the fourth means also came out to be non-significant (p=.41>.05). Figure 3 illustrates the auditory learners' four mean scores graphically:

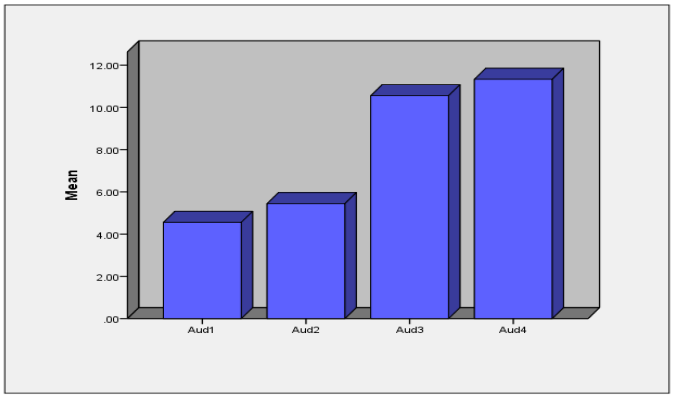

Figure 3. Bar Graph Auditory Learners' Four Mean Scores

4.1.3. Research Question Three

In order to show if there were significant changes in the writing scores of the tactile learners across four times of writing performance the parametric RM ANOVA was used. The normality condition was primarily checked, and it was shown that all distributions were normal. Table 9 shows if there was any significant difference in the four sets of scores.

Table 9. Multivariate Tests[a] on Tactile Learners' Four Writings

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Tactile	Pillai's Trace	.956	101.073[b]	3.000	14.000	.000	.956
	Wilks' Lambda	.044	101.073[b]	3.000	14.000	.000	.956
	Hotelling's Trace	21.658	101.073[b]	3.000	14.000	.000	.956
	Roy's Largest Root	21.658	101.073[b]	3.000	14.000	.000	.956

a. Design: Intercept
Within Subjects Design: Tactile

b. Exact statistic

As depicted in Table 9, the Wilks' Lambda value turned out to be significant (.000>.05) which implies that there was a significant time effect. Therefore, the corresponding null hypothesis, 'tactile-based instruction does not have any significant impact on tactile-oriented EFL learners' narrative writing ability across time' is rejected. The effect size also came out to be very large (.956). Table 14 shows the pairwise comparisons locating the differences:

Table 10. Pairwise Comparisons of Tactile Learners' Four Writings

Measure: MEASURE_1						
(I) Tactile	(J) Tactile	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1	2	-2.647*	.717	.002	-4.167	-1.127
	3	-6.176*	.682	.000	-7.622	-4.731
	4	-7.588*	.601	.000	-8.861	-6.315
2	1	2.647*	.717	.002	1.127	4.167
	3	-3.529*	.529	.000	-4.652	-2.407
	4	-4.941*	.433	.000	-5.859	-4.024
3	1	6.176*	.682	.000	4.731	7.622
	2	3.529*	.529	.000	2.407	4.652

	4	-1.412*	.588	.029	-2.659	-.165
4	1	7.588*	.601	.000	6.315	8.861
	2	4.941*	.433	.000	4.024	5.859
	3	1.412*	.588	.029	.165	2.659

As evinced in Table 10, all sig values turned out to be less than .05 implying that there was a significant increase in the mean scores over time.

Figure 4 presents the differences in the mean scores visually:

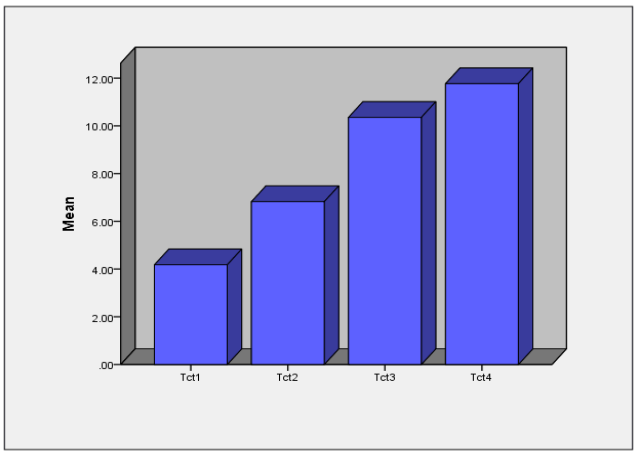

Figure 4. Bar Graph of Tactile Learners' Four Mean Scores

4.2. Qualitative Phase (tracing mental processes in writing)

4.2.1. Research Question Four

The fourth research question aimed at exploring the mental processes of developing a narrative writing activity among EFL learners with visual learning style. To that end, every student was asked to think loudly about the steps she wanted to take to narrate the required topics (1st: nationality, 2nd: living in another country, 3rd: sickness, & 4th: new year/Nowruz) based on their understandings. Their teacher provided them with related picture stories, posters, story cards. They had to narrate what they had comprehended from the pictures; however, how they wrote was totally optional. This means that, some narrated their writing in a dialogue and some as a story.

As their thoughts revealed in the first writing, from the 41 students present at the session, the majority of the visual students (N=25, 60.97%) tried to imagine the whole story prior to its details either by referring to their background life experience or fantasizing

an imaginary event. Subsequently, those who considered the whole plot in advance to the details showed a top-down look towards the given topic. This means that they considered the characters, the place, the dialogues, and the required events to extend their writings. However, other students (N=16, 39%) preferred to consider the details of the story prior to expanding their ideas. This means that they had a 'bottom-up' consideration of the story beginning with selecting the words, then making sentences, and finally creating the story. Similarly, they also used either their life experiences or an imaginary event. Interestingly, they had a variety of narration from creating a conversation between two people to writing a letter to a person abroad. This revealed that they had the chance of thinking freely and developing the content in accordance to their own tastes of expanding the plot.

In their second writing (living in another country), the students' writings' patterns were different since some had no idea of how living in another country would be like; therefore, they could not even visualize it. From the 39 learners present at this session, 5 students (12.85%) expressed that they had the first sentence and then let the others come to their minds with no prior plans. Some of the students, as in writing one, revealed either a top-down (N=24, 61.53%) or bottom-up approach (N=10, 25.6%), three students did not mention anything.

As for the third writing (sickness), from the 37 students present at the session, the majority of the visual learners (N=26, 70.2%) had a plan of how to narrate a sickness occasion with diverse topics including: a conversation between a mother and her daughter about how she got cold from her classmates, catching cold after a volleyball match, not wearing enough warm clothes, and the like. The rest, (N=9, 24.3%), considered details of words and sentences and then created the entire story. The remaining students (N=2, 5.4%) had no plan and just let their ideas move on. These patterns were displayed in their fourth writing as top-down approach users (N=31, 79.5%), bottom-up (N=6, 15.4%), and those who had no special approach (N=2, 5.1%). Figure 5 illustrates the approaches taken by the visual learners in the four writings.

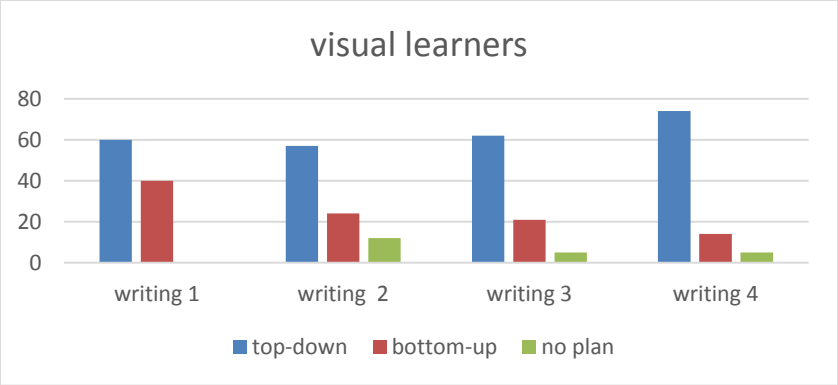

Figure 5. Writing Approaches of Visual Learners

4.2.2. Research Question Five

The fifth research question intended to explore the mental processes of developing a narrative writing activity among EFL learners with auditory learning style. The detected data from the analysis of the auditory learners' mind patterns was as follows:

In the 1st writing, surprisingly, the majority of the students (N=5, 55%) had no special plan for creating their narration. Their thinking aloud transcriptions revealed that they decided to write the first sentence and sequentially kept going on their story as it appeared to them either by referring to their daily life experiences or imagining the content. Some other students utilized either top-down (N=2, 22%), considering the entire story prior to writing, or bottom-up (N=2, 22%) approach, recalling the required relevant words, making sentences and finally generating the final draft.

Their second writing showed an improvement at least in the approach they used since their mental patterns were categorized into two forms of top-down (N=6, 66%) and bottom-up (N=3, 33%). Accordingly, the same happened in their third writing as top-down (N=5, 55.5%) and bottom-up (N=4, 44.5%) approach users. In the 4th writing, top-down (N=3, 33%) and bottom-up (N=6, 66%) approaches were revealed. Nevertheless, in the fourth writing, the majority of the students showed to choose the required vocabularies and making sentences in advance to create the whole plot. Figure 6 displays the auditory learners' adopted approach in their four writings.

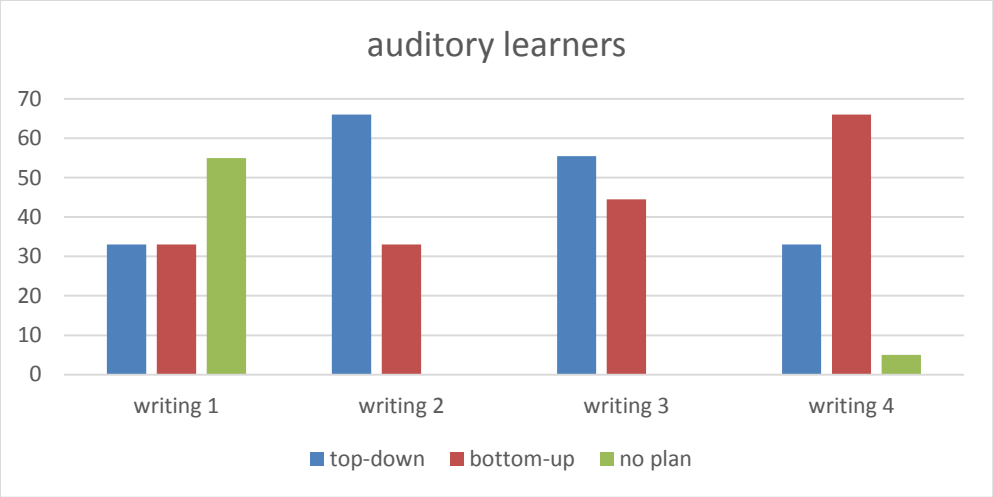

Figure 6. Writing Approaches of Auditory Learners

4.2.3. Research Question Six

The Sixth question tapped on the mental processes of developing a narrative writing activity among EFL learners with tactile learning style. Comparably, description of the tactile learners' think-aloud transcriptions displayed similar patterns to visual and auditory learners involved approaches. The first writing revealed that from the 22 learners present at the session, some (N=8, 36.36%) had a pre-planned story before they initiated their writing. This means that top-down users produced the entire event in their mind, considering items of the place, characters, objects, and the like to expand the whole event. Bottom-up approach utilizers (N=9, 45.4%), began by choosing words and then completing required sentences to create the story. However, some (N=5, 22.7%) had no specific plans and proceeded the story as it appeared in their mind

In the second writing, from the 22 present students, top-down users (N=14, 63.6%) outnumbered bottom-up users (N=8, 36.36%). Similarly, in their third writing, from the 21 students present at the session, we observed top-down (N=11, 52.4%), bottom-up (N=9, 43%), and one person who showed to have no any specific plan for her writing (N=1, 4.76%). In the fourth writing, from the 18 present students, 1 learner (5.55%) showed to have no prior plan to generate the story and preferred to keep writing as it occurred in her mind, 12 learners (66.66%) used bottom-up and 5 learners (27.27%) followed top-down approach. It is worth mentioning that those who mentioned that they read more books,

watched more movies, or communicated with families and friends had better commands of narrating the story. Figure 7 evinces the mental pattern of the tactile learners in their writings.

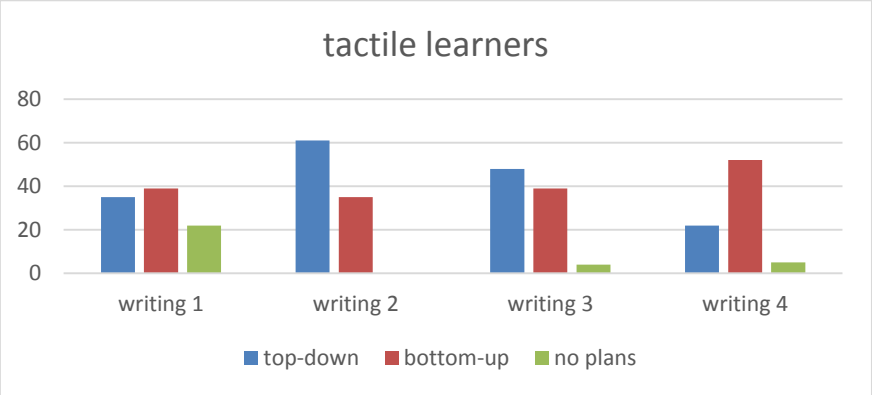

Figure 7. Writing Approaches of Tactile Learners

4.2.4. Research Question Seven

The seventh question intended to unravel any possible differences among the three groups of learners in terms of their mental processes in doing the writing tasks as a result of exposure to LS-related instructions. The following differences were observed:

Provision of the LS-related instructions revealed some characteristics of the mental processes in writing among three groups of the visual, auditory, and tactile learners as follows: first, visual learners tended to be more imaginative since they prioritized the orders of the events in their mind. Accordingly, due to their style of learning, visuals had better capacity to fantasize a story even if they had no exposure to that context. Moreover, generating a plot prior to their writing assisted them not to miss the entire story as they went through. Comparably, in the other two styles of auditory and tactile, they displayed two main mental patterns of top-down and bottom-up to prioritize their narration. Furthermore, the ongoing comparison of the two approaches uncovered the fact that the number of visual learners who used top-down approach increased from the first task to the last one whereas bottom-up users displayed a decrease. As for the auditory learners, the utilization of the two approaches fluctuated. This means in the first writing, both approaches were used by equal number of learners; in the second task, top-down outnumbered the bottom-up which was in contrary to the third writing. And finally, in the

fourth writing, again bottom-up users were more. As for the tactiles, the first to third writing, top-down approach users showed to be the majority while in the fourth writing bottom-up utilizers outnumbered in their usage.

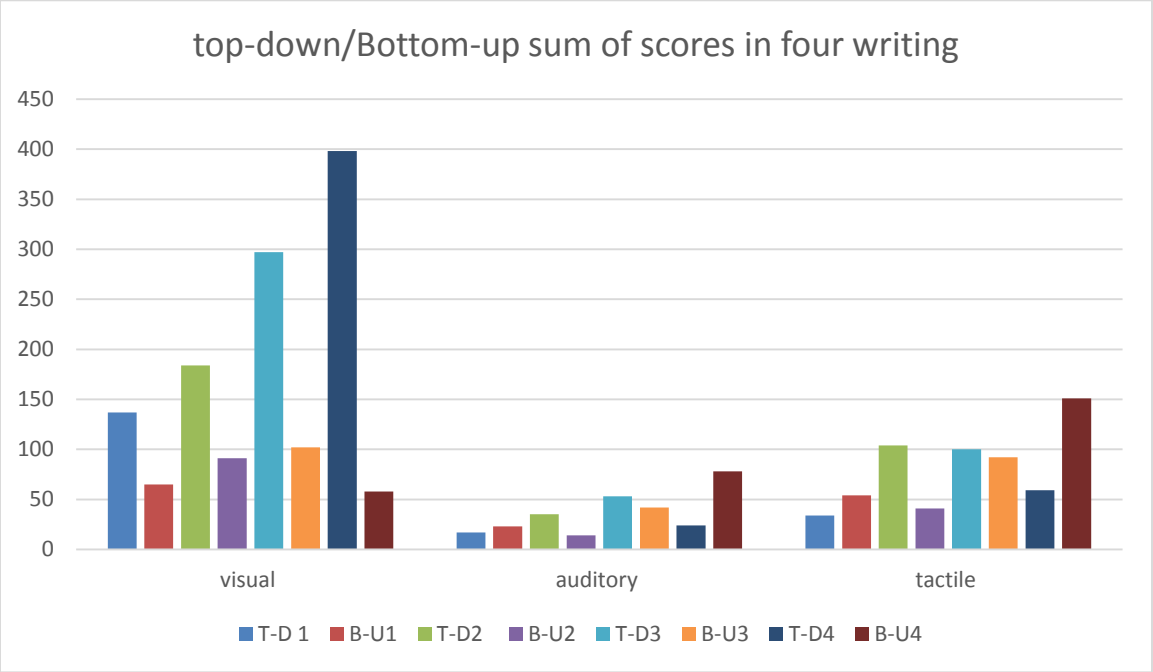

Figure 8. Writing scores of the two approaches among visual, auditory, and tactile

As Figure 8 displays, within this process two mind patterns were revealed: a) the learners considered the whole plot (the entire story, its characters, order of events, the required words or sentences) and then started to write. This means that they had a top-down plan for their writing, and b) the learners initially thought about the relevant words and sentences and after that began to expand the story. They displayed to follow a bottom-up approach of writing. Nevertheless, a minority of the learners mentioned that they had no special plan for their writing and they just wrote the beginning sentence and let go as events came to their minds.

5. Discussion

The researchers of the current study attempted to investigate whether adopting learning style-oriented instructions could have any impact on the development of narrative writing performance of the learners considering their preferred sensory styles of visual, auditory,

and tactile. Moreover, aimed at revealing the mind patterns of the learners, the researchers exposed the participants to think aloud protocol, as they were writing, to reveal how they initiated, organized, and expanded their thoughts. The obtained results revealed that visual-based instruction could improve visual-oriented learners' writing in an ongoing process. In the same vein, tactile-based instructions improved narrative writing of the tactile-oriented learners. It was further revealed that auditory learners' performances across time bore fluctuation in that the difference between the first and second performances was not significant, the difference between the second and third means turned out to be significant, and the third and fourth means were non-significantly different. However, their overall development was noticeable attested by the significant difference between the first and fourth writing performances, which implies that exposure of auditory learners to auditory-based teaching assisted their gradual development across time. The fluctuation may be explained by the observation that the auditory learners manifested slim imagination power when asked to talk about their feelings and experiences. Compared with the other two groups, they kept showing much more mix-up and lack of idea as to what to write. In their third writing (about sickness) however, they showed considerable improvement as they had personally experienced the subject, hence their better narration.

Moreover, the data displayed two main mental approaches of top-down and bottom-up among the three groups by which by learners narrated the events of the given topics. Besides, the detected result showed that top-down approach users outnumbered in all four narrations in addition to obtaining higher scores comparing to bottom-up users. As for auditory and tactile oriented learners, the two writing approaches had fluctuation in the four writing tasks. This means in both groups, using top-down or bottom-up approaches were not fixed in increase or decrease of their usage. Plus, in all three groups, top-down revealed to gain higher scores comparing to bottom-up users. Nonetheless, some of them in all the three groups showed to have no specific approach as they write and they just let their thoughts go.

Based on a vast number of studies on the usefulness of involving learning styles in the process of teaching such as Mirshekaran and Namaziandost (2018), Cools and

Rayners (2011), Oxford (2001), Pitenoee et al., (2017), learners' preferred styles of learning can assist them to organize their mind, recall required data from their memory, and convert their thoughts into performances better. Wherefore, the evaluation of the scores of the four writings of all groups revealed a significant improvement from writing one to writing four. Learners' styles of learning combine absorbing input simpler; then, organize, and process that information (DePorter & Hernacki, 2015 as cited in Albeta et., al, 2021). Therefore, involving learning styles in teaching the material and designing relevant activities can maximize the achievement of the language learners. Furthermore, as several researchers (Akpan, 2022; Imuta et al., 2018; Berns & Erickson,2001) mentioned, contextualizing the input can create a feasible learning environment in addition to the fact that it can make the content real for the learners.

The present research also is congruent with several studies including Lan and Anh (2022), Alabere and Shapii (2019), Pincas (1982) which claimed that exposing learners to process and product approaches of writing can foster their thinking ability to organize their thoughts and produce a final draft following logical steps of writing process.

6. Conclusions

As mentioned earlier, the researchers of the present study attempted to investigate whether exposure of the learners to instructions geared with their preferred learning styles could increase their narrative writing performances. It also tried to probe the mental patterns of the visual, auditory, and tactile groups when integrated with their preferred styles. To fulfill the goal, learners were asked to think aloud while involved in writings. With the rejection of first three hypotheses, it can be concluded that the involvement of learning styles could have a significant effect on the writing ability of the three styles. Furthermore, the content analyses of the learners' voices revealed the existence of two particular mental pattern of top-down and bottom-up approaches among the three groups. Finally, there was a difference among the three groups of learners regarding the order and amount of the use of top-down and bottom up approaches as discussed above.

The findings of the present study were in line with Albeta et al., (2021), Brown and Kelsey (2013), and Oxford (2011) who concluded the effective role of learning styles on

the improvement of the learners' achievement. Accordingly, Howard-Jones (2014) discovered that 95% of teachers in Great Britain, The Netherlands, Turkey, Greece, and China believed that students had better understanding if their preferred learning styles were incorporated and integrated with their instruction of the materials.

Based on the conclusions and implications described in this study, the researchers recommend other researchers to involve learning styles in their studies to obtain higher performances of narrative writing skills of young EFL learners. Accordingly, teachers can scaffold the students' minds and let them pass through the process of writing based on their detected learning styles.

However, since the participants of the current study were the only accessible group, replicating another research with other groups of: a) higher proficiency level; b) older age; c) males; and d) other learning styles-oriented learners with equal numbers could lead to different results. Moreover, the focus of the present study was on narrative genre of writing skill; therefore, utilizing other genres could yield other findings.

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A comparative study of novice and experienced EFL teachers' remotivational strategies: Ecological systems and Self-determination theories in perspective

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Abstract

This study, drawing on a dual theoretical standpoint constituting ecological systems theory (EST) and self-determination theory (SDT), compared Iranian novice and experienced EFL teachers' remotivational strategies. The participants, selected based on convenience sampling technique, comprised two equal 32-member groups of novice and experienced EFL teachers teaching different proficiency levels at six language institutes. To gather data, semi-structured interviews were conducted. The results of thematic data analysis indicated that novice and experienced teachers were approximately similar in terms of the emerging theme instances situated within the integrative SDT/EST framework. Nonetheless, novice and experienced teachers were markedly different concerning the number of theme instances for each SDT facet positioned in the EST layers. Moreover, the results of Chi-square test demonstrated significant differences between novice and experienced teachers in terms of the number of themes existing in the SDT/EST frame. The results, enhancing teacher educators' understanding of the similarities and disparities between novice and experienced teachers' perceptions of remotivational strategies, can provide teachers and teacher educators with awareness concerning how remotivational strategies are nested across multiple systems while simultaneously being informed by a certain motivation-specific theory.

Keywords: Ecological Systems Theory (EST), Motivation, Remotivational Strategies, Self-determination Theory (SDT), Teaching Experience

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1. Introduction

Motivation, characterized as the students' incentive and desire to engage in sustained learning (Darvin & Norton, 2021; Loewen & Reinders, 2011), is construed to play a cardinal role in the process of Second Language Acquisition (SLA) (Dörnyei, 2020). Foregrounding the paramount importance of motivation and its integral role in language learning, Dörnyei (2001, 2020) contends that motivation is the prominent driving force behind the SLA process. Confirming the centrality of motivation, researchers (Hu, 2011; Zheng et al., 2023) have also found that a great number of English language learners believe that their lack of success in learning ESL/EFL is rooted in demotivation. Such empirical evidence has encouraged many researchers (e.g., Csizer & Dörnyei, 2005; Dörnyei & Ushioda, 2011; Gao et al., 2022; Pae, 2008; Ramage, 1990) to attempt to identify the sources of demotivation among second language learners from both learners and teachers' perspectives.

Not only having an insight into the sources of demotivation is of great assistance in removing the obstacles to motivation, but also determining the practical ways or intervening strategies to remotivate learners is also pivotal (Afshari et al., 2019). In essence, measures should be taken to remotivate learners who become demotivated during the language learning process (Sun, 2018; Wang & Littlewood, 2021; Wu et al., 2020; Zhang et al., 2020). However, as stated by Dörnyei and Ushioda (2011), the main problem is that teachers are not completely familiar with the strategies that can be used to decrease the impacts of demotivational factors to remotivate learners and maintain their motivation. Therefore, studies are required to contribute toward the identification of the strategies which can assist teachers in remotivating their demotivated learners (Song & Kim, 2017; Wang & Littlewood, 2021). A distinction should be made here for differentiating between motivational and remotivational strategies as the focus of the current investigation is on remotivational strategies and not motivational strategies. While motivational strategies are characterized as those strategies employed by teachers to initiate and sustain learners' motivation (Cheng & Dörnyei, 2007; Tim et al., 2021; Yang & Sanchez, 2021), remotivational strategies refer to those strategies which are employed by teachers to motivate the demotivated learners and bring back motivation online again (Falout, 2012; Falout et al., 2013; Song & Kim, 2017; Wang & Littlewood, 2021).

Remotivational strategies can be subject to influences from teacher-related factors such as teaching experience.

As the review of literature indicates teaching experience, as an important factor, influences teachers' beliefs, cognitions (Sun & Zhang, 2022), and interpretations regarding classroom events (Wolff et al., 2017), which can affect their instructional practices. Therefore, teaching experience, as an antecedent to the formation of teachers' cognition and perceptions, should be investigated when it comes to psychological constructs such as motivation and remotivational strategies. However, there is a paucity of research exploring novice and experienced teachers in terms of their perceptions of remotivational strategies. Moreover, the results of previous studies have yielded conflicting findings in terms of novice and experienced teachers' perceptions in general. While some investigations (e.g., Gatbonton, 2008; Karimi & Asadnia, 2022; Koni & Krull, 2018; Shvarts & Bakker, 2019; Sun & Zhang, 2022; Tschannen-Moran & Hoy, 2007; Westerman, 1991; Wolff et al., 2017) have revealed disparities between novice and experienced teachers' perceptions, others (e.g., Fitriyah et al., 2022; Estaji & Ghiasvand, 2022; Bennett et al., 2013) have divulged similarities in this respect. Accordingly, the issue of teaching experience in relation to teachers' perceptions merits more research to partially offer a resolution to such contradictory findings.

A review of extant empirical investigations into teachers' perceptions in general (e.g., Jalilzadeh & Coombe, 2023; Kic-Drgas et al., 2023), novice and experienced teachers' perceptions (e.g., Fitriyah et al., 2022; Scherer et al., 2023), and teachers' perceptions of motivational strategies (e.g., Al-Qahtani & Alwaheebi, 2023; Jeon & Lee, 2023) in particular, indicates that such studies have adopted single theoretic perspectives. However, in this study, we capitalized on an integrative framework encompassing the quadripartite EST, consisting of microsystem, mesosystem, exosystem, and macrosystem layers (Bronfenbrenner, 1979), and the tripartite SDT including autonomy, relatedness, and competence dimensions (Ryan & Deci, 2000). Such a dual vantage point can provide a holistic framework to unravel teachers' perceptions of remotivational strategies (Author et al., 2022).

2. Review of the Related Literature

2.1. Remotivational Strategies

Motivation as a factor intertwined with engagement stands at the center of the language acquisition processes (Dörnyei, 2020: Khanzadeh Darabi & Memari Hanjani, 2024). Accordingly, it is highly important to remotivate the demotivated learners in the learning process. Remotivational strategies refer to those specific steps that teachers take in an attempt to maintain learners' motivation or help learners become motivated again (Jung, 2011). In today's educational programs, assisting demotivated learners in maintaining their motivation or becoming motivated again is an important aspect and consequently teachers should accommodate remotivational strategies in their teaching (Ghasemi, 2021). Awareness about the strategies to remotivate learners can assist teachers help demotivated learners in a systematic way and, thus, pave the way for taking appropriate measures in dealing with those EFL learners who have lost their motivation along the course of language learning (Falout, 2012). Therefore, researchers (e.g., Albalawi & Al-Hoorie, 2021; Falout, 2012; Falout et al., 2013; Jung, 2011; Sahragard & Ansaripour, 2014; Song & Kim, 2017; Wang & Littlewood, 2021) have realized that it is vital to investigate teachers' remotivational strategies.

As Maeng and Lee (2017) maintain, while studies have investigated the role of motivation in learning and teaching, more research on teachers' motivational strategies is required. Moreover, although there have been several studies investigating motivational strategies, the area of teachers' remotivational strategies is quite underexplored (Wang & Littlewood, 2021). Furthermore, not adequate attention has been paid to teachers' remotivational strategies from an integrative perspective encompassing the Ecological Systems Theory (EST) and Self-determination Theory (SDT) (Author et al., 2022). Additionally, remotivational strategies have their roots in the construct of motivation and any motivation-related construct such as remotivation is a complex and multifaceted construct. Thus, exploring the remotivational strategies necessitates an integrative framework in which remotivational strategies can be viewed through a multi-layered and multi-faceted lens and a more holistic picture of motivation and remotivational strategies is provided (King, 2021).

2.2. Ecological Systems Theory (EST)

The EST postulated by Bronfenbrenner (1979) examines human development based on ecosystems, which are comprised of four layers: microsystem, mesosystem, exosystem, and macrosystem. As the innermost layer the microsystem has to do with the immediate setting where the person is undergoing development. There is a close relationship between this layer and a face-to-face interaction among persons and objects in the immediate situation. The mesosystem is concerned with a setting where the developing person is in situations beyond the immediate setting. The exosystem has to do with the linkages and processes occurring between two or more settings, with one of them lacking the developing person; however, the events take place here that indirectly influence processes in an individual's immediate setting (Bronfenbrenner, 1979). Finally, the macrosystem contains micro-, meso-, and exosystems as a reflection of a culture or subculture. The strand of very recent studies (e.g., Amali et al., 2023; Chong, 2021; Chong et al. 2023), adopting an EST perspective in addressing a lens offering the potential to conduct layered-analysis, substantiate the rigor of this framework for studying complex constructs including remotivational strategies. As Bronfenbrenner (1979) holds, EST has the potential to provide a quadripartite layered and interconnected lens helping to map the developmental patterns of an individual in relation to a specific construct.

2.3. Self-determination Theory (SDT)

One of the most applicable theories of motivation in educational psychology is self-determination theory (SDT) (Dorniye & Ushioda, 2021). Dorniye and Ushioda (2021), highlighting the uniqueness of SDT, assert that this theory places emphasis on "people's inherent motivational propensities" (p. 17), which renders this theory as an important motivational theory with the potential to offer immense contributions to the study of motivation in L2 settings (Alamer et al., 2023; Sumi & Sumi, 2023). Deci and Ryan (1985) distinguished between different types of motivation based on different reasons or goals that give rise to an action in SDT. According to this theory and based on Deci et al., (1989), "to be self-determining means to experience a sense of choice in initiating and regulating one's own actions" (p. 580). Accordingly, self-determination is seen as a prerequisite for any behavior to be inherently satisfying (Dörnyei, 1994).

Based on SDT, individuals seek to meet three innate psychological needs

including autonomy, relatedness, and competence (Deci & Ryan, 1985). As Ryan and Deci (2000) hold, relatedness is characterized as the learners' established feelings of being welcomed on the part of the teachers and the speaking community. Competence refers to the learners' feelings of capability in learning the subject matter. Autonomy features the learners' feelings of their ability in choosing the subject under instruction and the ways to independently use the learning materials rather than the external impositions being excreted on the learners' choices.

2.4. Teaching Experience

Novice and experienced teachers display variations and differences in terms of their perceptions, which result in disparities in terms of their instructional practices (Berliner, 2001; Farrell, 2012; Sun & Zhang, 2022; Tsui, 2003). Novices need to take into account the potential effect of all available information and actively search for information since they have not yet developed the type of knowledge that allows for efficient and effective cognitive processing (Boshuizen & Schmidt, 2008; Haider & Frensch, 1996). Therefore, extensive practice for experienced teachers leads to accumulation of knowledge, which can help such teachers implement instructional practices more effectively and efficiently. In contrast, novice teachers due to a lack of knowledge gained from extensive experience cannot make informed and efficient instructional decisions (Fitriyah et al., 2022).

A review of extant empirical literature indicates that novice and experienced teachers are different in terms of self-efficacy beliefs (Tschannen-Moran & Hoy, 2007), interpretations of problematic classroom management events (Wolff et al., 2017), decision making (Westerman, 1991), pedagogical knowledge (Gatbonton, 2008), professional growth dimensions and teaching efficacy (Akiri & Dori, 2022), cognitions and practices in terms of sustainable teacher development (Sun & Zhang, 2022), student-teacher interaction patterns (Sha et al., 2022), language assessment literacy (Fitriyah et al., 2022), perceptions about classroom supervision and professionalism (Estaji & Ghiasvand, 2022), pedagogical cognitions in online instructional contexts (Karimi & Asadnia, 2022), factors antecedents to retaining teachers in the field (Bennett et al., 2013), and perceptions in regard to sources of demotivation among learners (Afshari et al., 2019). However, previous investigations lack a rigorous conceptual framework for studying teachers' perceptions in general and teachers' perceptions of remotivational

strategies in particular. Thus, the current study, situated in an integrative theoretic framework encompassing SDT and EST, aimed at investigating Iranian novice and experienced EFL teachers' perceptions of remotivational strategies. It should be noted that the SDT and EST exist in isolation in the extant literature. However, in this study, in a novel attempt, we integrated these two theories to provide a multi-layered and multi-faceted analysis of teachers' remotivational strategies.

To address the objective of this study, the following research question was formulated:

- **RQ:** What are the areas of matches and/or mismatches between the perceptions of Iranian novice and experienced EFL teachers for the strategies they adopt to remotivate Iranian EFL learners from an integrative EST/SDT perspective?

3. Methodology

3.1. Design

This study mainly adopted a qualitative design in which only qualitative data were collected and analyzed. However, to check the significance of the similarities/differences between experienced and novice teachers' perceptions, statistical analyses were also employed. Thus, semi-structured interviews were used to gather the required data. The collected data became then subject to thematic analysis to unravel novice and experienced EFL teachers' remotivational strategies from an EST and SDT theoretical perspective.

3.2. Participants

The participants comprised a total of 64 Iranian EFL teachers teaching different levels of language proficiency in six language institutes in Isfahan and Hamedan provinces. All the participants were native speakers of Persian selected based on convenience sampling technique from both male (N=34) and female (N=30) teachers. Their age ranged between 21 and 45. The teachers with less than three years of teaching experience (N=32) were considered novices and teachers with more than three years of experience (N=32) were regarded as experienced teachers in line with Farrell (2012). Since this study aimed to compare the remotivational strategies between novice and experienced teachers, an equal number of novice and experienced teachers was recruited. The participants were selected only from among those teachers teaching at language institutes and EFL

teachers teaching in public state schools were excluded due to two reasons. Firstly, it was not manageable for the researcher to choose participants from public schools. Moreover, delimiting the participants to a specific educational context would yield more consistent results as remotivational strategies are context-sensitive (Noels et al., 2001).

3.3. Instruments

Semi-Structured Interviews

Semi-structured interviews were conducted to uncover the strategies Iranian EFL teachers perceive to use to remotivate Iranian EFL learners. To develop the interview questions, first, the literature related to remotivational strategies (e.g., Albalawi & Al-Hoorie, 2021; Falout, 2012; Falout et al., 2013; Jung, 2011; Sahragard & Ansaripour, 2014; Song & Kim, 2017; Wang & Littlewood, 2021) was extensively reviewed and an initial list of 12 questions was prepared. Following that, the questions were situated within the integrative EST/SDT theoretic perspective. This list of questions became subject to expert opinions in a panel of three Ph.D. holders in the field of TEFL to assure content validity and the relevance of the questions to the adopted theoretic framework. Afterward, the list of questions was reviewed and minor modifications were made. Moreover, three questions were discarded due to having overlapping content and a final list of nine questions won the approval of the panel. Thus, the list of questions consisted of nine questions in which the first two questions addressed remotivational strategies from a general perspective to help set the stage for the whole interview process. Questions 3, 4, 5, and 6 addressed the EST perspectives in regard to remotivational strategies, and the last three questions tapped into teachers' perceptions of remotivational strategies via an SDT lens. Next, this list of questions was piloted on five teachers to modify any vagueness and ambiguity in regard to content in an attempt to enhance the readability and clarity of the questions. The final list of questions (See Appendix) was prepared after minor changes based on the teachers' comments at the piloting stage. It should be noted that the interviews in the present study were of a semi-structured type and thus the questions developed were just used for initiating the interview process as the whole process of the interview was conducted in a dialogic manner (Brown & Danaher, 2017).

3.4. Data Collection and Analysis Procedure

At the onset of the study, a group of 64 language teachers were recruited to collect the

required data through semi-structured interviews. Before conducting the interviews, these teachers were briefed regarding the objectives of the study. To observe ethical considerations, the participants were informed that the collected data would be used only for research purposes. Moreover, they were told that the collected data would be kept confidential. Following that, they were given a short demographic questionnaire to identify the novice and experienced teachers. To categorize teachers into experienced and novice, Farrell's (2012) classification was employed. Based on Farrell's (2012) classification, in this study teachers with less than three years of teaching experience were considered novices and those with above three years of teaching experience were regarded as experienced ones. Subsequently, through making proper arrangements and checking class hour schedules of the teachers, they were interviewed for the strategies they adopted to remotivate Iranian EFL learners. The duration of interviews was within the range of 45 minutes to 1.5 hours. The interviews were carried out face-to-face in Persian which was the mother tongue of the participants. The reason behind using participants' mother tongue was that they felt more convenient with Persian compared to English as they were able to express their perceptions without the possible hindrance caused by a second language. Note should be taken that although the participants were English teachers and speculatively had a satisfactory level of English language proficiency, the researcher gave them the choice of either of the two languages for the interview process and all the participants selected their mother tongue. The interview contents were audio-recorded and transcribed verbatim for content analysis. The excerpts reported in the current manuscript are the translated versions from Persian into English.

To analyze the data, the procedures of thematic analysis proposed by Auerback and Silverstein (2003) were followed. As Auerback and Silverstein (2003) maintain, six stages should be conducted in the analysis of qualitative data. These phases are: getting familiar with the data, coming up with initial codes, looking for themes among codes, reviewing the themes, defining and labeling the themes, and producing the final report. All these stages were followed strictly by the two analyzers to produce the final report. To establish trustworthiness, as an important step in qualitative research, in line with Merriam (1997), the results of the analysis were submitted to 10 participants, 5 from each group,

to make sure that the interpretation of the data had been carried out appropriately. To establish credibility, the researcher and a research assistant with a Ph.D. degree in applied linguistics independently categorized the data. Following that, the degree of agreement was calculated based on Holsti's (1969) coefficient of reliability. The value turned out to be 0.89, which indicated an acceptable level of consistency.

4. Results

4.1. Comparing novice and experienced teachers' perceptions in the microsystem layer

The microsystem includes elements such as individuals and objects existing in the immediate context (Bronfenbrenner, 1979). Thus, the microsystem in an EFL context constitutes instructional materials and learners' interactions among themselves and with the teacher in the immediate teaching-learning environment. Moreover, SDT constitutes autonomy, relatedness, and competence (Ryan & Deci, 2000). Tables 1 and 2 present the results of thematic analysis for novice and experienced teachers' perceptions of remotivational strategies in the microsystem layer of EST and the three facets of SDT.

Table 1. Results of Thematic Analysis for the Microsystem Layer of EST and SDT Dimensions for Novice Teachers

No	Autonomy	Frequency and Percentage	Relatedness	Frequency and Percentage	Competence	Frequency and Percentage	Total
1	Giving learners control over the learning content	2 (6.25%)	Encouraging learners to speak together	10 (31.25%)	Complementing learners who have good performance	24 (75%)	36
2			Asking learners to respect each other's opinions	20 (62.5%)			20
Total		2		30		24	56

Table 2. Results of Thematic Analysis for the Microsystem Layer of EST and SDT Dimensions for Experienced Teachers

No	Autonomy	Frequency and Percentage	Relatedness	Frequency and Percentage	Competence	Frequency and Percentage	Total
1	Giving learners control over learning content.	25 (78.12%)	Encouraging learners to cooperate in learning.	27 (84.37%)	Encouraging learners to self-assess themselves.	31 (96.87%)	83
2	Encouraging learners to voice their needs and wants	24 (75%)	Asking learners to respect each other's opinions	25 (78.12%)	Encouraging learners to compare their performance with others	30 (93.75%)	79
3			Teaching learners to empathize with other classmates	23 (71.87%)	Complementing learners who have good performance	28 (87.5%)	51
Total		49		75		89	213

Table 3 displays the results of the thematic analysis for comparing the theme instances of novice and experienced teachers in regard to the microsystem layer.

Table 3. Comparing the Novice and Experienced Teachers' Results of Thematic Analysis for the Microsystem Layer

Experience level	Autonomy	Relatedness	Competence	Total Mentions
Novice	2	30	24	56
Experienced	49	75	89	213

As indicated in Table 3, both novice and experienced teachers mentioned themes in regard to the three facets of SDT (autonomy, relatedness, and competence) in the microsystem layer. Nevertheless, novice and experienced teachers are markedly different not only in the total mentions related to SDT dimensions but also in the individual dimensions of SDT in the microsystem layer. As shown in Table 3, the total number of themes for novice teachers was 56 while that of experienced teachers equals 213. Moreover, novice teachers had two theme mentions for the autonomy aspect of SDT whereas the corresponding number for experienced teachers is 49. Likewise, the number of theme instances for the relatedness aspect of SDT for novice and experienced teachers was 30 and 75, respectively. Similarly, the number of theme instances with respect to the competence dimension of SDT for novice and experienced teachers was

24 and 89.

To investigate if there existed a significant difference between the number of theme instances for the novice and experienced teachers in the microsystem layer, a Chi-square test was run. Table 4 portrays the results of the Chi-square test.

Table 4. Results of the Chi-square Test for the Theme Instances between Novice and Experienced Teachers in the Microsystem Layer

Test Statistics	
	Novice and Experienced Microsystem
Chi-Square	91.632a
df	1
Asymp. Sig.	.000

As indicated in Table 4, there was a significant difference in the number of theme instances between novice and experienced teachers in the microsystem layer ($\chi 2$ = 91.63, df = 1, p=.00 < 0.001). In other words, there was a significant difference between the frequency of theme mentions in the microsystem layer for novice (Frequency=56) and experienced (Frequency=213) teachers.

4.2. Comparing novice and experienced teachers' perceptions in the mesosystem layer

The mesosystem encompasses the settings existing beyond the immediate context while such settings have a close relevance to the developing person (Bronfenbrenner, 1979). Thus, the mesosystem in an EFL context encompasses other teachers and colleagues. Tables 5 and 6 depict the results of thematic analysis for novice and experienced teachers' perceptions of remotivational strategies in the mesosystem layer of EST and the three facets of SDT.

Table 5. Results of Thematic Analysis for the Mesosystem Layer of EST and SDT Dimensions for Novice Teachers

No	Autonomy	Frequency and Percentage	Relatedness	Frequency and Percentage	Competence	Frequency and Percentage	Total
1	Asking other teachers about how they acknowledge learners' preference	1 (3.12%)	Seeking colleagues' advice concerning the improvement of interpersonal relationships between learners	7 (21.85%)	Seeking more experienced teachers' expertise in learners' self-assessment techniques	15 (46.87%)	23
Total		1		7		15	23

Table 6. *Results of Thematic Analysis for the Mesosystem Layer of EST and SDT Dimensions for Experienced Teachers*

No	Autonomy	Frequency and Percentage	Relatedness	Frequency and Percentage	Competence	Frequency and Percentage	Total
1	Enquiring the supervisor about the ways learner control can be promoted	22 (68.75%)	Seeking colleagues' advice concerning the improvement of interpersonal relationships between learners	20 (62.5%)	Seeking more experienced teachers' expertise in learners' self-assessment techniques	16 (50%)	58
2	Asking other teachers about how they acknowledge learners' preferences	21 (65.62%)	Asking the board of managers for holding sessions on how to cultivate rapport among learners	19 (59.37%)	Asking the board of education for holding sessions on self-assessment	15 (46.87%)	55
Total		43		39		31	113

Table 7 presents the results of the thematic analysis for comparing the theme instances of novice and experienced teachers with respect to the mesosystem layer.

Table 7. Comparing the Novice and Experienced Teachers' Results of Thematic Analysis for the Mesosystem Layer

Experience level	Autonomy	Relatedness	Competence	Total Mentions
Novice	1	7	15	23
Experienced	43	39	31	113

As shown in Table 7, both novice and experienced teachers have mentioned themes in relation to the three facets of SDT in the mesosystem layer. Nonetheless, novice and experienced teachers are substantially different not only in the total number of mentions related to SDT dimensions but also in the individual aspects of SDT (autonomy, relatedness, and competence) in the mesosystem layer. As presented in Table 7, the total number of themes for novice teachers was 23 whereas experienced teachers mentioned 113 themes. Furthermore, novice teachers had only one theme mentioned for the autonomy aspect of SDT whereas the corresponding number for experienced teachers was 43. Similarly, the number of theme instances for the relatedness aspect of SDT for novice and experienced teachers were 7 and 39, respectively. In a similar vein, the number of theme instances with respect to the competence dimension of SDT for novice and experienced teachers were 15 and 31.

To explore whether there was a significant difference between the number of theme instances for the novice and experienced teachers in the mesosystem layer, a Chi-square test was conducted. Table 8 portrays the results of the Chi-square test.

Table 8. Results of the Chi-square Test for the Theme Instances between Novice and Experienced Teachers in the Microsystem Layer

Test Statistics	
	Novice and Experienced Mesosystem
Chi-Square	59.559a
df	1
Asymp. Sig.	.000

As presented in Table 8, there was a significant difference in the number of theme instances between novice and experienced teachers in the mesosystem layer ($\chi 2 = 59.55$, df = 1, p=.00 < 0.001). In other words, there was a significant difference between the frequency of theme mentions in the mesosystem layer for novice (Frequency=23) and experienced (Frequency=113) teachers.

4.3. Comparing novice and experienced teachers' perceptions in the exosystem layer

The exosystem layer covers the relationships, linkages, and processes taking place between the previous layers (Bronfenbrenner, 1979). As Bronfenbrenner explains further, the exosystem layer at a conceptual level shows the linkages between the microsystem and mesosystem layers via a process-oriented lens. Tables 9 and 10 display the results of thematic analysis for novice and experienced teachers' perceptions of remotivational strategies in the exosystem layer of EST and the three facets of SDT.

Table 9. Results of Thematic Analysis for the Exosystem Layer of EST and SDT Dimensions for Novice Teachers

No	Autonomy	Frequency and Percentage	Relatedness	Frequency and Percentage	Competence	Frequency and Percentage	Total
1		0	Explaining the linkages between cooperative learning and motivation in professional meetings	4 (12.5%)	Emphasizing a process-oriented perspective towards learners' competence in teacher development sessions	5 (15.62%)	9
Total		0		4		5	9

Table 10. Results of Thematic Analysis for the Exosystem Layer of EST and SDT Dimensions for Experienced Teachers

No	Autonomy	Frequency and Percentage	Relatedness	Frequency and Percentage	Competence	Frequency and Percentage	Total
1	Explaining how learners' autonomy is related to motivation in professional meetings	18 (56.25%)	Explaining the linkages between cooperative learning and motivation in professional meetings	17 (53.12%)	Emphasizing a process-oriented perspective towards learners' competence in teacher development sessions	15 (46.87%)	50
2	Drawing colleagues' attention to promoting learners' autonomy in teacher	17 (53.12%)	Explicating how teachers' acknowledgment of the benefits of cooperation lead to more motivation in	16 (50%)	Explaining the linkages between colleagues' perceptions of competence	15 (46.87%)	48

	development sessions	teachers' meetings	and development of learners' competence in teachers' meetings	
Total	35	33	30	98

Table 11 demonstrates the results of thematic analysis for comparing the theme instances of novice and experienced teachers in relation to the exosystem layer.

Table 11. Comparing the Novice and Experienced Teachers' Results of Thematic Analysis for the Exosystem Layer

Experience level	Autonomy	Relatedness	Competence	Total Mentions
Novice	0	4	5	9
Experienced	35	33	30	98

According to the information in Table 11, both novice and experienced teachers mentioned themes in regard to the relatedness and competence aspects of SDT in the exosystem layer. However, novice teachers did not generate any themes concerning the autonomy aspect of SDT at the exosystem layer. As shown in Table 11, novice and experienced teachers were markedly different not only in the total mentions related to SDT dimensions but also in the individual dimensions of SDT in the exosystem layer. Based on the information in Table 11, the total number of themes for novice teachers in the exosystem layer was 9 while that of experienced teachers equaled 98. Moreover, novice teachers had no theme mentions for the autonomy aspect of SDT whereas the corresponding number for experienced teachers was 35. Likewise, the number of theme instances for the relatedness aspect of SDT for novice and experienced teachers were 4 and 33, respectively. Similarly, the number of theme instances in respect to the competence dimension of SDT for novice and experienced teaches were 5 and 30.

To probe the significant difference between the number of theme instances for the novice and experienced teachers in the exosystetm layer, a Chi-square test was applied. Table 12 shows the results.

Table 12. Results of Chi-square Test for the Theme Instances between Novice and Experienced Teachers in the Exosystem Layer

Test Statistics	
	Novice and Experienced Exosystem
Chi-Square	74.028a
df	1
Asymp. Sig.	.000

As seen in Table 12, there was a significant difference in the number of theme instances between novice and experienced teachers in the exosystem layer ($\chi 2 = 74.02$, df = 1, p=.00 < 0.001). Put it another way, there was a significant difference between the frequency of theme mentions in the exosystem layer for novice (Frequency=9) and experienced (Frequency=98) teachers.

4.4. Comparing novice and experienced teachers' perceptions in the macrosystem layer

The macrosystem is characterized as the realization of a specific culture or subculture as the consequence of the combination of micro-, meso-, and exo systems (Bronfenbrenner, 1979). As Bronfenbrenner maintains further, the macrosystem is concerned with holding and promoting a multi-dimensional perspective towards the development taking place in the environment. Tables 13 and 14 demonstrate the results of thematic analysis for novice teachers' perceptions of remotivational strategies in the macrosystem layer of EST and the three facets of SDT.

Table 13. Results of Thematic Analysis for the Macrosystem Layer of EST and SDT Dimensions for Novice Teachers

No	Autonomy	Frequency and Percentage	Relatedness	Frequency and Percentage	Competence	Frequency and Percentage	Total
1		0	Holding and promoting a multidimensional view towards cooperative learning	2 (6.25%).		0	2
Total		0		2		0	2

Table 14. Results of Thematic Analysis for the Macrosystem Layer of EST and SDT Dimensions for Experienced Teachers

No	Autonomy	Frequency and Percentage	Relatedness	Frequency and Percentage	Competence	Frequency and Percentage	Total
1	Holding and promoting a holistic view towards accommodating learners' control and preferences	12 (37.5%)	Holding and promoting a multidimensional view towards cooperative learning	14 (43.75%)	Holding and promoting a multi-perspective, competence-development view in teaching and learning	11 (34.37%)	37
Total		12		14		11	37

Table 15 illustrates the results of thematic analysis for comparing the theme instances of novice and experienced teachers in relation to the macrosystem layer.

Table 15. Comparing the Novice and Experienced Teachers' Results of Thematic Analysis for the Macrosystem Layer

Experience level	Autonomy	Relatedness	Competence	Total Mentions
Novice	0	2	0	2
Experienced	12	14	11	37

As displayed in Table 15, experienced teachers mentioned the themes concerning the three facets of SDT in the macrosystem layer. Conversely, novice teachers failed to make any mentions regarding the autonomy and competence dimensions of SDT and only generated two theme instances concerning the relatedness aspect of SDT. Nevertheless, novice and experienced teachers were substantially different not only in the total number of mentions related to SDT dimensions but also in the individual aspects of SDT in the macrosystem layer. As presented in Table 15, the total number of themes for novice teachers in the macrosystem layer was 2 whereas experienced teachers mentioned 37 themes. Furthermore, novice teachers mentioned no theme for the autonomy aspect of SDT whereas the corresponding number for experienced teachers was 12. Similarly, the number of theme instances for the relatedness aspect of SDT for novice and experienced teachers was 2 and 14, respectively. Moreover, the number of theme instances with respect to the competence dimension of SDT for novice and experienced teachers ranged between 0 and 11.

To explore whether there was a significant difference between the number of theme instances for the novice and experienced teachers in the macrosystem layer, a Chi-square test was performed. Table 16 exhibits the results.

Table 16. Results of the Chi-square Test for the Theme Instances between Novice and Experienced Teachers in the Macrosystem Layer

Test Statistics	
	Novice and Experienced Macrosystem
Chi-Square	31.410a
df	1
Asymp. Sig.	.000

As noticed in Table 16, there was a significant difference in the number of theme instances between novice and experienced teachers in the macrosystem layer ($\chi 2$ = 31.42, df = 1, p=.00 < 0.001). As such, there was a significant difference between the frequency of theme mentions in the macrosystem layer for novice (Frequency=2) and experienced (Frequency=37) teachers.

5. Discussion

Drawing on a dual theoretical standpoint constituting ecological systems theory (EST) and self-determination theory (SDT), this study aimed at comparing Iranian novice and experienced EFL teachers' remotivational strategies. The results showed both similarities and differences between the perceptions of novice and experienced teachers towards the strategies they adopted to remotivate Iranian EFL learners. As for similarities, the results demonstrated that both novice and experienced teachers touched upon all the SDT (microsystem, mesosystem, exosystem, and macrosystem) and EST facets (relatedness, autonomy, and competence) dimensions concerning the adoption of remotivational strategies. However, experienced teachers were markedly different from novices in the number of theme instances both from an SDT perspective and EST lens.

Consistent with the results of the current study, revealing similarities between novice and experienced teachers, some studies have shown that novice and experienced teachers are similar in terms of their perceptions. For instance, Fitriyah et al.'s (2022) results revealed similarities between novice and experienced EFL teachers' perceptions in fundamental principles in language assessment and using them in the classroom. In a

similar vein, Estaji and Ghiasvand's (2022) findings showed that both novice and experienced teachers had similar perceptions towards supervision. Similarly, Bennett et al.'s (2013) results indicated that both novice and experienced teachers had similar perceptions concerning the factors which made them stay in the teaching profession.

The similarities between novice and experienced teachers in terms of remotivational strategies can be ascribed to the holistic lens provided by the integrative SDT/EST theoretic perspective adopted in this study. As Van Lier (1997) maintains EST offers a lens "to look at the learning process, the actions and activities of teachers and learners, the multi-layered nature of interaction and language use, in all their complexity and as a network of interdependencies among all the elements in the setting" (p. 3). Additionally, the SDT has the protentional to address different dimensions and processes involved in motivation (Ryan & Deci, 2000) and consequently the motivational and remotivational strategies (Sadr Alavian et al., 2022). Accordingly, the multi-dimensional and holistic attributes of the integrative theoretic perspective adopted in this study provided the lens to capture the intricate nature of both novice and experienced teachers' perceptions regarding remotivational strategies.

The results of the present study concerning the differences between novice and experienced teachers resonate with the findings of previous studies such as those by Afshari et al. (2019). Similar to the findings of the current study, Afshari et al.'s results indicated marked differences between novice and experienced teachers' perceptions. Likewise, Gatbonton's (2008) findings revealed differences between novice and experienced teachers' perceptions in terms of different knowledge categories. Moreover, Sun and Zhang (2022) showed that both novice and experienced teachers favored a focus on instruction but novice teachers failed to implement their perceptions in practice, whereas the experienced counterparts carried it out consistently. Additionally, Karimi and Asadnia's (2022) results demonstrated disparities in the pedagogical cognitive frameworks of novice and experienced teachers.

The results concerning the differences between novice and experienced teachers in terms of remotivational strategies can be attributed to various approaches that experienced and novice teachers interpret information in the teaching process. As Rink et al. (1994) contend, experienced teachers pay attention to various facts, interpreting

information differently than novices. Studies have shown that experienced teachers seek to combine knowledge of teaching and learning when analyzing classroom events, while novices focus on surface-level concerns, including teacher and learner characteristics or behavior as well as disciplinary concerns (Tsui, 2003). In a similar vein, Shvarts and Bakker (2019) note that experienced teachers are more supportive and capable of promoting learner autonomy as one of the facets of SDT. Moreover, previous studies (Berliner, 2001; Farrell, 2012) show that expert teachers are characterized by having sophisticated, contextualized knowledge of classroom events, the ability to adapt and integrate their knowledge of types of events and students, and being more perceptive to the multidimensional complexity of classroom reality compared with novices. Therefore, the extensive practice and the more expanded repertoire of knowledge by experienced teachers may impact their capability to look for relevant cues in a more effective and efficient manner as compared with their novice counterparts.

5. Conclusion

The results of this study substantiated the findings of previous investigations concerning the similarities and differences between novice and experienced teachers' perceptions. Such findings underscore the importance of acknowledging and accommodating the potential of integrative frameworks in unraveling teachers' perceptions in general and teachers' perceptions of remotivational strategies in particular. The potential of integrative frameworks, such as the SDT/EST perspective, lies in that they provide a robust, multi-dimensional, and holistic perspective that can lend itself to uncovering the complexities and multi-dimensionalities inherent in language teachers' perceptions. The findings of the present study, apart from enriching the theoretical and empirical literature, shed light on how novice and experienced teachers conceptualized remotivational strategies.

In addition to the theoretical implications, the findings of the current research hold practical value in informing the creation of workshop resources within teacher education programs aimed at enhancing teachers' array of remotivational tactics for pedagogical implementation. More specifically, teacher educators need to develop their awareness in addressing novice teachers' repertoire of remotivational strategies as the findings of the current study indicated that they perceived to adopt fewer number of remotivational

strategies in comparison with their experienced counterparts. Novice teachers' awareness concerning the autonomy dimension of SDT needs to be fostered by teacher educators as the findings revealed that there were substantially fewer instances of autonomy-related themes in informing their remotivational strategies compared to other facets of SDT. Likewise, experienced teachers' awareness in regard to higher layers of EST needs to be raised as such teachers' perceptions were more inclined towards the microsystem and mesosystem layers and showed less tendency towards the upper layers of EST in informing their remotivational strategies.

In this study, only teachers' perceptions were sought via semi-structured interview content. Future research on the actual practice of remotivational strategies is recommended as previous investigations (Ha & Murray, 2023; Wang et al., 2020) have revealed incongruence between teachers' perceptions and their practices. Other investigations may compare teachers' remotivational strategies across private and public educational contexts as previous studies (Ghasemi, 2022; Simpson et al., 2022) have demonstrated contextual variations as factors contributing to teachers' perceptions. Future research may draw on other extant theoretical frameworks related to motivation such as motivational self-system to enrich the literature in terms of teachers' remotivational strategies in the light of EST.

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Appendix

Semi-Structured Interview Questions

- Have you ever thought about how you usually remotivate your learners?
- What do you think about remotivating your learners in general? What does remotivating your learners entail?
- What strategies do you use to remotivate your learners related to the immediate classroom setting and the objects in this context?
- What strategies do you use to remotivate your learners related to the situations beyond the classroom?
- What strategies do you use to remotivate your learners related to the interconnection between the classroom setting and the situations beyond the immediate classroom setting?
- What strategies do you use to remotivate your learners related to the creation of a culture of remotivating your learners encompassing the immediate classroom setting, the situations beyond the classroom, and the interconnection between the classroom setting and the situations?
- Do you use strategies which help learners develop a sense of autonomy?
- Do you use strategies which help learners develop a sense of relatedness so that they help learners in experiencing closeness and mutuality in interpersonal relationships?
- Do you use strategies which help learners develop a sense of competence in learners in a way that they assist learners in experiencing personal effectiveness?

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Qualitative analysis of teachers' views towards environmental education in rural schools

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Abstract

In recent years, attention to environmental education especially in rural environments has attracted the attention of many educational experts. The aim of the present study was to investigate the experiences of teachers in relation to environmental education in rural schools. To serve that end, a qualitative approach and phenomenological method were used. Consequently, unstructured interviews were conducted with 13 teachers using the purposeful sampling method. To analyze the data, thematic analysis was used. The analysis of the interviews revealed three main themes (regressive approach, progressive approach, and indifference approach), 13 sub-themes, and 31 refined themes. The findings of the research indicated teachers' lack of real involvement in environmental education, lack of trust in the efficiency of environmental education, absence of employing of new methods, superficial knowledge about the environment, and absence of attempts to use new methods in education. It is concluded that teachers play a significant role in environmental education, so training and preparing them can improve environmental education.

Keywords: Environmental Education, Teachers' Views towards Environmental Education, Environmental Education in Rural Schools

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1. Introduction

The current century can be interpreted as a century of extensive changes and transformations in various fields (Belt, 2023). These extensive changes and transformations, which are caused by social, political, economic and information technology developments in the current world, have a huge impact on various aspects of human life, including the environment (Gafoor, 2021). More precisely, the above changes have led to widespread damage to the environment and its various dimensions. Today, the environmental crisis is very serious and its scope has become very wide, so that humans have realized its harmful consequences on their lives and health (Kratel & Meski, 2022). Examples of these damages can be found even in developed countries. Indeed, millions of people suffer from hunger, homelessness and health issues (Bahrami, 2021). Global changes caused by global warming, the disposal of millions of tons of hazardous waste produced by industrialized countries, and the use of pesticides and herbicides, which have caused death and harm to wildlife and aquatic organisms, are all serious alarm bells which require immediate attention to solve them (Janes et al., 2023). In addition, issues and challenges such as soil degradation, destruction of habitats, loss of some plant and animal species, and destruction of forests are very serious (Mónus,2022). The above cases have revealed the bitter truth to everyone that the environment has a significant impact on social, political, cultural and educational domains (Arafah, 2020).

Researchers believe that a healthy environment is one of the determining and influencing factors on the development and growth of all countries (Verhal & Zoetermer, 2022). Without a healthy environment, we cannot talk about the physical and mental health of humans (Warsil, 2019). The environment has many visible and hidden effects on various aspects of human life. It seems that due to the fundamental role of the environment on human life, it is inevitable to pay attention to this important issue in the formal education system (Jaafari, 2023). In this regard, education systems and educational centers are especially expected to create the necessary educational and environmental cultural needs among students for effective preservation and care of the environment. In fact, the task of the educational system in connection with environmental education is to create a sense of caring for the environment among students (Edwards et al., 2022). At the same time, it is assumed that environmental education is one of the

important requirements of sustainable development. A development that typically meets the needs of current generations without negatively affecting the future generations and their needs, and within a framework in which humans establish a peaceful coexistence with their environment and use its natural resources in a forward-looking manner. It is in this direction that UNESCO recognizes environmental education as education for sustainable development and emphasizes the integration and intertwining of these two concepts (Ratnaviti et al., 2023).

2. Review of the Related Literature

From the point of view of Botkin and Keller (2022), the environment is a complex network that connects animals, plants and other forms of life. Benson (2020) believes that the environment is a system in which everything is in harmony with each other and the change of one component sooner or later leads to the change of other components. They believe that the concept of the environment does not only refer to a wide area where people live; rather, the environment includes an ecosystem in which millions of creatures live and provides a large collection of raw materials for the economy of any country (Lindgren et al., 2023). Regardless of the different definitions and explanations of the concept of environment, it should be emphasized that the promotion of scientific topics and improving the understanding of the young generation in the field of environment should be placed in the agenda of education. Based on this, what is called the process of environmental education, aims to compile and design a set of environmental education and learning in a coherent and purposeful way and the possibility of transferring it to teenagers and children who are citizens (Sebastian, 2020).

Considering the above points, one of the most important and basic responsibilities of schools is to train informed, committed, active, creative and understanding citizens who have a special sensitivity to the environment (Seva, 2022). People who have useful and appropriate information about the environment, can adapt themselves to the environment. In fact, schools are the place where students get to know their rights and responsibilities towards the environment, so they can prepare themselves to live in it (Ebrahimi, 2018). In this kind of training, students' awareness, knowledge, and skills are improved which

lead to understanding, commitment, informed decisions, and constructive activities to manage all the interconnected components of the environment. Also, environmental education increases public knowledge and awareness. Further, environmental education increases knowledge and awareness about the harmful environmental consequences of human activities and acquires the necessary skills to preserve the environment throughout life and create a sense of responsibility in citizens towards the environment (Chezan and Drasgo, 2020). In other words, environmental education aims to prepare a citizen who is aware of the biological environment and its related issues and is eager to use and provide solutions to solve its problems. Environmental education seeks to improve students' sense of appreciation, perception, interest and positive attitude towards the environment, as well as the development and cultivation of students' understanding, practical experiences and appreciation of the material and biological systems on the earth (Senska et al., 2023). Indeed, environmental education is a permanent process during which students acquire the necessary awareness, values, attitudes, skills and experiences about the environment around them and through it they are able to solve problems related to the environment (Senska et al., 2023).

Accordingly, it seems that creating a healthy environment is something that can be taught, developed, and nurtured, and today education plays an irreplaceable role in preserving and developing the environment (Bodal, 2014). Due to the teachability of an important issue such as the environment, addressing it in schools and curriculum can lead to mindful environmental behaviors in students (Pelor, 2019). This issue is of outmost importance in rural schools because the essence of life in the village is tied to the environment (Ismaili et al., 2019). In rural environments, due to special ecological conditions, the dependence of humans on the environment is very high. In villages, cultural customs, values and beliefs and even jobs are closely dependent on the environment. In such an environment, neglecting the environment causes harmful effects in various social, cultural and economic dimensions. Of course, the school as the educational institution can have long-term positive and permanent effects in this area. It seems that the school education plays a key role in the village and the school teachers and staff as active educational players can play an active role in directing the constructive environmental behaviors in students (Shahraki, 2018). Therefore, creating a healthy

educational environment in the rural schools can have important outputs for the village (Hojjati, 2015). Looking at the state of the environment in the villages, we can realize that the cause of the transformation and destruction is due to the ignorance or indifference of man to the surrounding environment, human selfishness, and ignoring the values and customs to preserve and protect the environment. (Amini, 2022). Education can have a significant effect on strengthening environmental culture and achieving sustainable development goals. Students' familiarity with basic environmental sciences at different levels of education can foster a spirit of adaptability and a sense of responsibility in protecting resources (Arzengtin, 2019). However, the role of the teacher has not been given much attention to the best of researcher's knowledge (Lesse, 2021). On the other hand, scant research such as Ershadi and Asgari (2023), Hosseinikhah (2023), Azizzadeh et al. (2022), Meiboudi and Saeedi (2022) have addressed dimensions such as the challenges of environmental education, content analysis of books from the perspective of attention to the environment, and evaluation of environmental education. However, an important element such as the role of the teacher has not received enough attention. Obviously, in such a situation, the no educational methods will have remarkable results without considering the views and beliefs of the teachers (Ramazani, 2022). Hence, considering the above points the present research seeks to answer the following question:

- What are teachers' reflections towards environmental education in rural schools?

3. Methodology

The current research was conducted using qualitative and phenomenological (descriptive) methods. The purpose of phenomenological research is to describe life experiences as they happened in life. Strabert and Carpenter (2003) consider phenomenology as a practice whose purpose is to describe specific phenomena or the appearance of things and life experiences. The focus of phenomenology is on life experiences, because these are the experiences that make the meaning of any phenomenon for the individual and reveal the real facts (Edibhaj Bagheri et al., 2019), and because the phenomenological method tries to describe human experiences in the context and context in which they occur and provides the richest and most descriptive

information, so using this method is suitable for clarification and deep description. The research participants included 13 teachers who were familiar with the subject of environmental education in the classroom. Research participants were selected based on non-random purposeful sampling technique. Based on purposeful sampling, only teachers who had the experience of environmental education were selected. The number of samples was determined based on theoretical data saturation; that is, the number of interviews progressed until the researcher's information in the field of research was saturated and no other information was added after that. In order to measure the validity of the research, the interview questions were modified and approved by four expert professors in the relevant field after they were designed. All interviews were audio recorded after obtaining the consent of the interviewees. Then, the recorded interviews were carefully listened to by the researcher and transcribed verbatim. Next, the “peer review" method was used to confirm the validity of the interviews. In this way, the written text of the interview was sent to the participants again to confirm the accuracy of the content and to revise the content if necessary. Data analysis was done by thematic analysis method in such a way that after studying the written text of the interviews and constantly comparing the concepts and phrases, semantic codes were selected and main themes were emerged following Lincoln and Guba's guidelines (1985). The demographic information of the participants in this research are presented in the following table:

Table 1. Demographic information of participants in the research

No	Job	Education	Gender	Experience
1	Primary school teacher	Bachelor's degree	Female	10 years
2	Primary school teacher	Master's degree	Female	14 years
3	Primary school teacher	Master's degree	Male	17 years
4	Primary school teacher	Bachelor's degree	Female	22 years
5	Primary school teacher	Master's degree	Male	8 years
6	Primary school teacher	Bachelor's degree	Female	16 years
7	Primary school teacher	Master's degree	Male	7 years
8	Primary school teacher	Bachelor's degree	Male	22 years
9	Primary school teacher	Master's degree	Female	16 years
10	Primary school teacher	Bachelor's degree	Female	13 years
11	Primary school teacher	Bachelor's degree	Male	18 years
12	Primary school teacher	Master's degree	Female	14 years
13	Primary school teacher	Bachelor's degree	Male	19 years

4. Findings

After analyzing a total of 13 interviews with teachers who were familiar with the phenomenon of environmental education and checking and re-checking them recursively, three main themes (regressive approach, progressive approach, and indifferent approach) and 13 sub-themes, and 31 refined themes were emerged, which are presented in the following table:

Table 2. Main, Sub-, and Refined abstract and refined themes extracted from the interviews

Main Themes	Sub-themes	Refined themes	Sample Extract
Regressive approach	Lack of deep involvement and empathy of teachers	The lack of importance of environmental education for teachers Not having the necessary spirit for environmental education Lack of strict adherence to the implementation of environmental education	*For some teachers, training such as environmental training is not very important (Participant No. 2).* *Some teachers do not have the spirit to develop environmental education due to the problems they have and do not implement these educations properly (Participant No. 4).*
	Lack of academic involvement of teachers	Using inefficient methods in environmental education Lack of new knowledge about environmental education Biased education in the field of environment	*Environmental education is a new issue that requires new tools, traditional methods cannot be used (Participant No. 13).* *Anyone who wants to do education related to the environment must have up-to-date knowledge in this field, unfortunately, some teachers do not have such knowledge and act completely sloppy (Participant No. 7).*
	Lack of intellectual involvement of teachers	Lack of intellectual concern in the field of environmental education Traditional thoughts about environmental education superficial view of environmental education	*It seems that until something is a mental concern of people, they don't do it properly, some of our teachers don't care about the environment (Participant No. 1).* *The traditional and superficial view of environmental education has become a big challenge in this field, some teachers think that they can do this education by providing some information (Participant No. 9).*
	Lack of teachers' belief involvement	Lack of deep belief in environmental education Not believing in the effectiveness of environmental education	*Some teachers reluctantly deal with a subject such as environmental education and do not believe in it from the bottom*

			of their hearts (Participant No. 11). *One of my colleagues said that such training has no results. (Participant No. 8).*
	Lack of skill involvement of teachers	Lack of environmental education teaching skills Lack of having the skills to transfer environmental education correctly	*Every new problem that is raised in education requires a new method and new methods should be used in this field (Participant No. 4).* *Unfortunately, some teachers are weak in the suitable transfer of information related to environmental education (Participant No. 6).*
Progressive approach	Deep and empathetic involvement of teachers	Using creative methods in environmental education Trying to be equipped with modern knowledge in the field of environment	*Teachers who are aware of the importance of environmental education always use creative methods in this field (Participant No. 3).* *A teacher who considers environmental education important, tries to equip himself with the latest knowledge in this field (Participant No. 11).*
	Scientific involvement of teachers towards environmental education	Research in the field of environmental education Foresight in the field of environmental education Updating information on the environment	*Teachers who accept environmental education in a deep way, try to get the latest knowledge in this field through research (Participant No. 7).* *Teachers who have realized the necessity of environmental education for the future of the country are passionate about this type of education (Participant No. 6).*
	Intellectual involvement of teachers in environmental education	Constant attention to environmental education Intellectual concern for environmental education	*Some teachers are always trying to learn different dimensions of environmental education and they value it a lot (Participant No. 8).* *A teacher who accepts environmental education as a necessity is always thinking of improving her abilities in this field (Participant No. 7).*
	Belief involvement towards environmental education	Being a model teacher in the field of environmental education High priority of environmental education for teachers	*Teachers who have a deep belief in environmental education should act as role models in this field (Participant No. 9).* *For some teachers, environmental education is even more important than subjects like math (Participant No. 4).*

	Teachers' skill engagement towards environmental education	Trying to make environmental education attractive Using new methods in teaching environmental issues Meaningful education of environmental issues	*Some teachers try to make environmental education attractive by using methods such as participation and scientific tours (Participant No. 5).* *A teacher who is motivated to teach the environment tries to relate these teachings to the students' lives so that it is meaningful (participant no. 7).*
Indifferent approach	A skeptical look at environmental education	Uncertainty about environmental education Not being optimistic about the results of environmental education	*Some teachers in the 21st century still have a skeptical and hesitant view of environmental education (Participant No1).* *Some of the colleagues I talk to believe that environmental education does not have a very positive result (Participant No. 9).*
	Being negligent in the field of environmental education	Failure to give priority to environmental issues in teaching A temporary view environmental education	*Many of our teachers consider environmental education as a second-hand thing that should be the last priority of education (Participant No. 11).* *Some teachers look at environmental education only as a nuisance (Participant No. 6).*
	A profit-seeking view of environmental education	A cost-benefit view of environmental education A benefit-based view of environmental education	*The cost-benefit view of environmental education is one of the main problems of this type of education. Basically, such a view leads to a severe blow to environmental education (Participant No. 12).* *Some people think that any education that is provided should have financial benefits. You can't look at environmental education in this way (Participant No. 10).*

5. Discussion and Conclusion

Teachers' views towards environmental education was the main concern of the current research. The results of the present study showed that teachers expressed three different attitudes towards environmental education, which were regressive approach, progressive and developmental approach, and indifferent and approach. The way teachers approach environmental education has a significant impact on this type of education. In line with the findings of the current research, Rezaei (2017) believed that the willingness of the society, including teachers to face such programs plays a significant role in its implementation. Without the preparation of stakeholders involved in environmental

education, efforts in this field will remain futile. Brati (2016) also reported that the teacher as the implementer of environmental education in the classroom plays a significant role in the success or failure of these educations. More precisely, a teacher who truly believes in environmental education will undoubtedly make more efforts to implement this type of training. In his research, Shaltari (2020) concluded that some teachers act as an obstacle against this type of education due to their ignorance and lack of knowledge about environmental education. The results of Santoz et al. (2019) indicated that that the cognitive dimension in environmental education is considered more than other dimensions. As it was also mentioned in the present research, the knowledge dimension of environmental education is more prominent than other dimensions. A teacher who cannot inspire the emotional dimension of students to engage in environmental education will undoubtedly face failure in this direction. Besides, Nashida et al. (2019) concluded that some teachers do not have a positive attitude towards environmental education. In other words, this group of teachers believe that subjects such as science and mathematics have more priority than environmental education.

In general, environmental education as the foundation of life in the current century should be given more attention. Even if environmental education programs are prepared at the standard level, neglecting important elements such as teachers in these programs will cause them to become inefficient. The teacher can be considered as the most important factor in the effective implementation of environmental education. Indeed, training the teacher and his positive attitude towards environmental education can guarantee the success of environmental education. In contrast, if teachers do not understand the necessity of such programs and have a superficial and temporary view of environmental education, they undoubtedly will not be actively involved in it, so we cannot expect positive results. Teachers in the process of environmental education are so important that they are even able to cover the shortcomings of other factors including the students and content. A teacher who is enthusiastic about environmental education can undoubtedly make students enthusiastic in this field. In short, it should be noted that without considering the role and the attitude of the teachers, developing the best environmental education programs is almost impossible.

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Developing a critical thinking training model for high school students

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Abstract

The aim of this research was to devise a framework for fostering critical thinking skills among students within high school environments in Kermanshah. Employing a practical approach, the study adopted qualitative methods to attain its objectives. Participants consisted of experts, practitioners, and researchers familiar with the subject area. Utilizing purposive sampling, 23 individuals were selected based on theoretical saturation principles. Through a combination of document analysis and semi-structured interviews, data were meticulously analyzed using coding techniques, with Grounded Theory emerging as the primary method for theory generation. Results underscored the pivotal role of cultivating thinking management in the pedagogy of critical thinking within high school contexts. Moreover, findings highlighted the significance of facilitators' and students' professional competencies and personality traits, thoughtful planning, and familial influences as key determinants. Contextual factors impacting thinking management education encompassed supportive frameworks for managerial development, emotional dynamics within the classroom, strategies for teacher engagement, and adherence to authoritative guidelines.

Keywords: Critical Thinking, Critical Thinking Model, Thinking Training Management

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1. Introduction

Educational experts have long prioritized the scrutiny of academic advancement and its determinants. While aptitude stands out as a primary indicator of student achievement, it does not operate in isolation in forecasting academic success. Hence, scholars have endeavored to assess the impact of non-educational elements on academic development, with critical thinking emerging as one such factor (Fong, Kim, Davis, Hoang, & Kim, 2017; Sepahi Khazaei, Khoshay, Iranfar, & Timare, 2016; Vierra, 2014).

Siegel (1988) defines critical thinking as ‘the educational cognate of rationality’, and a critical thinker, ‘as the individual who is appropriately moved by reasons’ (p. 25). According to experts, the capacity to think critically, solve problems, and engage in logical reasoning is widely regarded as the primary and fundamental objective of education. Individuals are encouraged to evaluate their beliefs, thoughts, habits, tendencies, and behavior, and also consider the implications of each in their lives and interactions with others (Erickson et al., 2017).

Proficiency in critical thinking holds considerable importance as it equips students to address social, scientific, and practical challenges necessitating problem-solving capabilities. The essential abilities for critically solving problems encompass reasoning, assessing, problem-solving, decision-making, and ultimately analyzing outcomes, which can be undertaken either independently or in collaboration (Magrabi, Pasha, & Pasha, 2018). The instruction of critical thinking skills ought to motivate students to pursue precision and structure, approach problem-solving in an impartial manner, possess a fervor for profound reflection, possess a strong inclination to consider opposing viewpoints, have an interest in exploring evidence and reasoning, challenge inconsistencies and intellectual uncertainty, evaluate opposing opinions with a range of criteria, and prioritize truth over personal biases (Nichols & Huff, 2017; cited in Paul, 1999). However, it has been observed that students' intellectual abilities have declined, and existing educational programs have had minimal impact on their critical thinking skills (Del Negro, 2017).

To date, numerous investigations have been undertaken to explore the connection between critical thinking and academic performance. While some studies have identified

a significant correlation between them (Fong et al., 2017; Ghanizadeh, 2017; Ross et al., 2013; Vierra, 2014), others have failed to uncover any association between critical thinking and students' educational attainment (Bakhshi & Ahanchian, 2013; Doleck et al., 2017; Shirrel, 2008). To put it differently, merely obtaining knowledge is inadequate for functioning effectively in society; individuals must also possess the ability to contemplate and assess information and knowledge. This necessitates the need for training (Engholm & Salamon, 2017).

Numerous experts have advocated for the teachability of critical thinking skills (e.g., Hilton, 2018; Othman & Kassim, 2017; Qaderi Gask & Jahani, 2017; Salehi, 2016; Tsarava et al., 2017). In the past, it was commonly held that individuals could not be trained to be innovative or creative, and instead, thinking was believed to be an inherent trait that could not be controlled or modified. However, experts like Maltzman (2010) have demonstrated that thinking, problem-solving, and creativity are not abstract concepts, but rather a natural phenomenon that operates under the same laws, systems, and principles that govern human behavior. Therefore, critical thinking is a learned behavior, and individuals can be taught to think critically and creatively by providing suitable conditions (Stefánsson, 2017). According to Abrami et al. (2008) critical thinking involves the ability to make impartial and self-regulating judgments, which has been widely acknowledged as a fundamental life skill in the current era of knowledge. Consequently, teaching critical thinking is considered a significant and fundamental objective of education.

Insufficient development of critical thinking skills can lead to even more errors, as individuals may mistake the appropriate application of information for mere memorization (Khalili & Sohrabi, 2011). Kelly and Lincona (2018) contend that education fundamentally relies on cognition, with critical thinking necessitating students to engage in thoughtful learning. This entails employing various abilities, approaches, and traits such as rationality and intuition. Under these circumstances, individuals may feel incapable and prone to errors when processing information. It is noteworthy that students devote significant amounts of time in educational settings, often memorizing irrelevant material. Given the current digital age, students must possess critical thinking skills, which, in turn, requires teachers to gain full proficiency in these techniques via training courses (Fathi Azar et al., 2013).

There are various factors that can enhance students' critical thinking skills, including individual factors such as intelligence (Beraten et al., 2017), self-motivation, enthusiasm, focus, accuracy, and self-efficacy (Ghanizadeh, 2017), as well as social factors such as class inequalities, cultural and economic capital, the value placed on knowledge, peer groups, and equal educational opportunities. In addition, educational factors such as the experience of the teacher (Roska et al., 2017; Darling-Hammond, 2017), teaching approaches (Darling-Hammond, 2017; Erickson et al., 2017), curriculum (Erickson et al., 2017), physical environment and resources (Lavi & Nickson, 2017), learning style, and teacher evaluations can also influence students' critical thinking education.

In most primary, middle, and secondary schools, the conventional style of classroom education still prevails. This involves the direct dissemination of information to students, without presenting them with any demanding scenarios to help them accomplish their desired objectives. Typically, the questions posed to students during instruction are aimed at keeping them focused on the teacher's words. Consequently, students have limited opportunities to exercise skills such as critical thinking, research, correlation, categorization, and problem-solving (Emmer & Gerwels, 2013).

Indeed, the Ministry of Education has the duty of educating and equipping the youth for a productive and engaged life in the modern era, while also establishing relationships with other societal organizations. However, it appears that the Ministry of Education in Iran has not adapted its structure and operations to align with the shifting economic, political, cultural, and social landscape, resulting in numerous obstacles. According to Wahyuni et al. (2017), providing education to students, particularly during their initial years in school, can promote their growth as self-sufficient and self-directed individuals. Moreover, it can foster the formation of values and attitudes in children, which can persist throughout their academic journey into higher levels of education.

To date, to the best of researchers’ knowledge, there has been no investigation into the teaching of critical thinking skills among students, particularly in high schools. Therefore, this study aims to identify a suitable framework for managing thinking education in high school settings.

2. Literature Review

There has been a plethora of studies on critical thinking (e.g., Ghanizadeh,2017; Hilton, 2018; Othman & Kassim, 2017; Qaderi Gask & Jahani, 2017; Salehi, 2016; Sepahi et al., 2016; Tsarava et al., 2017). Some researchers focused on the relationship between critical thinking and academic achievement (e.g., Ghanizadeh, 2017; Sepahi et al., 2016). For instance, a study performed by Ghanizadeh (2017), the interaction among reflective thinking, critical thinking, self-monitoring, and academic achievement in higher education was investigated. The research sample comprised 196 university students from Iran, consisting of 75 males and 112 females. Reflective thinking was assessed using the Reflective Thinking Questionnaire, while critical thinking was evaluated through the Watson-Glaser Critical Thinking Appraisal. Self-monitoring was gauged using the Self-Regulation Trait Questionnaire. Results indicated a correlation between critical thinking, reflective thinking, and academic achievement.

Additionally, Sepahi et al. (2016) explored the link between critical thinking disposition and academic performance among preclinical and clinical medical students. The study involved 259 students at the Medical Sciences University of Kermanshah. Critical thinking was measured using the Standard Critical Thinking Disposition Inventory Test, while academic achievement was assessed based on students' grade point average from previous terms. Results revealed a significant relationship between critical thinking and academic performance during the preclinical stage, whereas no significant correlation was observed during the clinical stage.

Some other researchers concentrated on the effect of instructing thinking skills on critical thinking (e.g., Hilton, 2018; Othman & Kassim, 2017; Qaderi Gask & Jahani, 2017; Salehi, 2016; Tsarava et al., 2017). For example, Hilton's (2018) research focused on the engagement of elementary school students in math problem-solving to enhance their cognitive abilities. The findings indicated that involving elementary school students in math problem-solving had a positive impact on their critical thinking skills. In addition, Tsarava et al. (2017) conducted research on the instruction of audit thinking in primary school students using active (involving excitement and participation) and passive (involving individual and seated activities) games. The findings indicated that the use of

active games had a significant impact on the development of audit thinking in students. Similarly, Othman and Kassim (2017) examined the teaching of thinking skills by Islamic teachers among primary school students in Malaysia using a qualitative approach. Their analysis revealed that the teaching methodology of teachers, which was based on Islamic principles, affected the thinking patterns of primary school students. Moreover, Salehi (2016) examined how well sixth-grade elementary school students in Noor city achieved the educational goals of the thinking and research course. The results showed that all the educational objectives were successfully attained. The "self-reflection" skill was found to be the most achieved goal, while the "imagination" skill was the least achieved. Furthermore, Qaderi Gask and Jahani (2017) explored critical thinking skills among second-year primary school students in Birjand city and identified ways to enhance them. The results showed that factors such as providing complete content to students, offering individualized programs, using effective teaching methods, and empowering teachers in all aspects were effective in strengthening critical thinking skills.

Even though several studies have explored the correlation between various elements, critical thinking, and academic attainment, with some primarily concentrating on overall academic performance, the absence of a unified and comprehensive strategy for teaching critical thinking skills to high school students, as perceived by teachers, prompted the researchers to conduct a thorough investigation aimed at addressing these deficiencies. Hence, the primary objective of this study was to ascertain an appropriate framework for administering thinking education within high school environments. Therefore, the following research questions were formulated:

- What factors influence to the successful management of critical thinking education in high schools?

3. Method

3.1. Research Design

As the focus of this study was on how to manage the development of critical thinking skills in high school students, a qualitative research approach was utilized. In accordance with

the principles of this approach, the researchers conducted the study in natural settings, where they engaged with participants and asked them to share their thoughts on the topic of the research, specifically the management of critical thinking. The goal was to identify underlying concepts and relationships in the collected data and then organize them into a theoretical explanatory framework.

3.2. Participants

The research participants were selected based on purposive sampling technique and consisted of experienced professionals and experts in the field of training critical thinking skills, who held decision-making and executive positions in this area. The study participants were categorized into three groups as follows: (1) the first group consisted of school principals, who were responsible for overseeing the management of thinking education; (2) the second group comprised teachers and facilitators who managed thinking education in high schools; and (3) the third group included experts and researchers who specialized in managing thinking education.

The theoretical saturation method was employed in this research, and a total of 23 participants were recruited. The first group of participants was selected based on the criterion that their schools included thinking education in their weekly curriculum. The second group of participants, which comprised teachers and facilitators, were selected based on their experience in implementing thinking training programs. For the third group, which included experts and researchers specializing in managing thinking education, participants were selected based on their publication record, professional experience, academic affiliation, and recognition in the field of thinking education. This approach ensured that the third group was composed of highly knowledgeable and influential individuals who could provide valuable insights into the management of thinking education. Besides, by adhering to these selection criteria, the study ensured a diverse and knowledgeable participant pool, providing valuable insights into the management of thinking education in high schools.

3.3. Data Collection

Initially, document analysis was performed to collect data by reviewing relevant literature, including books, publications, the internet sources, and databases. The selected sources

were carefully examined, and the relevant texts were prepared, scanned, and translated as needed. The purpose of this phase was to identify the main components and indicators of thinking education management, as well as the factors that influenced it. Following the library research method, a field research approach was employed, which included semi-structured interviews with educators, experts, and researchers in the field of thinking education management in Persian. The interview questions were then designed to elicit participants' thoughts and experiences on the topic (See Appendix). These interviews provided a deeper understanding of the topic and practical insights into the implementation of thinking education in primary and pre-primary schools. Each interview lasted approximately 45-60 minutes. This allowed for a comprehensive exploration of each question and enabled follow-up questions for deeper insights. After obtaining the participants' consent, the interviews were recorded to ensure accurate transcription and analysis of the data, maintaining the integrity of the participants' responses. Finally, the interviews were conducted in Persian, the native language of the participants, to ensure they could express their thoughts and experiences comfortably and accurately.

3.4. Data Analysis

Theoretical coding was utilized in this research as the data analysis method. Theoretical coding involves the conceptualization and synthesis of data to develop a new theory. The coding process employed two key techniques: open and axial coding. Open coding was used to identify and categorize concepts in the data, while axial coding was used to establish relationships among these concepts and develop a theoretical framework. This process of theoretical coding ensured that the data were analyzed in a rigorous and systematic manner to generate meaningful insights into the management of thinking education in primary and pre-primary schools (Strauss & Corbin, 1998). To ensure the reliability and validity of the coding process, the following inter-coder reliability measures were implemented:

- Training of Coders: The coders underwent thorough training on the coding scheme and procedures to ensure a consistent understanding of the coding process.
- Pilot Coding: An initial subset of the data was independently coded by multiple coders to establish a baseline level of agreement and refine the coding scheme if necessary.

- Regular Meetings and Discussions: Coders held regular meetings to discuss any discrepancies or ambiguities in the coding process, facilitating consensus and alignment.
- Calculation of Inter-Coder Reliability: Cohen's Kappa was used to calculate inter-coder reliability, ensuring that the coding was consistent and reliable across different coders. The reliability index appeared to be 0.839 which was considered as acceptable
- Continuous Cross-Checking: Throughout the coding process, continuous cross-checking of coded data was performed to maintain high inter-coder reliability and address any emerging inconsistencies.

By implementing these inter-coder reliability measures, the research ensured that the data analysis was robust, reproducible, and trustworthy.

4. Results

This section presents the results of the data analysis and evaluation, which were conducted using rigorous qualitative methods. Prior to analysis, the data were subjected to preprocessing to ensure its quality and reliability.

First, the study aimed to identify the central phenomenon of managing critical thinking education among high school students in Kermanshah. Analysis of the data collected from participants revealed that managing critical thinking education was the core of critical thinking education in these settings. This was evident from the responses of the participants, which highlighted key components of management, such as planning, monitoring, evaluation, guidance, and control. These findings suggest that effective management of critical thinking education is crucial for promoting critical thinking skills among high school students.

Besides, the study aimed to identify the causal factors that contribute to the central phenomenon of managing critical thinking education for high school students in Kermanshah. Through data analysis, five main categories of causal factors were identified, each with its own set of sub-categories, as explained below and depicted in the

coded table.

1. Professional qualifications of facilitators: This category underscores the importance of teachers and facilitators having the necessary professional competencies and qualifications in the field of critical thinking education. It is identified as the foremost category of causal factors and a key determinant of the success of managing critical thinking education in high schools. The sub-categories of this category include the necessary skills that facilitators must possess or acquire, as well as their knowledge and attitude towards critical thinking training management.

2. Facilitator personality traits: This category highlights the personality traits that enable facilitators to acquire the necessary abilities to manage critical thinking education. It is further divided into three sub-categories: vigilance and intelligence of the facilitator, honesty and camaraderie of the facilitator in group discussions, and patience of the facilitator in creating a safe space for discussion.

3. Student personality traits: This category is related to the skills, abilities, and talents of students, and emphasizes the importance of them being free from mental and learning disorders.

4. Curriculum: This category is crucial for the success of students in critical thinking education and underscores the importance of having basic principles of philosophy and logic in the curriculum and activities. It also highlights the need for educational materials and exercises that are suitable for practicing critical thinking skills among high school students.

5. Family: This category is based on the opinions of the participants and emphasizes the role of families in supporting and encouraging critical thinking education among high school students.

Overall, these findings provide valuable insights into the factors that contribute to the successful management of critical thinking education in high schools in Kermanshah. The identification of these causal factors can inform the development of effective strategies and policies to improve critical thinking education and promote critical thinking skills among students.

Table 1. Participants' Beliefs Regarding Causal Factors

Main category	Subcategory	Individual Responses	Individual Mentions	Individual Frequency	Frequency
Professional qualifications of facilitators	Skill	5	3	4	12
	Knowledge	3	3	1	7
	Attitude	1	*	1	2
Personality characteristics of the facilitator	Skill	2	1	1	4
	Mental	2	*	1	3
Student personality traits	Skill, ability and talent	3	1	*	4
	Mental	*	2	2	4
Curriculum	***	1	1	1	3
Family	***	1	1	*	2

The study also aimed to identify the background conditions that influence the management of critical thinking education. To achieve this, participants were asked about their experiences in successful and enjoyable classes. The analysis revealed five main categories of background conditions that affect the causal factors of the central phenomenon of this research, which are as follows:

1. Managers' support: This category encompasses financial support, moral support, technical support, and provision of physical facilities by the management.

2. Professional growth and development: This category emphasizes the importance of programs that promote professional development for teachers and facilitators.

3. Emotional dimension of class: This category emphasizes the significance of creating a positive emotional environment in the classroom, which fosters students' engagement and motivation in thinking education programs.

4. Recruitment of teachers: This category is related to the quality of teachers recruited for thinking education programs.

5. Emphasis of high-level documents: This category refers to the importance of high-level policy documents and regulations that emphasize the significance of thinking

education in high schools.

Table 2. Participants' Reflections about Background Factors

Main category	Subcategory	Individual Responses	Individual Mentions	Individual Frequency	Frequency
Managers support	financial support	1	1	1	3
	moral support	1	*	2	3
	technical support	*	*	1	1
	physical facilities	*	*	2	2
Professional growth and development	teachers (facilitators)	2	2	*	4
	School staff	*	1	*	1
Emotional dimension of class		1	*	3	4
Recruitment of teachers		1	*	3	4
Emphasis of high-level documents		2	1	*	3

Furthermore, the present study aimed to identify the intervening conditions that could affect the background conditions and the causal factors and processes involved in managing critical thinking education. Intervening conditions are environmental conditions that are more general than background conditions. Through data analysis, three categories of intervening conditions were identified, as outlined below:

1. Awareness, belief, and social attitude: This category includes sub-categories of "managers and officials" and "family," and highlights the importance of the general awareness, belief, and social attitudes towards thinking education.

2. Collaboration of experts: This category emphasizes the importance of collaboration among experts in thinking education programs.

3. Alignment of executives and managers: This category highlights the importance of executives and managers aligning their goals and principles with those of Philosophy for children.

Table 3. Participants' Attitudes towards Intervening Factors

Main category	Subcategory	Individual Responses	Individual Mentions	Individual Frequency	Frequency
Awareness, belief, and social (general) attitude	Managers and officials	1	2	*	3
	family	1	*	2	3
Collaboration of experts	***	*	*	1	1
Alignment of executives and managers with Philosophy for children	***	*	1	*	1

Moreover, the study aimed to examine the ways in which strategies impact the success of interventions by shaping the contexts and conditions in which they take place. Our data analysis identified four key categories of strategies that were relevant to the management of critical thinking training: educational, motivational, facilitation, and evaluation. These strategies play a crucial role in achieving desired outcomes, and our results highlighted the importance of facilitators in developing insights and promoting growth in these areas.

Finally, the participants' statements were analyzed and categorized into six distinct groups, as illustrated in the figure 1. The categories included: strengthening reasoning skills, promoting discussion and logical judgment, enhancing problem-solving abilities, fostering creative and critical thinking, promoting deeper and more sustainable learning, and improving interpersonal relationships, community dynamics, and mental health. They also proposed various mechanisms to ensure the long-term success of the processes discussed, taking into account the causal, contextual, and intervening factors involved. Data analysis was deemed necessary to identify areas for improvement and prevent potential complications. The key components of these mechanisms included raising awareness and developing the skills of parents and facilitators, implementing effective management and structural practices, addressing cultural factors, establishing

programmatic supports, and promoting other forms of support.

Based on the identified categories, we developed a conceptual model, which is presented below.

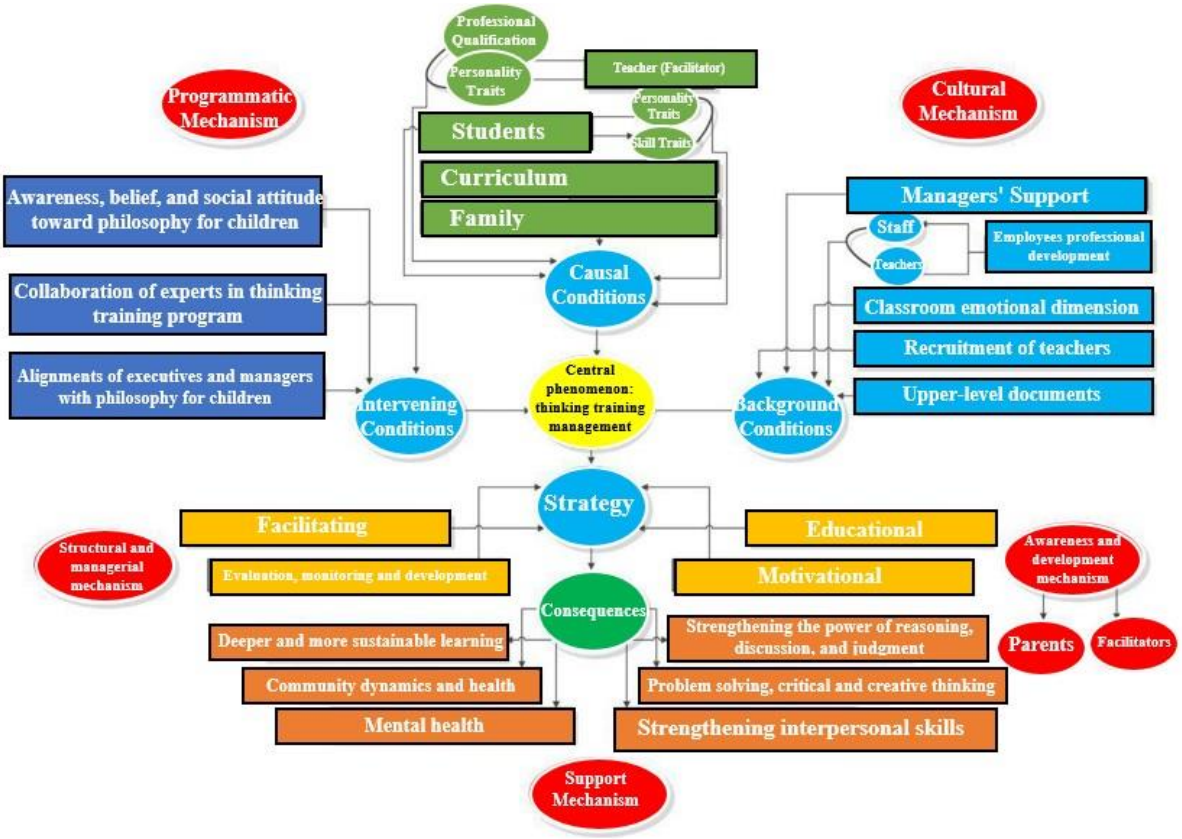

Figure 1. The final model for managing thinking education in high school

5. Discussion

The main objective of the current study was to develop a critical thinking training model for high school students. The findings underscore the importance of human resources as the most valuable organizational resource that can provide a competitive advantage over other organizations. For an organization to create this competitive advantage, it requires efficient and creative human resources with strong critical thinking skills. Therefore, training in logical thinking is vital. This education should commence from the first institution that a child enters after their family, such as preschool or elementary school. At these stages, children's impressionability is higher, and they view their teachers as role models and leaders. Therefore, it is recommended that thinking training management

should begin at these early stages to maximize its positive impact in the future.

The results of this study indicate a significant alignment with existing literature concerning the management of critical thinking education. Educational experts have long emphasized the importance of critical thinking as a fundamental educational objective (Erickson et al., 2017). The findings of this research, which highlight the essential components of effective management—such as planning, monitoring, evaluation, guidance, and control—underscore this emphasis, suggesting that structured management is vital for enhancing students' critical thinking skills.

Studies by Fong et al. (2017) and Sepahi et al. (2016) have underscored the importance of critical thinking in academic advancement. This research aligns with their findings by identifying professional qualifications of teachers, student abilities, curriculum comprehensiveness, and family support as crucial factors influencing the management of critical thinking education. This multifaceted approach corroborates the assertion by Erickson et al. (2017) that a holistic educational ecosystem is necessary for effective critical thinking training.

The background conditions identified in this study—such as managerial support, professional growth opportunities for teachers, and a supportive classroom environment—are consistent with the literature that emphasizes the need for a conducive learning environment for critical thinking (Darling-Hammond, 2017; Roska et al., 2017). These findings suggest that a supportive and well-resourced environment is crucial for the successful implementation of critical thinking training programs, echoing the views of educational experts like Lavi and Nickson (2017). Additionally, these elements are critical for fostering a positive educational atmosphere where students feel encouraged to engage in higher-order thinking tasks.

Intervening factors such as social attitudes and collaboration among educational experts and managers, identified in this study, further highlight the broader socio-cultural context of critical thinking education. This aligns with the findings of Qaderi Gask and Jahani (2017), who emphasized the importance of collaborative efforts and social influences in strengthening critical thinking skills among students. The influence of social attitudes on critical thinking is particularly relevant in a globalized educational landscape,

where diverse perspectives and collaborative learning are increasingly valued.

Moreover, the strategies identified in this study—educational, motivational, facilitation, and evaluation strategies—reflect the comprehensive approach suggested by researchers like Hilton (2018) and Othman and Kassim (2017). These strategies underscore the importance of an integrated approach to critical thinking education, wherein facilitators play a central role in guiding and nurturing students' cognitive development. The emphasis on motivational strategies, in particular, highlights the need to actively engage students and foster an intrinsic interest in critical thinking activities.

This study's findings are also in line with the research by Ghanizadeh (2017), who found a correlation between critical thinking, reflective thinking, and academic achievement. The identification of professional qualifications and mental health of students as key causal factors in this study supports Ghanizadeh's emphasis on reflective and critical thinking as integral to academic success. Reflective thinking, as part of critical thinking, encourages students to assess their thought processes and learning strategies, thereby promoting deeper understanding and retention of knowledge.

The necessity of teaching critical thinking as a learned behavior, as advocated by experts like Maltzman (2010) and Stefánsson (2017), is reinforced by this study's findings. By identifying critical thinking as a skill that can be developed through proper training and supportive conditions, this research echoes the literature's assertion that critical thinking is not an inherent trait but a cultivated one. This perspective is critical in designing educational programs that systematically incorporate critical thinking skills into the curriculum through specific pedagogical approaches and assessment methods.

Furthermore, this study's results contribute to the ongoing debate on the teachability of critical thinking skills. While some researchers have questioned the effectiveness of current educational programs in developing critical thinking (Del Negro, 2017), this research provides evidence that with appropriate management and support, significant improvements can be made. This underscores the importance of continuous professional development for educators to equip them with the necessary skills and knowledge to foster critical thinking in their students.

The broader implications of this research extend to educational policy and

curriculum design. The findings advocate for policies that support ongoing teacher training, adequate resource allocation, and the integration of critical thinking skills across all subjects. Such policies would ensure that critical thinking becomes a foundational element of the educational experience, preparing students not only for academic success but also for active and informed participation in society. Therefore, this study's results are in substantial agreement with existing literature, reinforcing the importance of a well-structured, supportive, and comprehensive approach to managing critical thinking education. By addressing the identified factors and implementing the recommended strategies, educators and policymakers can create an environment conducive to the development of critical thinking skills, thus preparing students for the challenges of the 21st century. The conceptual model developed through this research offers a valuable framework for understanding and implementing critical thinking education management, providing a guide for future efforts in this essential area of education.

6. Conclusion

In conclusion, the management of critical thinking education among high school students in Kermanshah is a complex and multi-dimensional process that requires a concerted effort from all stakeholders involved. The study's findings indicate that effective management is characterized by comprehensive planning, ongoing monitoring and evaluation, active involvement of teachers and parents, and the provision of necessary facilities and resources. The identified causal, background, and intervening factors provide a nuanced understanding of the various elements that influence the success of critical thinking education. By addressing these factors through targeted strategies, educators and policymakers can create an environment conducive to the development of critical thinking skills among students.

The outcomes of implementing critical thinking training include enhanced reasoning skills, improved problem-solving abilities, and better interpersonal relationships, all of which contribute to students' overall cognitive and social development. These outcomes underscore the transformative potential of effective critical thinking education management. To advance the practice of critical thinking education, it is

essential to overcome obstacles such as the lack of adequately trained teachers, insufficient support from educational administrators, and limited resources. By fostering a collaborative and supportive educational environment, schools can enhance the critical thinking capabilities of their students, thereby preparing them for the challenges of the 21st century. The conceptual model developed through this research offers a valuable framework for understanding and implementing critical thinking education management. This model can serve as a guide for educators and policymakers in their efforts to promote critical thinking skills, ensuring that students are equipped with the cognitive tools necessary for academic and personal success.

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Appendix (Interview prompts)

1. What is the main aspect or core concept related to the management of critical thinking education for high school students in Kermanshah?
2. What are the background factors influencing the management of critical thinking for high school students in Kermanshah?
3. What are the intervening factors that influence the management of cognitive processes for high school students in Kermanshah?
4. What approach is used to manage the development of critical thinking skills among high school students in Kermanshah?
5. What are the outcomes of administering the training of critical thinking skills among high school students in Kermanshah?
6. What are the mechanisms of implementing critical thinking training management for high school students in Kermanshah?

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The role of spaced and massed instruction on Iranian EFL learners' reading comprehension and reading motivation

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Abstract

Strong reading comprehension skills and reading motivation are essential for personal growth, academic success, and overall well-being. Developing these skills can positively impact individuals' lives in various ways. Thus, this investigation aimed to examine the influence of massed and spaced instructions on the reading comprehension and reading motivation of Iranian EFL students. The researchers selected 150 Iranian participants from 300 based on their Oxford Quick Placement Test (OQPT) performance. The selected intermediate participants were randomly assigned into two experimental groups (massed and spaced) and one control group. The participants were given a reading comprehension pretest and post-test and a reading motivation questionnaire before and after the treatment. Three groups were provided with instruction on reading skills by English texts and new words from American English File 3. The massed group received a 90-minute session for each text, whereas the spaced group received three 30-minute sessions; the first session lasted 30 minutes, followed by two more sessions, each lasting 30 minutes, scheduled two days apart. The results of data analysis utilizing one-way ANOVA showed a considerable difference between the post-tests of the spaced and massed groups compared to the control group. The findings demonstrated that the spaced group outperformed the massed and control groups ($p < .05$) in terms of reading comprehension and reading motivation. The results have some pedagogical implications for English instructors, learners, and curriculum developers.

Keywords: EFL Reading Comprehension; Massed Instruction; Reading Motivation; Spaced Instruction

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1. Introduction

Reading has a crucial function in language learning, particularly for individuals who learn English as a foreign language. It is a paramount segment for improving L2 skills as it provides a primary platform and extensive source for engaging with the target language (Bánhegyi & Nagy, 2019; Nilforoushan et al., 2023). Additionally, reading aids students in expanding their comprehension of various linguistic aspects such as syntax, speech structure, and vocabulary. Some scholars assert that students fail to engage with their assigned textbooks despite effective education from their teachers (Masduqi, 2014). Conversely, others argue that students' reluctance to participate in reading exercises stems from a lack of understanding of the subject and text interpretation (Nilforoushan et al., 2024; Johan et al., 2022a). It is essential to mention that the recognition of the significance of reading abilities at all educational stages, along with their potential to provide favorable job prospects (Esfandiari & Hessani, 2019), have spurred our desire to comprehend the factors influencing students' reading comprehension, particularly in L2 contexts.

The ability to read is the ability of an individual to read, understand, interpret, and decode written language and text. Reading skills are also valuable in absorbing and responding to written communication (such as e-mail, notes, letters, and other written messages). In recent decades, there has been controversy about how effective reading is in learning English. Some consider reading as a dependent variable rather than an independent one (Kumar et al., 2015; Seifoori, 2024).

Komiyama (2013) emphasizes that L2 reading skill improvement is of utmost importance in engaging language learners in learning a second/foreign language. Competence in reading can also boost learners' motivation, which is a crucial factor in reading since it offers students the drive and inspiration they need to achieve their language learning goals and a range of commitments aimed at achieving language learning objectives (Meihami & Saadat, 2019; Namaziandost et al., 2020). The importance of motivation in encouraging learners to read cannot be overstated. Numerous studies have demonstrated that individuals with strong motivation to read are more inclined to exhibit techniques such as enthusiasm and a willingness to explore

different genres and styles of literature. Nakata (2015), analyzed distinct aspects of children's reading motivation and connection to essential reading skills and academic achievement. The results indicated that a strong motivation for reading is associated with increased engagement in reading-related activities, such as evaluating one's self-efficacy and tackling challenging texts.

Furthermore, the impact of enthusiasm for reading on reading development has been highlighted in several studies (Gashti, 2021; Rigg et al., 2020; Seifoori, 2023; Zwaan, 2012). Besides the inspiration to read, the other crucial factor that impacts students' reading motivation and ability is their reading proficiency (Jeon & Yamashita, 2014). Therefore, to enhance students' reading motivation in a foreign language, the current study's researchers conducted massed and spaced instruction in Iranian English as a Foreign Language (EFL) classrooms.

Massed instruction is a learning or study technique where information is presented continuously without breaks or intervals. In this approach, learners engage in a concentrated and uninterrupted practice of a particular task or skill. On the other hand, spaced instruction involves distributing learning sessions over time with intervals between each session. This technique allows learners to revisit the material at spaced intervals, reinforcing their memory and retention of the information. In summary, massed instruction involves intensive and continuous practice, while spaced instruction involves distributing practice sessions over time (Ebbinghaus, 2013).

2. Literature Review

In 2013, Ebbinghaus put forth the theory known as the spacing effect, which suggests that knowledge is more effectively acquired and retained when revisited incrementally rather than through massed and uninterrupted study sessions. This phenomenon has been extensively studied and confirmed in various fields of learning. For instance, in mathematics it has been demonstrated that spaced repetition aids in recalling and retaining knowledge (Rohrer & Taylor, 2006). Furthermore, researchers have convincingly shown the impact of the spacing effect on children acquiring their first language vocabulary (Childers & Tomasello, 2002; Namaziandost et al., 2019). Additionally, studies have identified the impact of the spaced revision on remembering

intricate physical details and accurately reproducing images (Schuetze, 2015). It is worth noting that the spacing effect even extends to word processing, as research conducted by Rogers (2017) and Seabrook et al. (2005) has revealed its effectiveness in this domain positively.

Many researchers, such as Bregman (1967) and Hintzman (1976), have acknowledged that consistent intervals between learning sessions can have long-term benefits in experimental processes. This view has led to the development of precise theories, particularly in the 1970s, to either confirm this explanation explicitly or emphasize the need to consider specific components in all four language skills (Miles, 2014). Some researchers have examined relevant empirical evidence and theoretical explanations regarding the impact of spaced learning on memory. Both theories are notable for explaining the gap effect in memory. The first category includes deficit processing theories in psychology, consistently demonstrating that learning is affected by intervals between study sessions. Therefore, considering such theories, this study initially aimed to determine the impact of massed and spaced instructions on Iranian EFL learners' reading comprehension and motivation by conducting the current quantitative study.

Many EFL learners often equate reading comprehension with meticulous translation and understanding of each word, so the ultimate objective lies in grasping the main ideas. Thus, it becomes imperative to acquaint them with the process of reading and comprehending English texts. Limited studies have been conducted to explore the impacts of massed versus spaced instructions on Iranian EFL learners' reading comprehension. Additionally, within the Iranian context, a predominant emphasis exists on accommodating large class sizes for EFL courses, resulting in a dearth of spaced instructional sessions. Consequently, this study endeavored to bridge this gap. Typically, Iranian EFL courses allocate approximately four hours per week to intensive English learning. However, due to the constraints of this limited timeframe, Iranian English teachers are not inclined toward implementing spaced instruction. This insufficiency in time allocation proves insufficient for attaining English proficiency, thus prompting a preference among teachers for massed instruction over spaced instruction. To delve into this matter further, the researchers undertook a comparative analysis to discern the

differential effects on reading comprehension and motivation between those subjected to spaced versus massed instruction.

According to a study by Timmr et al. (2020), a split-learning lecture involves the lecturer repeatedly presenting the material they need to learn immediately. The researchers aimed to investigate whether this altered curriculum would improve student retention. One hundred forty-eight second-year medical students were randomly assigned to the interval study or the conventional lecture group. In the interval study group, the students underwent three 15-minute study sessions with a five-minute break per session. This intermission lecture approach was designed to eliminate gaps in information retention by presenting the same content, including abstracts, in a condensed form. Before the course, all students took a fundamental knowledge test, and their retention of the material was evaluated eight days after the lecture. After accounting for the student's progress, the results indicated no significant difference between the interval study group and the traditional lecture group regarding their retention test scores.

In a different study, the retention of grammatical structures by EFL students was examined by Mashhadi and Farvardin (2017); they divided the participants into spaced and mass distribution and a control group. The spaced group participated in three sessions held at regular intervals, but the massed group had one intensive session. An error correction test was administered three times to collect data. The findings indicated the spaced group's performance on the delayed post-test was better. The researchers concluded that spacing as an instructional strategy can improve the retention and recall of English grammatical structures. As documented in the literature, in Iran, a limited number of studies have dealt with the issue of spaced and massed reading instruction with an emphasis on vocabulary acquisition. As a result, this study aimed to examine the influences of massed and spaced instruction on reading comprehension and reading motivation of EFL students in Iran.

The significance of this research lies in its ability to provide valuable insights to educators and curriculum developers regarding the most productive approaches to teaching and learning. Given the growing emphasis on evidence-based techniques in education, comprehending the consequences of spaced versus massed instruction on

student learning outcomes holds the utmost significance. Moreover, the research significantly centered on Iranian EFL learners, offering significant perspectives on the efficacy of diverse pedagogical approaches within a distinct cultural and linguistic milieu. This study can assist educators in customizing their instructional methods to cater to the requirements of their students effectively. In addition, the study delved into several dimensions of learning, such as reading comprehension and motivation. Examining a wide range of outcomes, the researchers attempted to provide a comprehensive understanding of the influences of massed and spaced instruction on various aspects of learning. Understanding the role of attitudes in reading comprehension through appropriate instructions can help educators develop effective methods and strategies to motivate and engage learners, ultimately leading to more successful language acquisition and communication skills. By addressing learners' attitudes and beliefs about language learning, educators can help create a positive and empowering learning experience for their students. Hence, this research endeavored to answer the following questions.

RQ1. Is there any significant difference among the effects of massed, spaced, and traditional reading instructions on reading comprehension of Iranian EFL learners?

RQ2. Is there any significant difference among the effects of massed, spaced, and traditional reading instructions on reading motivation of Iranian EFL learners?

3. Method

3.1. Design of the Study

To fulfill the present quasi-experimental study's objectives, the researchers adopted a non-equivalent control group pre-test-posttest design. Its objective was to explore cause-and-effect associations between variables in positions where randomization was not feasible. The research investigated the impacts of an intervention in an authentic setting, albeit with less control over confounding variables, compared to a well-designed experimental study. Pretest and post-test were used to collect quantitative data. The study included two experimental groups and a control group, targeting spaced and massed instructions as independent variables while measuring reading comprehension

and reading motivation as dependent variables.

3.2. Participants

To conduct the research, 300 Iranian EFL learners initially took the Oxford Quick Placement Test (OQPT). From this initial pool, a sample of 150 EFL intermediate participants was selected non-randomly from four English Language Institutes in Gilan Province. The age range of the participants was between 16 and 21 years old. Then, using random sampling technique, the participants were assigned into the spaced instruction group, the massed instruction group, and control group. To ensure consistency, the same teacher instructed all experimental and control groups, effectively controlling for any teacher-related effects. The teacher was required to gain proficiency and understanding of the designated instructional methods and apply them consistently across all experimental and control groups.

3.2. Instruments

The study used some instruments to collect the required data. First, the OQPT is a standardized test that determines the participants' level of English proficiency. The OQPT served as the study's initial instrument. It was administered to assist the researcher in selecting homogeneous learners. Based on this exam, students whose scores fell between 30 and 47 (out of 60) were classified as intermediate and served as the study's target group.

Another instrument was a reading comprehension test (used as the pre-test and post-test) to evaluate reading comprehension skills. The test had 40 questions in various formats: multiple-choice, true-false, and fill-in-the-blanks. The questions were prepared based on the content from the American English File 3 (Latham-Koenig et al., 2015). The pretest aimed to objectively evaluate the participants' reading comprehension level, as it was hypothesized that they might comprehend the text but face challenges in expressing it in English. The test was reviewed, and its content was confirmed by three applied linguists with more than ten years of experience in test-making. The reliability of the pretest and post-test was estimated through Cronbach's alpha, resulting in a reliability index of 0.85.

Next, a five-point Likert scale, a 30-item modified version of the Motivation for Reading Questionnaire (MRQ) was also used to assess reading motivation of the participants before and after the treatment. The MRQ, first created by Wigfield and Guthrie in 1997, was intended to measure various aspects of reading motivation, such as social interaction, competition, compliance, reading avoidance, challenge, curiosity, reading engagement, importance, and recognition. Wigfield and Guthrie (1997) also conducted factor analyses and confirmed the construct validity of the MRQ, identifying eleven factors with a total of 53 items. The reliability of the different sections of the questionnaire ranged from .43 to .81. However, for the current research, the researchers selected 30 items to measure eight aspects of reading motivation, including reading efficacy, reading challenge, reading curiosity, reading involvement, the importance of reading, reading work avoidance, social reasons for reading, and reading for grades. The modified MRQ was first content-validated by three applied linguists who were university professors and had more than ten years of teaching experience. Then, it was piloted with a group of learners with characteristics similar to the study participants. The reliability of the modified MRQ was calculated through Cronbach's alpha based on the pilot testing with individuals whose characteristics were similar to the students in the main study. The questions and choices were reordered for the post-test to minimize potential bias from students recalling their initial answers. The structural and content validity of both the pretest and post-test were thoroughly scrutinized and endorsed by two language experts, ensuring the credibility and efficacy of these evaluation tools.

3.3. Procedure

First, the researchers used non-random convenience sampling to select 150 homogeneous students. Then, they randomly assigned them into two experimental groups and one control group with an equal number of students in each group (n1=n2=n3=50). Second, the researcher administered a teacher-made reading test as for reading comprehension and the modified version of MRQ (Wigfield &Guthrie, 1997) as pre-tests to examine the participants reading and motivation levels before the treatment.

The study took 20 sessions. In the first two sessions, the OQPT and the pretests were administered, respectively. Subsequently, 16 sessions were allocated to practicing

reading in the groups. In each session, one passage was taught. The 19th and 20th sessions were allocated to administer the reading comprehension post-test and MRQ questionnaire assessment.

During the treatment, the participants in the experimental groups received the instructional treatment; however, the kind of exposure to the treatment was different in the groups. In the spaced class, the 90-minute duration was divided into three 30-minute sessions, with any session taking place on separate days. Specifically, the spaced class was conducted three times a week, whereas the massed class was held once a week. The massed instruction group received an intensive 90-minute session during the treatment phase. In contrast, the spaced instruction group received three 30-minute sessions spread over time (approximately 90 minutes total). It is worth mentioning that the length of treatment time for the control group was similar to that of the massed group, 90 minutes one day a week, but with the difference in the treatment method of the two experimental groups mentioned in the above paragraph.

The experimental groups were taught reading using either spaced or massed instruction, such as pre-reading, while-reading, and post-reading strategies. In the teaching process, during the pre-reading phase for the experimental groups, interactive activities such as discussions, brainstorming, and visual aids were used to promote collaboration among participants and generate interest in the reading material. Strategies like identifying topic sentences, skimming for specific details, and scanning for main ideas and key information were employed throughout the while-reading phase for both spaced and massed groups. In the post-reading phase, the focus was on participants' interests, with discussions and questions aimed at eliciting direct responses to the text (thin questions) or encouraging deeper analysis and applying prior knowledge (thick questions). Additional activities included character analysis to encourage critical examination and ensure a thorough understanding of the text.

In contrast, the control group received the traditional method of instruction for reading comprehension. In the control group, the teacher employed techniques such as reading aloud, where the teacher read comprehension texts to the students, incorporating variations in pitch, tone, volume, pauses, eye contact, questions, and comments to

enhance the presentation and make it engaging. Following the reading of the texts, the students in the control group were asked to provide correct answers to questions related to the text and write a summary paragraphs. The summary paragraphs were to be written in their own words and should have contained the main ideas of the original text.

3.5. Data Analysis

The current study used SPSS Software, version 25, to analyze the collected data. The analysis included several steps. First, the Kolmogorov-Smirnov (K-S) test was used to check the normal distribution of the data. Then, the researchers utilized One-way ANOVA to examine if there were significant differences in reading comprehension and reading motivation scores among various groups, likely representing different treatment conditions. Following the initial phase of ANOVA, a posthoc was used through Tukey's HSD to make pairwise comparisons among the three groups to determine which group performed better than the other two. Additionally, the Bonferroni correction was utilized to adjust significance levels for multiple comparisons, aiming to mitigate the risk of Type I errors by establishing a more stringent threshold for statistical significance.

4. Results

Before comparing the mean variations among the spaced, massed, and control groups, the normality of the Reading Comprehension pre-tests was evaluated. Table 1 presents the outcomes of the Kolmogorov-Smirnov test assessing the normality of the pretest scores for the Reading Comprehension spaced, massed, and control groups.

Table 1. The Results of the Kolmogorov-Smirnov Test for Pre-test Reading Comprehension Scores

Groups			**Reading Comprehension PRE**
Spaced	N		50
	Normal Parameters[a]	Mean	25.72
		Std. Deviation	2.733
	Most Extreme Differences	Absolute	.144
		Positive	.144
		Negative	-.080

	Kolmogorov-Smirnov Z		1.017
	Asymp. Sig. (2-tailed)		.252
Control	N		50
	Normal Parameters[a]	Mean	25.00
		Std. Deviation	2.711
	Most Extreme Differences	Absolute	.116
		Positive	.116
		Negative	-.074
	Kolmogorov-Smirnov Z		.821
	Asymp. Sig. (2-tailed)		.511
Massed	**N**		**50**
	Normal Parameters[a]	Mean	25.26
		Std. Deviation	2.820
	Most Extreme Differences	Absolute	.117
		Positive	.117
		Negative	-.084
	Kolmogorov-Smirnov Z		.825
	Asymp. Sig. (2-tailed)		.503

As Table 1 shows that the p-values for Pretest scores (p=.252, .511, .503 > .05) exceeded the significance level of .05, indicating a normal distribution of scores. After confirming the assumption of normality, the subsequent step involved assessing whether there exists a significant disparity in reading comprehension between the control, the massed, and spaced groups.

To address the first research question, a one-way Analysis of Variance (ANOVA) was conducted (Table 2). The statistical test compared means across three groups: spaced instruction, massed instruction, and a control group. This test determined whether these groups' observed differences in mean reading comprehension scores were statistically significant or likely due to random variation.

Table 2. One-way Analysis of Variance Regarding Reading Comprehension Post-test

	Sum of Squares	df	Mean Square	F η²	Sig.
Between Groups	690.293	2	345.147	39.973 0.352	.000
Within Groups	1269.280	147	8.635		
Total			149	1959.573	

Table 2 indicates a significant difference between the groups [F (2, 147) =39.97, p<.001]. The eta-squared (η²) effect size measure was used to assess the effective size

of the table. The ratio of the sum of squares between groups (690.293) to the total sum of squares (1959.573) yielded an eta-squared value of 0.352, indicating that 35.2% of the variance in the data can be attributed to group differences.

It is crucial to note that this ANOVA Table 2 alone does not reveal the specific differences between the groups. The researchers ran Tukey and Bonferroni post-hoc tests to pinpoint which groups differ significantly. Table 3 presents the results of Tukey HSD and Bonferroni, which adjust for multiple comparisons to manage the overall Type I error rate.

Table 3. Post Hoc Test for Comparing the Groups

	(I) Student Group	(J) Student Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Control	Massed	3.44000*	.58769	.000	2.0485	4.8315
		Spaced	5.16000*	.58769	.000	3.7685	6.5515
	Massed	Control	-3.44000*	.58769	.000	-4.8315	-2.0485
		Spaced	1.72000*	.58769	.011	.3285	3.1115
	Spaced	Control	-5.16000*	.58769	.000	-6.5515	-3.7685
		Massed	-1.72000*	.58769	.011	-3.1115	-.3285
Bonferroni	Control	Massed	3.44000*	.58769	.000	2.0168	4.8632
		Spaced	5.16000*	.58769	.000	3.7368	6.5832
	Massed	Control	-3.44000*	.58769	.000	-4.8632	-2.0168
		Spaced	1.72000*	.58769	.012	.2968	3.1432
	Spaced	Control	-5.16000*	.58769	.000	-6.5832	-3.7368
		Massed	-1.72000*	.58769	.012	-3.1432	-.2968

The results of the post-hoc tests in Table 3 indicate significant differences between the control and massed instruction groups ($p < .000$), with the massed group scoring significantly lower on reading comprehension. Additionally, significant differences ($p < .001$) were found between the spaced and massed groups, with the spaced group scoring significantly higher. Furthermore, a significant difference ($p < .001$) was observed between the spaced and control groups, with the spaced group performing better. Lastly, the difference between the massed and spaced groups was found to be significant at the 0.011 (Tukey) and 0.012 (Bonferroni) levels, confirming the superior performance of the spaced instruction group. The results suggest that both spaced and massed instructions

had a positive impact on Iranian intermediate EFL learners' reading comprehension, was supported.

In the next phase, before examining the mean differences between the spaced and control groups, the researcher should assess the normality of the Reading Motivation pre-tests. Table 4 presents the results of the Kolmogorov-Smirnov test of normality for the Reading Motivation pre-tests.

Table 4. The Results of Kolmogorov-Smirnov Test for Pre-test Reading Motivation Scores

Groups			Reading Motivation PRE
Spaced	N		50
	Normal Parameters[a]	Mean	47.48
		Std. Deviation	6.717
	Most Extreme Differences	Absolute	.061
		Positive	.053
		Negative	-.061
	Kolmogorov-Smirnov Z		.434
	Asymp. Sig. (2-tailed)		.992
Control	N		50
	Normal Parameters[a]	Mean	47.18
		Std. Deviation	6.877
	Most Extreme Differences	Absolute	.063
		Positive	.062
		Negative	-.063
	Kolmogorov-Smirnov Z		.448
	Asymp. Sig. (2-tailed)		.988
Massed	N		50
	Normal Parameters[a]	Mean	47.20
		Std. Deviation	6.676
	Most Extreme Differences	Absolute	.077
		Positive	.077
		Negative	-.069
	Kolmogorov-Smirnov Z		.548
	Asymp. Sig. (2-tailed)		.925

As the results in Table 4 indicate, the significance level in Reading Motivation pretest scores is higher than the p-value of .05 (p=.992, .988, .925 >.05), the results of the Kolmogorov-Smirnov test for pre-test reading motivation scores show that the distribution

of scores in all three groups (Spaced, Control, and Massed) is not significantly different from a normal distribution. This suggests that the pre-test reading motivation scores in each group follow a normal distribution, which is an important assumption for many statistical analyses.

The influence of instructional spacing on reading motivation among Iranian intermediate English as a Foreign Language (EFL) learners was investigated using a one-way ANOVA. The mean scores of three groups were compared: learners exposed to spaced instruction, learners exposed to massed instruction, and a control group. Table 5 summarizes the findings of this ANOVA.

Table 5. One-way Analysis of Variance Regarding Reading Motivation Post-test

Post-test Result						
	Sum of Squares	df	Mean Square	F	η^2	Sig.
Between Groups	9233.373	2	4616.687	41.746	0.362	.000
Within Groups	16256.900	147	110.591			
Total	25490.273	149				

Table 5 displays, a significant difference between the groups [$F (2, 147) = 41.746$, $p < .001$]. The eta-squared (η^2) effect size measure was employed to evaluate the magnitude of the table's impact. By dividing the sum of squares between groups (9233.373) by the total sum of squares (25490.273), an eta-squared value of 0.362 was obtained, suggesting that 36.2% of the variability in the data is attributable to group distinctions.

The ANOVA table indicates a significant difference in reading motivation scores among the groups but does not identify specific group differences. Additional analysis using post-hoc tests is necessary to clarify these specific group differences. Table 6, post-hoc tests (Tukey HSD and Bonferroni) show significant differences in reading motivation between the control, massed instruction, and spaced instruction groups, addressing the second research question.

Table 6. Post Hoc Test for Comparing the Groups

	(I) Student Group	(J) Student Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Control	Massed	12.38000*	2.10325	.000	7.4002	17.3598
		Spaced	18.92000*	2.10325	.000	13.9402	23.8998
	Massed	Control	-12.38000*	2.10325	.000	-17.3598	-7.4002
		Spaced	6.54000*	2.10325	.006	1.5602	11.5198
	Spaced	Control	-18.92000*	2.10325	.000	-23.8998	-13.9402
		Massed	-6.54000*	2.10325	.006	-11.5198	-1.5602
Bonferroni	Control	Massed	12.38000*	2.10325	.000	7.2866	17.4734
		Spaced	18.92000*	2.10325	.000	13.8266	24.0134
	Massed	Control	-12.38000*	2.10325	.000	-17.4734	-7.2866
		Spaced	6.54000*	2.10325	.007	1.4466	11.6334
	Spaced	Control	-18.92000*	2.10325	.000	-24.0134	-13.8266
		Massed	-6.54000*	2.10325	.007	-11.6334	-1.4466

The post-hoc tests in Table 6 revealed significant differences in reading motivation between the groups. Students in the spaced instruction group showed significantly higher reading motivation than those in the control group. Similarly, the massed instruction group exhibited significantly higher reading motivation than the control group. Interestingly, the spaced instruction group also demonstrated significantly higher reading motivation than the massed instruction group. These findings suggest that both spaced and massed instructions were effective in boosting reading motivation compared to no intervention. However, spaced instruction seemed more effective in promoting reading motivation than massed instruction. The research found that both massed and spaced instruction significantly improved reading motivation among Iranian intermediate EFL learners, as compared to traditional instruction. However, spaced instruction emerged as the more effective method, demonstrating a more significant impact on reading motivation than massed instruction.

5. Discussion

The present investigation sought to assess the effects of spaced and massed instruction on reading comprehension and reading motivation among Iranian EFL learners. The findings unequivocally demonstrated that students who received spaced instruction achieved significantly higher results than those in the control group, supporting the notion that distributing learning sessions over time is a superior approach to learning compared

to continuous or concentrated instruction. These results are consistent with prior research emphasizing the benefits of spaced learning for improving retention and overall learning outcomes (). The results also highlighted that the average scores for reading comprehension and reading motivation were higher than massed instruction cohort when utilizing spaced instruction, indicating statistically significant differences between the two groups. The outcomes underscored the significance of spaced instruction for intermediate EFL learners in Iran, demonstrating its superiority over mass instruction in producing positive results, including improved reading and concept comprehension, as well as heightened motivation for reading.

The findings of this research indicated that spaced instruction, characterized by the distribution of study sessions over time with intervals for reinforcement and review, had a positive impact on reading comprehension and motivation. Spaced learning facilitates repeated exposure to content over an extended period, facilitating information absorption, pattern recognition, and the formation of connections between ideas and concepts. Additionally, the incorporation of various learning activities within spaced instruction helps maintain learners' motivation, preventing cognitive overload and burnout. Besides, this approach establishes a supportive learning environment that sustains reading motivation and enhances performance. Motivation is particularly vital for EFL learners as it not only enhances reading comprehension but also plays a crucial role in fostering critical thinking skills. EFL educators should provide opportunities for students to excel, nurturing their motivation and improving both their reading comprehension and critical thinking capabilities.

Valuable insights into effective learning strategies are provided by studies conducted in experimental psychology. These studies shed light on the benefits of spaced education in maximizing long-term memory retention and emphasize the importance of incorporating interval-based learning approaches in various educational settings. Gashti et al. (2024) reaffirm the results of this study, supporting the idea that spaced learning is more effective than mass learning. The findings demonstrate that the spaced group outperformed the massed group in reading comprehension during the post-test. To build on these findings, students should receive distributed instructions at regular intervals to increase the likelihood of retaining acquired knowledge until it can be reinforced. Several

methods can be utilized to enhance learning, such as incorporating random prompts, providing explicit instructions, or including specific activities for speaking, reading, or writing tasks. Miles (2014) further strengthens the credibility of the study's results, reinforcing the benefits of spaced learning and highlighting the value of incorporating interval-based instructional strategies that promote effective knowledge retention.

The results of the current study align with previous research conducted by Carpenter et al. (2012), supporting the concept of coding variability strategy. This strategy suggests that when two items are distinct, they are more likely to undergo distinctive encoding in the participant's mind (Goossens et al., 2014). The idea of variations in memory representation is further supported in different settings where separate elements are presented, providing additional cues that aid retrieval. Therefore, the usefulness of spaced distribution instruction often leads to more effective recall. Carpenter et al. (2012) emphasize the significance of variability in the in-memory representation and its impact on memory performance. The concept that spaced distribution instruction enhances recall aligns with the principles of coding variability theory. By incorporating spaced intervals and exposing learners to different contexts during the learning process, memory retrieval is strengthened, resulting in improved overall recall.

Further, the results of the study demonstrate that the spaced MRQ group exhibited a significantly higher post-test reading motivation score compared to the massed MRQ group. This highlights the potential advantages of utilizing spaced repetition methods in enhancing knowledge retention and increasing motivation. The findings suggest that the incorporation of spaced education techniques contributed to this enhancement. These outcomes are in line with Gashti et al. (2024) & Guthrie et al. (2000) perspectives who emphasized the crucial role of motivation in reading. Motivation serves as a key driver that motivates individuals towards specific objectives, with students who find pleasure in reading typically allocating more time to the activity, while those with lower interest levels tend to avoid it (Gashti et al., 2024).

The findings of this study are consistent with those of Bird (2010), who investigated the effects of direct L2 grammar teaching using delayed teaching methods. The study showed that the group with spaced learning outperformed the group with concentrated

learning. Furthermore, it was observed that the group with massed learning did not reveal any improvement. Also, the findings of this study agree with those of Mashhadi and Farvardin (2017), who investigated the impacts of individual and mass learning on the retrieval and retention of grammatical structure in ESL learners. The results of their research displayed that the Gap group had better times than the other two groups on the delayed final test. However, there were no statistically significant differences between the peripheral and combined groups at the last direct test.

The results of this first study using the Reading Motivation Questionnaire provide significant new information about students' reading motivation nature and how student reading motivation is related to student reading demeanor. The study revealed that the participants in the spaced instruction group exhibited strong motivation towards reading. Notably, the concept of spaced repetition, involving repeated exposure to information at increasing intervals, has been extensively researched in cognitive psychology. The well-documented spacing effect suggests that the utilization of spaced repetition has been shown to result in enhanced memorization and learning outcomes compared to massed repetition, where information is repeated at short intervals. This likely played a role in the observed positive changes in participants' reading behavior and comprehension skills. The study also indicates that the formation of positive reading habits and the use of spaced repetition techniques in reading comprehension instruction contributed to participants' favorable reading behavior.

6. Conclusion

Overall, the research highlights the importance of incorporating spaced repetition techniques in reading instruction to enhance learning outcomes and foster positive reading habits among students. By leveraging these findings, educators can design more effective curricula, develop materials that support spaced repetition, and implement teaching strategies that promote long-term retention and comprehension skills.

The findings of the current study may encourage educators to engage in time-shifted instruction as a means of enhancing student learning, given its perceived superiority over mass and traditional instructions. The outcomes have the potential to

guide English teachers in the implementation of spatial instruction. The knowledge gleaned from this research is expected to support L2 educators, researchers, and curriculum developers in understanding how English reading instruction can be effectively carried out through spaced teaching methods.

The outcome of this investigation demonstrated that the utilization of spatial training contributed to a more robust reading comprehension compared to the utilization of massive training. Given the results gleaned from the study, it can be inferred that the process of learning through face-to-face events at different intervals permits the acquired information to be adequately retained until the next chance for acquisition of knowledge presents itself, either by chance through exposure or intentionally through instruction, or due to a desire to apply a specific element in speech, reading, and so forth.

In the academic context of learning foreign language skills, specifically in the domain of reading comprehension, the inclusion of delayed learning brings forth numerous advantages. The implementation of distributed training enhances students' confidence in their ability to comprehend what they read. The findings of this research suggest that individuals studying English should actively utilize spatial training to track their development and improve their learning. The results of this study could assist educators in conducting their classrooms through spaced techniques, as this instructional approach proves to be more effective than conducting classes in bulk. The results will also assist English teachers in deciding whether to employ spatial education or bulk instruction.

It is crucial to examine the impacts of massed and spaced instructions on elementary, upper intermediate, and advanced learners. This will provide a comprehensive insight into the effectiveness of these methods and help educators make informed decisions in creating a victorious learning environment. This exploration would help to reasonably comprehend how teaching methods impact students of different ability levels. Additionally, while this study primarily focused on Iranian EFL students, conducting similar investigations in other EFL and ESL settings would enhance the breadth of the findings. This would enable the examination of potential variations and cultural influences on the phenomena under study. Future research could replicate the analysis by extending the treatment period and conducting multiple post-tests with time intervals in between. It

should be emphasized that care must be taken when generalizing the findings of this study to all language learners, as the research was centered around intermediate Iranian EFL students. Finally, the participants selected for the study were limited to individuals aged between 16 and 21 years old, so the conclusions may not apply to other age groups. These suggestions will furnish helpful guidelines for future research, enabling a deeper investigation and comprehension of how teaching methods affect language acquisition.

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EFL writing skill requirements and challenges: Teachers and learners perceptions in focus

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Abstract

Although there have been many studies concentrating on writing development and techniques to improve it, there still remains the need to investigate more and give extra insight to the EFL language learners and teachers on these issues. Using a grounded model of research, the researchers performed an investigation to examine the various aspects concerning writing challenges, and requirements to improve it. Semi-structured interviews were conducted with an aim to achieve a thorough understanding of the topic by recruiting 25 male and female experienced EFL teachers along with 25 male and female intermediate EFL learners from language institutes in Tehran as the participants of the study through purposeful sampling technique. Then, 5 distinctive questions were chosen for the teachers and another set of 5 different questions for the learners to elicit their perceptions. After gathering the data and identifying the initial codes, the sub-categories emerged and helped the researcher to form the final model. Among the categories, writing strategies like collaborative and game-based, requirements like background, vocabulary, and grammatical knowledge were found to be essential. Based on the findings, a model was developed which is believed to support EFL learners in improving their writing proficiency.

Keywords: EFL Students' Perceptions, EFL Teachers' Perceptions, EFL Writing Challenges, EFL Writing Requirements

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1. Introduction

In the globalization era, it is crucial to realize English as an international language for interaction among humanity around the world (Fuadilah, 2019). Currently, due to the improvements in technology, English is used widely in the community for communication (Adas & Bakir, 2013, p. 254). With reference to Mahu (2012), just one out of five people can comprehend English. Consequently, English has become a required part of our lives. On the other hand, among all four skills, writing is the most challenging and problematic skill for English language students (Adas & Bakir, 2013). Writing is viewed as a game of chess by many researchers due to its elaborateness and complication (Baqerzadeh Hosseini & Pourghasemian, 2020, p. 243). Both instructors and learners have to deal with some challenges since writing is a computerized and specialized skill (Wall, 2020).

Learners with writing disabilities are those who face many complications, such as production fluency, dictation, accuracy, vocabulary variety, and sentence structure (Collins et al., 2017). Many sub-skills are required in writing, which makes it a detailed skill. Fine motor skills, multisensory integration, mastery, meaningful vocabulary, spelling proficiency, syntactic abilities, and the ability to establish ideas are examples of these sub-skills (Wall, 2020, p. 4).

One component that facilitates writing quality is the ideas in writing (Crossley & McNamara, 2016). Prewriting exercises can be a useful strategy to enable the learners to think about the subject and present their ideas. Therefore, after performing the prewriting exercises, learners suffer less from cognitive blocks and have something, to begin with. There are several prewriting strategies, including mind mapping, brainstorming, discussion, outlining, and free writing (Brinton et al., 2020). As recently asserted, free writing has been assumed to be a beneficial process for prewriting. Particularly, it encourages writers to clear their minds from grammar and focus more on developing ideas.

2. Review of literature

One of the most valuable tools for communication is writing, through which learners aim

to generate paragraphs and coherently combine them to develop a communicative and influential text (Alrouji, 2020). Writing is a strategy that delivers noticeable results for recording language with a special method or form (Deveci, 2018, p. 1). Writing is a fundamental skill that has always been used as a way of engaging people, communicating information, and protecting culture (Wall, 2020). Writing has always been in the second/foreign language curriculum, and in the 21st century, the need to have the capacity to write well has been felt more than before (Weigle, 2014). In fact, through the use of grammar principles, people can skillfully convey and transfer their assumptions, impressions, and emotions since writing is a tool of communication among people (López-Díaz et al., 2020). According to Brown (2016), writing is a culturally particular learned behaviour, unlike speaking. Individuals realize to write when it is taught to them in an educated society.

The crucial function of writing cannot be rejected in people's lives. Improvements in computer technology need more interaction in writing than speaking (Deveci, 2018). Hence, it is difficult to separate it from life itself; interest in continual academic growth through writing enables individuals to expand the quality of their lives. Besides, writing is rapidly linked and attributed to students' learning. There are some beliefs for this statement. Firstly, learners can profit from writing for evaluating what they have already learned; therefore, it assists to enhance learning by transferring the information from short-term memory to long-term memory. Second, writing assists learners to accomplish a deeper and better awareness of theoretical information. Reflecting on the texts and information can be deeper when it is done through writing. More precisely, writing training can facilitate the acquisition and learning process (Deveci, 2018).

Instructors constantly try to support their students to produce the correct and fluent target language (Dolati & Mikaili, 2011). This goal can be accomplished by providing learners with a pleasant and enjoyable learning environment (Tabatabaei, 2012). As the world changes, learning and teaching styles face many changes. Newly, modern styles have developed several different and distinct teaching and learning opportunities in current education (Haddadi & Tahririan, 2014). According to Lantolf and Thorne (2006), Vygotsky's sociocultural theory (SCT) had a serious influence on learning and pedagogy. Mediation is a crucial belief in this theory, which implicates the use of equipment to

accomplish goals or solve difficulties (Aghazadeh & Soleimani, 2020, p. 183). Tools in sociocultural theory are the symbolic exercises of students which include computers, television, schedules, etc. (Lantolf & Thorne, 2006).

The notion of writing fluency is a questionable issue like reading and speaking fluency that has been defined in various ways. Explanations implied for fluent writing are qualitative in nature. They relate to the generation of the written language quickly, coherently, properly, and creatively (Abdel Latif, 2013, p. 99). Fluency means writing text in a way that is easy for the reader to read without any part of the text making the reader stop while reading (Atasoy & Temizkan, 2016). Writing fluency means building more words and structures in a limited time, regardless of the complexity and accuracy of the structure. Fluency is a measure concerning rhythm and time (Atasoy & Temizkan, 2016, pp. 1461). In contrast, writing accuracy is specified as a learner's proficiency to write a passage without errors in punctuation, items, subject-verb consistency, spelling and conjunctions (El-Sakka & Seiffedin, 2017). Consequently, many EFL writing instructors attempt to manipulate students to write correctly (Almasi & Tabrizi, 2016). To estimate and check text accuracy, investigators require to evaluate different characteristics of text accuracy such as vocabulary, morphology, syntax, and mechanical parts of the text (Anderson et al., 2010).

As Brown (2016) points out, half a century ago, the focus of writing instruction was on the product approach. They determined how the product (e.g. dissertation, article, and story) should look like. The product approach neglected the criteria of English rhetoric, appropriate use of grammar, and organized text structure. However, all of these criteria should be considered. Instructors should enable students to concentrate evenly on subject, messages, and ideas. Therefore, the process approach and innate motivation of the individual should not be dismissed but must be placed at the center of learning (Brown, 2016). Writing is a productive skill that implicates three stages: Pre-writing, writing and post-writing (Alsmari, 2019). The pre-writing stage is dedicated to gathering input and writing text. The second stage is the writing phase, in which learners do different activities such as writing a paragraph or a report. The last stage is post-writing, which is the activity confirmation and feedback phase (Alsmari, 2019).

Various theorists have described the characteristics of process-oriented writing and product-oriented writing. For instance, Murray sees process-oriented writing as inner corrections used to interpret what it means to oneself. However, the process-oriented text is an external modification that makes the meaning obvious to the reader (Feng & Sun, 2009, pp. 150-151). Based on Nunan's idea, the product's approach directs the writing task by simulating and copying the model exemplified by the teacher. However, the process approach directs the stages that must be taken to finally develop the text (Bijami & Raftari, 2013). Table 1 shows the various stages of the creation process with definitions and examples. The process approach normally includes learners at various stages: prewriting, drafting, revision, and finally the finished version of the work (Brinton et al., 2020; Brown, 2016; Harmer, 2001).

Table 1. Writing Process

Phase	Definition	Examples of Teaching and Learning Activities
Pre-writing	Structures activities to provide motivation, content, fluency, language practice	Structured language practice, readings, films, discussions, brainstorming, webbing, outlining
Writing	First draft	Focus on content, getting ideas on paper
Response	Reaction of a reader or listener	Peer review, partners or small groups, teacher conferences, written feedback
Revising	Reseeing or rethinking content; second draft	Reorganizing, adding details, adding support for arguments
Editing	Refinement and attention to writing conventions, including grammar and vocabulary; third draft	Checklists, grammar logs, exercises, proofreading practice
Post-writing	What students and teachers do with finished pieces	Display, share online, compile class writing into a booklet
Evaluating	How teachers and/or students assess student's writing	Rubrics, conferences, self-evaluation, portfolios

Adapted from California State University, Stanislaus (n.d.).

The literature on writing procedures in a foreign language lacks practical guidance on overcoming EFL writing challenges including linguistic and cultural barriers. Indeed, there is a void in comprehensive strategies addressing grammar nuances, idiomatic expressions, and cultural context integration, crucial for effective communication and authenticity in second language writing. In the present study the researcher tried to catch

a deep understanding about the different challenges that an EFL learner faces from both teachers and learners' point of view. To address the objectives of the study, the following research questions were proposed:

1. What are EFL teachers' perceptions regarding the challenges, and requirements of improving L2 writing skill?
2. What are EFL students' perceptions regarding the challenges, and requirements of improving L2 writing skill?

3. Methodology

3.1. Design of the Study

As noted by Birks and Mills (2015), grounded theory methods are popular when the purpose of research is theory building, and this makes a lot of sense given the lack of research in this area (Glaser, 2007). Currently, this method is famous in the field of language learning and teaching, and several studies have been administered using grounded theories (e.g. Adel, Egtesadi & Sadeghi, 2019; Ghadyani, Tahririan & Afzali, 2020). The primary goal of the Grounded Theory method is to develop a theoretical framework that captures teacher-learner perspectives on writing skills, an area that is underexplored in existing literature, making it an apt choice for this study.

Among the various schools of grounded theory, the researcher opted for the Glaserian classical grounded theory method. This approach aligns with the novel methodology proposed by Glaser and Strauss (1967), which allows the data to guide the researchers. The methodology adopted involves iterative processes where data collection, coding, and analysis (inputs) are continuously interchanged with classifying, categorizing, and theory development (outputs). The decision to use the Glaserian approach is rooted in its flexibility and responsiveness to the data, which is essential for uncovering nuanced insights in the complex field of language education. The iterative nature of this method ensures that emerging theories are grounded in empirical data, providing a robust framework that accurately reflects the realities of teacher and learner experiences.

3.2. Participants

Participants in this research were selected using a ‘purposeful sampling’ technique (Creswell, 2012). The criteria for participant selection included intermediate students according to their placement test results which were recorded in the language institutes they were studying English with varying levels of writing skills and experienced teacher with over five years of teaching experience. To ensure diversity, the researcher employed maximum variation sampling (Ary, Jacobs, Sorensen, & Walker, 2014), which allowed for a wide range of gender, age, cultural, and family backgrounds among the participants. The only restrictions were on the participants' proficiency levels and years of English study.

Both the students and the teachers were invited to participate in separate and individual semi-structured interview sessions. The selection of participants was guided by theoretical sampling, meaning data collection and analysis continued until no new information emerged, thus achieving theoretical saturation (Hadley, 2017). Data collection ceased after saturation was reached with the 15th participant. Ultimately, the study included 25 EFL learners and 25 teachers from Tehran, Iran, all aged between 25 and 35, with a minimum of five years of experience in learning or teaching English.

3.3. Instruments

The primary data collection instruments for developing grounded theories are interviews and questionnaires (Birks & Mills, 2015). Hence, the researcher decided to use semi-structured interviews for data collection. The interviewer formulated three key topics for discussion with participants. For students, the topics included: (a) the perceived benefits of having strong writing skills, (b) the essential writing skills they require, and (c) the challenges they encounter during writing activities (See Appendix A). For teachers, the topics covered: (a) the necessary components for teaching writing tasks, (b) the challenges faced in teaching writing, and (c) the different styles used in teaching writing tasks (See Appendix B).

Based on participants’ responses, additional follow-up questions were posed to clarify any ambiguous statements and achieve theoretical saturation. As recommended by Charmaz and Belgrave (2012), the researcher refined the interview questions through

an iterative process of data collection and analysis, asking supplementary questions as needed. To ensure a complete and accurate record, all interviews were recorded, following the suggestion by Birks and Mills (2015) that grounded theory researcher should maintain a full record of interviews to avoid data loss and allow full attention to the interview process.

3.4. Data Collection and Analysis Procedures

The data collection process began with the target participants. Over a period of three months, interviews were conducted, with data being simultaneously analyzed and coded. At the beginning of each interview, rapport was established and a friendly atmosphere was created. Then, the consent was taken from each participant to record their voices. All the interviews were done individually and each interview took almost fifteen minutes. Besides, the language during the interview was a mixture of English and Persian for the comfort of participants to give more details. The learners' initial interview prompts included five questions: the first one asked about their previous experiences with writing tasks and the challenges they faced in language learning; the second question inquired about the necessary skills for completing writing tasks; the third one assessed their proficiency in writing; and the fourth and fifth questions evaluated the advantages or disadvantages of having a clear process for writing skills.

For the teachers' interviews, the first question focused on the important criteria for scoring a writing activity. The second and third questions aimed to identify the challenges teachers face and the solutions they implement when teaching writing skills. The fourth question examined the prerequisites for teaching writing, and the fifth one investigated the relationship between writing skills and other core skills such as speaking, reading, and listening.

Interviews were conducted both face-to-face and via voice calls to elicit participants' the attitudes. Data were analyzed concurrently with the interviews, and the collected data were transcribed for detailed analysis after each session. The number and content of the questions changed during the study as we proceeded in order to cover any possible data and area of interest and importance. Transcribing the interviews into Microsoft Word files enabled the researcher to conduct an in-depth analysis, scrutinize

the data, and address any deficiencies in subsequent interviews. Grounded theory methods were employed to develop concepts, with interview questions designed to construct and validate unique concepts (Glaser, 1998). After transcribing all the interviews, the researcher analyzed the transcripts sentence by sentence to create open-ended codes. Open coding involved breaking down the data into codes to compare incidents and extract relevant concepts, maintaining an open attitude and discarding preconceptions throughout the process (Glaser, 1992). In this phase, in vivo codes—direct quotes from participants—were used. As concepts emerged and the most relevant ones were selected, these codes were refined and formalized. Once no new open codes emerged, the researcher moved to the selective coding stage.

During selective coding, the data were meticulously analyzed using the constant comparison method (Glaser & Strauss, 1967), comparing each data item with all other collected data. Through continuous comparisons of codes to incidents and codes to other codes (Urquhart, 2013), categories and subcategories were developed and revised as new data were added. This involved grouping data related to the same concept and refining the groups as necessary. Following Charmaz's (2014) perspective on the fluidity of the classification process, categories were merged or split during the analysis. In the final stage, theoretical coding explored the relationships between concepts and categories, as well as the interconnections among various categories. According to Glaser (1978, 2001), theory emerges during theoretical coding, which allows for a deeper understanding of the data and the development of a cohesive theoretical framework.

In the following, the categories which emerged from the interviews with the participants will be presented. The raw data were made concise and converged through initial, open, and axial coding in order to make a meaningful and comprehensive model.

4. Findings

4.1. EFL Teachers' Perceptions

By analyzing the interview data elicited from the teachers, the following categories were emerged:

Styles, Requirements, Challenges of Writing

For the case of teachers two different and one similar category were shaped with different subcategories. The main categories included: the styles, challenges, and requirements of writing. For the main category of style, game-based strategy was proposed for children to make them motivated and collaborative and for adults peer-learning was suggested. Other styles encompassed process versus product oriented writing that could be assimilated by top down or bottom up process of writing. The last style that was mentioned by the teachers was free writing and on the other hand instructed writing.

In terms of the requirements of writing, teachers believed that lexical and structural knowledge were essential for successful writing. The next issues concerning the requirements of writing were background knowledge and motivation. These two were frequently expressed by the teachers. Another most necessary prerequisite of writing according to teachers was making an outline as a draft and practice of prewriting. They believed that this activity needed brainstorming to gather all needed information to make a framework for the next writing stage. Moreover, teachers asserted that writing shouldn't be secluded from other skills and there should be coordination with other skills as they are interrelated especially in case of reading skill that is somehow directly connected to writing and can be used as a sample for writing task in different genres by which lots of things can be learnt by the learners inductively.

The third factor concerning the teachers' insights included the challenges of dealing with writing tasks. The first stated challenge was the time consuming nature of doing a writing task. This issue is because of writing process which requires writers go through several stages including pre-writing and revision when engaged in a writing task. Besides, in modern life through the online communications and instant messaging many bad/good habits have entered the language of learners that either help them or take them away from the standards of writing.

4.2. EFL Learners' Perceptions

On the other hand, the responses provided by the learners yielded the following categories:

Advantages, disadvantages, and writing requirements

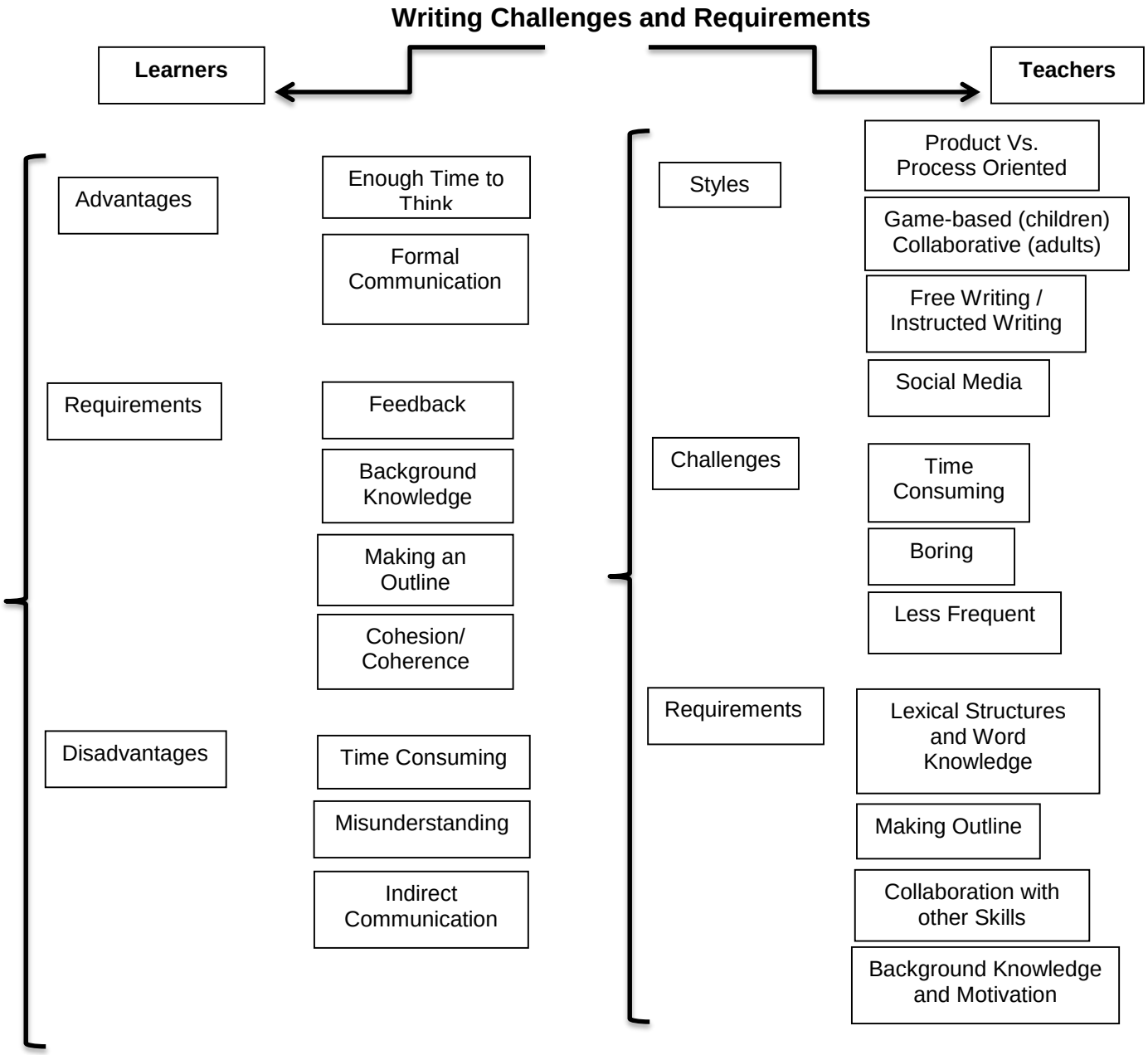
The learners typically talked about the advantages and disadvantages of EFL writing. Indeed, the learners discussed both the positive and negative aspects of learning English as a Foreign Language (EFL) writing. They highlighted several advantages. One benefit they mentioned was having sufficient time for writing tasks, which allows them to revise their work thoroughly before submitting it. Additionally, they noted that practicing EFL writing helps them develop a formal communication style. On the other hand, they also pointed out several disadvantages. These included the time-consuming nature of writing, the potential for indirect communication which may lead to misunderstandings, and the complexities involved in conveying meaning effectively. Furthermore, the learners identified several key elements necessary for effective EFL writing. These included maintaining cohesion and coherence in their writing, possessing adequate background knowledge on the topic, receiving constructive feedback, and preparing a clear outline before beginning to write.

In summary, the learners engaged in a comprehensive discussion about the pros and cons of EFL writing, while also outlining essential requirements for improving their writing skills in this context.

5. Discussion and Conclusion

Since writing is one of the most challenging and time consuming tasks and skills of language learning and teaching, the researcher of the present study decided to perform a qualitative study to capture a deep understanding and insight about the challenges and requirements of EFL writing teaching and learning by recruiting 25 male and female intermediate English learners and 25 male and female experienced teachers. Semi-structured interview sessions which included five initial questions for the teachers and five questions for learners were asked through the study in a cyclical mode based on the upcoming issues during the interviews. Next, the collected data were coded through initial and axial coding and based on the results a model was created. Many areas were stated by the learners and the teachers under the categories of challenges, requirements, styles, advantages, and disadvantages about writing.

Figure 1. Overview of core and major categories, related subcategories, and concepts in writing skill



While some learners considered writing as a task where they had enough time to develop, and found it suitable for formal communication and desirable for the individuals who did not like engaging oral tasks, others believed that it could cause misunderstanding and could be time consuming and boring. Nearly all teacher participants believed lexical

and syntactic knowledge as necessary requirements to develop a good writing along with background knowledge and motivation. Besides, it was stated that writing should be learnt and practiced along with other language skills especially reading in order to achieve more efficient results which is in line with Fitzgerald (2010) who states that reading and writing rely on analogous mental processes so it can be understood that they can help each other development.

The findings of this study are in line with the literature in recognizing writing as a crucial skill for communication and cognitive development (Hyland & Hyland, 2006). The results also acknowledge the importance of teaching methodologies (e.g., process-oriented vs. product-oriented) and the integration of writing with other language skills (Fitzgerald, 2010; Memari Hanjani, 2014). In terms of EFL writing requirements, the results support Ferris' (2003) arguments who believes that students should possess a strong command of grammar and vocabulary; understand planning and organization of their thoughts clearly, concisely, and logically; be aware of style and register in different situations for their audiences; and be sensitive to cultural and social context of the language they are writing in.

The findings of the study outline several implications for EFL teaching and learning which include:

- Tailoring instructional strategies to accommodate different learner preferences and developmental stages.
- Integrating writing with other language skills to reinforce learning and enhance proficiency holistically.
- Providing structured support for prewriting activities and revision processes to help learners overcome challenges and improve writing quality.
- Offering opportunities for constructive feedback and reflection to foster continuous improvement in writing skills

In conclusion, these findings highlight the complexity of EFL writing instruction and underscore the need for adaptable teaching strategies that address the diverse needs, challenges, and preferences of learners while promoting effective skill development in writing.

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Appendices

Appendix A: EFL Teachers' Interview Prompts

1. How do you evaluate your students' writings?
2. What are the challenges for teaching and developing writing skill?
3. What is the best way you adopt to teach writing? (explain)
4. What items and factors should precede teaching writing?
5. Is there any priority for teaching other skills than writing (if yes, why and how?)

Appendix B: EFL Learners' Interview Prompts

1. What problems do you have when doing a writing task?
2. What are the pre-requisites for doing a writing task?
3. How strong are you in writing regarding your writing scores and what are your areas of strengths?
4. What are the advantages and disadvantages of writing in case of communicating ideas?
5. How would you prefer to proceed through a writing task?