

Developing a Learner Autonomy Questionnaire in English as a Foreign Language Reading Comprehension

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Abstract

There is not a widespread agreement on the operational definition of the construct of English as a Foreign Language (EFL) autonomy in reading comprehension (RC) because there is not an established tool to quantitatively describe its proportion. Therefore, the current investigation intends to design a learner autonomy questionnaire in reading comprehension and undertake its validation; the proposed items are context-specific. In this study, consultation with the relevant literature and the views of EFL experts provided the researchers with invaluable insights to construct a five-component-model for the definition of autonomy in EFL RC. Both exploratory and confirmatory data analysis procedures were utilized to check the validity and reliability of the contextualized items in the proposed model. The findings put forth new insights for the practitioners, curriculum developers, and EFL teachers to make students autonomous in reading comprehension skills. The results are also promising in motivating the at-risk students to actively develop reading comprehension skills in the reading classes.

Keywords: Learner Autonomy, Learner Autonomy questionnaire development in EFL Reading Comprehension, Reading Comprehension, Validation

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1.Introduction

1.1 Indicators of Autonomy in Reading

The autonomy of the learner is broadly perceived as a required instructional objective in EFL communities. Learning autonomy is considered a determining factor encouraging the learners to develop and reach their potentials. Similarly, autonomous reading has attracted the attention of many instructors and educators for decades. Various learning views and teaching practices are proposed to elaborate on the development of EFL autonomous reading and the removal of possible obstacles in this area (Borg & Al-Busaidi, 2012). Learner autonomy refers to a level at which students are generally expected to independently choose the necessary learning resources and strategies, make use of the language to the extent that they require, and speak and write in that language as they fully prepared. Learner autonomy should be developed progressively by the learners themselves who extend their autonomy by relying on what they already are capable of doing (Humphreys & Wyatt, 2014).

Reading comprehension, which is in itself characterized by a complicated procedure, is considered crucial not only for acquiring the language but also for learning it academically. Even though reading comprehension is the most significant skill for learners at various levels, most Iranian university learners have been observed to be incapable of reading comprehensively and autonomously (Fatehi Rad, 2011; Ghalandari & Talebinejad, 2012; Ghazanfari, 2009; Shokouhi, 2005). According to Tabiati (2016), the possession of a capacity to make a decision concerning reading (setting reading objectives, setting schedules, deciding the content of reading materials to read, finding reading methods, techniques and resources, and their learning needs), is demonstrated by learners' activities in reading such as: setting the reading purpose (for pleasure, or for getting information),

determining when to do reading activities, making a decision about what to read, determining the methods or techniques for reading, determining the weakness in reading, and deciding the medium to overcome this weakness.

Moreover, the possession of a capacity to control reading is demonstrated by learners' activities in reading such as: adding or reducing the time for reading, deciding whether to move to other places for reading activities, or whether to change the reading procedures or not, reading supplementary materials not assigned by teachers, approaching other people to discuss reading materials or reading problems, finding out resources for reading, deciding what reading strategies to use and changing the strategies when necessary. Besides, the possession of taking responsibility in reading is indicated by learners' activities in reading, such as: deciding the time and the material read, grading the materials to read, accomplishing reading tasks according to schedule, and also reading fast with full understanding.

Learners possessing the indicators mentioned above are assumed to be learners who achieve success in reading because the indicators of autonomy in reading imply better language reading, which results in autonomous reading (Joshi, 2011; Mineishi, 2010; Zhong, 2008). Autonomous readers are characterized as competent learners, responsible readers. This idea refers to the original idea of independent learning (Benson, 2001), stating that the decision about the selection of learning objectives, learning contents and materials along with learning methods, techniques used in learning as well as how to assess learning results and impacts, all of them are made by the learners themselves, who are categorized as good learners and responsible learners as well (Borg & Al-Busaidi, 2012; Humphreys & Wyatt, 2014).

Today, language learning is viewed as student-centered with the teacher acting as one source of knowledge and facilitator (Timirbaeva, 2013). A crucial issue in engaging learners in the reading process is to give them more

responsibility to turn them into autonomous readers (Timirbaeva, 2013). As a result, learners would be enabled to assume more control over their reading process with respect to specifying the reading goals; identifying the contents and the advancements; opting for methods and strategies to be employed; observing the process of acquisition; and appraising what has been read and comprehended (Ceylan, 2015). Language learners are expected to depict self-confidence in dealing with different types of texts and monitoring their comprehension. Thus, they must realize the significant role of learner autonomy in getting better competence in reading comprehension (Karasakaloglu, 2010).

1.2 Autonomy in Terms of Social Constructivism

Sivasubramaniam (2011) maintains that autonomy, which was so far subject to critique for its focus on the individual learner, is now advocated by the notions of social constructivism that underlines active learning. Put differently, the concept of autonomy is not associated with the learners' isolated learning. Instead, they socially develop knowledge through active involvement in language learning. Little (2012) proposed that the learner's autonomous learning is induced primarily by interdependence, not independence attending to the synergy between whole and individual activities. Consequently, the enhancement of autonomy in reading stems from the combination of social and reflective processes. Social interaction leads learners to work collaboratively with peers empowering them to form higher-order cognitive skills in reading by monitoring, analyzing, and appraising the knowledge presented in the texts.

1.3 Correlation between Autonomy and Reading Comprehension

Learning autonomy and its contribution to reading comprehension development have recently received due scholarly attention, been the subject of much intense debates. According to Dafei (2007), recent publications

document that the independent self-directed learning effectively and mainly improves the learning quality; Dafei believes that this is the main reason for the current pivotal debate on the correlation between autonomy and reading comprehension. This controversy is further maintained by the worldwide concern in education, requiring the teachers to display the efficiency of their teaching practices to attain proficiency, which in turn requires the learner to be autonomous. In language learning, it is argued that a successful autonomous learner is metacognitively aware of activating and implementing the knowledge and the strategies (e.g., planning, monitoring, and evaluating) necessary in the process of learning every skill. Zarei and Ghahremani (2010) suggested that learner autonomy may contribute to the development of higher levels of reading comprehension in Iranian EFL learners. In other words, better comprehension can take place when learners act autonomously through social interaction and collaboration. In this learner-centered environment, the language teacher should encourage the students to feel responsible for their own language learning; that is, language teachers need to give the students opportunities and motivation to be self-motivated and function autonomously in their learning profession (Zarei & Gahremani, 2010). Surprisingly, one of the apparent areas of gap in the reading comprehension literature and learner autonomy is having no standardized reading comprehension instrument to measure learner autonomy in EFL reading comprehension.

1.4 Constructing a Questionnaire to Examine the Autonomy in RC

EFL instructors and syllabus designers can probably incorporate further dependable and fascinating strategies in EFL reading comprehension courses as they can be provided with an index specifying the learners' autonomy in EFL reading comprehension skills. It seems that owing to lack of any measuring devices, the concept of EFL autonomy in Reading Comprehension

(RC) has not been appropriately operationally elucidated, permitting the researchers to further assess this significant construct in EFL learners. Therefore, designing an effective instrument (i.e., questionnaire) to examine the autonomy in RC could contribute to infilling the current lacuna; it also might provide a solid foundation for further studies to construct a comparable questionnaire in other various EFL milieus. Given Iranian EFL community, the development of such a significant questionnaire could play a significant role in probing autonomy in RC.

To qualitatively examine the autonomy in RC, one may conduct a series of interviews with a panel of EFL students at various English proficiencies; some further interviews with teachers and practitioners both in English Language Teaching (ELT) profession and in applied linguistics could afford invaluable qualitative information as well.

Meanwhile, constructing a questionnaire could supplement the quantitative data with further quantitative information giving a comprehensive understanding of the nature of EFL students' autonomy in RC. Therefore, efforts are made to develop this deficiency by bringing incredible insights into the main components of EFL autonomy in RC and its relevant aspects; the study also seeks to validate the gathered quantitative information empirically. The findings may encourage the EFL instructors and practitioners to reflect on autonomy in RC as they evaluate the performance of the students. The results might be promising in motivating the EFL teachers and experts to advance the students' autonomy in RC by providing them with practical and various RC tasks and strategies.

The relevant literature documents no investigation probing learners' autonomy in RC in a particular EFL teaching community. This analysis seeks to design a learner autonomy questionnaire in EFL RC contextualized with various items representing the specific themes in EFL autonomy in RC. Here,

both validity and reliability of the questionnaire were determined based on Iranian EFL students' perceptions; hence, the proposed questionnaire may overlook the cross-cultural differences worldwide; as a pilot study, however, this investigation might pave the way for advancing an autonomy in RC questionnaire, supportive for Iranian EFL students, that might be validated by further Iranian EFL learners practicing in several EFL contexts. It may also receive scientific attention from the interdisciplinary field of psycholinguistics.

2. Review of Literature

Anderson, Hiebert, Scott, and Wilkinson (1985) claim that reading is a process of constructing the meaning which exists in the written texts; it is an extremely complex skill that needs the coordination of a series of interdependent sources of information. Reading comprehension is a complicated task. It mostly relies on the reader's schema, knowledge of the language and syntactic structure, and the redundancy of the text (Lipson & Wixson, 1991). Hayati (2006) believes that reading consists of comprehension, that is, when readers do not understand a passage, they are not reading indeed. Moreover, the difficulties of reading comprehension escalate when students go higher levels as they are supposed to understand more complicated texts, needing well-developed reasoning skills and an ability to implement proper background knowledge in various contexts (Gardill & Jitendra, 1999). Students also experience difficulty with text structures and text types generally seen as text genres (Snyder & Caccamise, 2005). Students with poor reading comprehension rarely utilize comprehension techniques, and when they attempt to use some, they often make use of those techniques which are inappropriate. Therefore, there is a need for the direct intervention of reading techniques for students with specific reading comprehension difficulties.

At its high level of development, reading is considered as an intense process, through which some significant factors such as strategies, skills, schemata, and abilities interact, resulting in adequate understanding. Moreover, it is believed that the autonomy employed by the learner could develop the reading into a more advanced level. In other words, as the students are autonomous and utilize effective strategies, a higher level of comprehension may happen. Some researchers (Dafei, 2007; Little, 2007; Thanasolus, 2000) maintain that to develop autonomy in reading comprehension, the students need to broaden and monitor their reading strategies initially guided by the teachers. In reading comprehension, students need to be self-confident in their ability to deal with texts and manage their comprehension.

The concept of learning autonomy was developed by Little (2004) by integrating learning autonomy to learning theory. Little (2004) argues that "our psychological autonomy derives from social interdependence" (p. 20), similar to other higher psychological functions of thinking and speaking. He pinpoints that social interactions with teachers and peers are crucial for the accomplishment of learner autonomy. Besides, Little believes that learner autonomy is not only an acceptable supplementary skill in self-management, but also an indispensable part of all meaningful learning as learners become progressively capable of accomplishing tasks and social functions independently (Little, 2012).

Little (2012) investigates the factors that contribute to the formation of autonomy in learning the language; according to him, an autonomous individual is independent, capable of making and carrying out the options that potentially control his/her performances. In his words, this skill relies on one's *ability* and *willingness*, which are considered as two major elements. Put it simply, on one hand, one might feel free in making independent choices

but prefer no willingness to function as such. On the other hand, an individual might desire (willingness) to choose but not be able to make independent choices. These two components, namely, ability and willingness are further classified into their relevant subcomponents. Ability relies not only on the knowledge one has on the options from which he/she has to choose, but also the skills essential for performing the choices sound remarkably relevant. Confidence and motivation are the key factors in encouraging the learner to be anxious for feeling responsibility required in carrying out his/her choices. The successful autonomous learning could be realized, providing that these four essential factors be presented in combination.

Obviously, keys to learner autonomy are to make a decision and to make choices. Holec (1981) mentions that a successful autonomous learner could monitor and make a decision on learning objectives, content specification, language acquisition, and evaluation of what has been learned. Oxford (2008) also argues that an autonomous learner decides on the acquisition of the language, the objective, the relevant content, topics, and the specific activities required for the acquisition of that language; she further maintains that an autonomous learner could also make decisions on the amount and nature of directions as well as the specific strategies essential in the learning process; according to Oxford, the autonomous learners not only could determine the formality or informality of the learning but also, they can monitor the kind, amount, and form of assessment; they even may decide on the time and location (e.g., on a smartphone or a computer at home, or in a self-access center, or somewhere else).

In this study, learner autonomy in EFL reading comprehension includes the following components: cognitive, metacognitive, action-oriented, affective, and social components. These factors are closely connected with

each other in learning and teaching procedures. Making a decision on one's own reading comprehension incorporates cognitive components (e.g., being familiar with alternatives), metacognitive factors (evaluating each choice), affective components (taking account one's own interests and motivation); performing reading activities is associated with a cognitive, a metacognitive, an affective as well as an action-oriented aspect (the capability of achieving to a reading task, to trigger and reflect on the background knowledge demanded by the task, to consider one's own feelings).

2.1 Previous Studies

The relevant literature documents that a limited body of research (Suphandee, Sripai, Woonprasert, Ardwichai, & Suphandee, 2018; Tassinari, 2012; Zhang & Li, 2004) has been done to design a learner autonomy questionnaire and none is done to develop a learner autonomy questionnaire in EFL reading comprehension.

Zhang and Li (2004) developed a learner autonomy questionnaire for Chinese and West European students. This measurement device comprises two parts, including 21 items; eleven items rate the learner autonomy with Likert-type scales characterized with never to always options. The Likert scale statements are broad questions grounded on the learner autonomy assumptions in authentic language learning contexts. The other part includes ten forced-choice format questions which deeply examine the learners' perspectives on the principles of learner autonomy. It is argued that the questionnaire is qualified with a high degree of content validity determined by experts' attitudes. It is also characterized by an acceptable estimate internal reliability accounted for 0.7. According to Zhang and Li (2004), the estimated consistency for this measurement device was equaled to 0.80 based on Cronbach's Alpha formula. Furthermore, Zhang and Li (2004) reported that this questionnaire enjoyed high validity. Employing Cronbach's alpha

coefficient, the researchers claimed that the reliability of the learner autonomy questionnaire was determined to be 0.84.

Tassinari (2012) designed the dynamic model of learner autonomy; this instrument helps the learners to self-assess and evaluate their own learning competencies; it also persuades both students and advisors to emphasize on pertinent dimensions of the learning profession. The dynamic framework discusses the cognitive, metacognitive, action-oriented, and affective aspects of learner autonomy; it also describes the students' performances, perspectives, and competencies. It is dynamic since it permits the students to pay particular attention to the needs and purposes they pursue in their learning journey. Practitioners have authenticated the mode in various scientific communities and tested it by students, advisors, and teachers. The model allows the students to freely assess their competence based on the components included in the model; then, the learners' assessment is comprehensively analyzed in a coming session, where the students and the counselor could discuss on their attitude, emphasize on specific dimensions of the leaning procedure, and decide on more learning objectives.

Considering the above-mentioned studies, there has been no study examining autonomy in RC in an EFL instructional community, and further research is needed to shed light on its fundamental psychological mechanisms. Hence, the current analysis seeks to design an innovative learner autonomy questionnaire in reading comprehension included with items peculiar to EFL milieu. This study is unique since the results could contribute into the development of a questionnaire for assessing learner autonomy in RC among Iranian EFL students; this is significant because this study maintains that autonomy is a psychological concept contributive not only in encouraging EFL students to enhance their autonomy in EFL reading comprehension, but also in making the teachers and syllabus designers

confident of benefitting from this construct in teaching strategies and developing materials, respectively.

3. Methodology

3.1 Participants

The participants were selected through purposive sampling technique. Initially, the participants were 12 EFL teachers (5 holding BA degrees in English, 5 MA and 2 Ph.D. graduates/candidates of TEFL). The numbers of female and male instructors were 7 and 5, respectively. They had taught English at various language institutes and universities in Iran; they had roughly five years of teaching experiences on average. Table 1 illustrates the demographic profile of the EFL instructors participating in the initial stage of the study.

Table 1

EFL Teachers' Demographic Information

EFL Instructors'	Frequency
Age Range	23-45
Gender	Female
	Male
Degree	B.A.
	M.A.
	Ph.D.
Teaching Experiences	Less than 5 years
	5 years
	More than 5 years

The purposive sampling procedure was also employed to choose 14 EFL students to be interviewed. These participants were at an advanced proficiency level with the age range of 20-38 age range studying English in two language centers.

The initial questionnaire of learner autonomy in EFL reading comprehension was designed; then, 40 EFL students with resembling features to the target group were kindly asked to participate in the piloting procedure.

The researchers received 324 questionnaires completed by the EFL students in the final stage of the validation process. The initial examination revealed that 44 questionnaires (out of 324) were not adequately completed and, thereby, they were discarded. Hence, the researchers analyzed 280 questionnaires in the final validation procedure. Table 2 briefly provides the information of participants.

Table 2
Information about Participants

Phase 1	Participants
Structured and Semi-structured Interviews	12 EFL instructors 14 EFL learners
Piloting	40 EFL learners
Validating	(324 - 44) = 280 EFL learners

4. Data Collection

The researchers did a series of individual face-to-face interviews to investigate the participants' attitudes toward EFL autonomy in reading comprehension. Qualitative Interviewing was used in this study. This technique is grounded in conversation, and it encourages the researchers to raise questions and listen to interviews' responses (Rubin & Rubin, 1995). In this technique, the respondents are not merely knowledge receivers; instead, they are active in knowledge creation (Holstein & Gubrium, 1995). Moreover, the researchers held a semi-structured interview permitting the researchers to alter the entire interviewing procedure on a continuum ranging from highly structured to highly unstructured. The semi-structured interview enables the researcher to feel dominantly confident to raise the prespecified questions in a more flexible order, not inevitably in a fixed manner.

Moreover, the responses were not predetermined in the form of any response category. While being interviewed, the learners were permitted to respond and advance in their own manner in an informal context (Flicks,

1998). Upon the responses the interviews gave, every interview took 15 to 25 minutes. In this step of the research, the content analysis approach was utilized to explore the interview transcripts. The nonsignificant transcripts were excluded, and efforts were practiced to detect the relevant categories upon the participants' responses; then, the discovered patterns were divided into major themes. The researchers scrutinized the transcribed data one more time to verify the validity of the data; accordingly, again, the appropriate responses were marked ordered and classified upon the themes. The researcher utilized the self-reflection technique to appraise and illuminate the biases possibly practiced in the data classification procedure. The purposeful reduction of the transcribed interviews resulted in the emergence of meaningful patterns of information indicating the list of the main themes realized in the text. These significant patterns were rearticulated as simple concepts, namely, categories. Generally, these steps and procedures guided the researchers to introduce five vital components.

5. Procedure

As mentioned before, autonomy in reading comprehension (RC) has not been operationally well-articulated, making it challenging to assess this significant construct in EFL learners. This is mainly because there is not a consensus on what learner autonomy in EFL reading comprehension indeed includes. Hence, this study aimed to design a measurement device (i.e., questionnaire) upon a provisional model of learner autonomy in EFL reading comprehension and its dimensions. The standard procedures were followed to design a valid and reliable measurement device (Dornyei, 2003; cited in Akbari, Behzadpoor, & Dadvand, 2009); after that, the researchers reviewed the relevant literature to possibly find a model of learner autonomy in EFL reading comprehension as well as its components; however, it was found that such a model had not been presented in the related literature.

After that, the researchers did a series of interviews, both with 12 EFL teachers and 14 EFL learners learning English at various proficiency levels. The interviewees were initially informed about the goal of the research project before the conduction of interviews. Next, they were given a short text by Little (2007), introducing the concept of autonomy. They were then interviewed about their thoughts and attitudes toward autonomy in reading comprehension.

The primary function of questions raised in semi-structured interviews was to guide the interviewees' attention toward the general as well as the particular components of learner autonomy in EFL reading comprehension. Twelve EFL teachers were interviewed about five open-ended questions regarding the concept of autonomous reading, the extent to which they believed their students were autonomous readers, the extent to which they thought they boosted learner autonomy in their reading classes, any challenges they faced in assisting their students to become more autonomous in reading comprehension, and suggestions for a more efficient boost of learner autonomy in reading comprehension. Besides, fourteen students were interviewed about four open-ended questions regarding the concept of autonomous reading, whether they were autonomous readers, which methods, ways, or techniques they employ while reading, and whether the instructors in their English Institute provide them with opportunities to take control of their own reading. The interviews which lasted 40 minutes were audio-taped, transcribed, analyzed, coded, and categorized using a content analysis (CA) method. For the analysis of the interview transcripts in this phase, the CA method was applied which has been identified as the most justified method for descriptive studies as "it provides a rigorous structure for analyzing data", and it includes Thematic Analysis, Semantic Analysis and Latent Content Analysis" (Kairuz, Crump, & O'brein, 2007, p. 372).

The data reduction procedure was employed to foster comprehensible patterns to analyze the qualitative data generated through semi-structured interviews. In the present study, regarding our categorization, several recurring themes were found to be utilized in promoting learner autonomy questionnaire in EFL reading comprehension.

Having examined the existing literature and referred to the experts' opinions, we delineated the primary constructs along with their items. Five main themes emerged entitled as follows:

- **Cognitive:** "consciously employing effective strategies to improve reading comprehension",
- **Metacognitive:** "consciously monitoring the usage of reading strategies during practice",
- **Action-oriented:** "selecting efficient strategies to become a better reader, such as reading English newspapers, magazines, novels, etc.",
- **Affective:** "trying to deal with emotional factors that may block English reading studies, such as shyness, anxiety, stress, etc.", and
- **Social:** "trying to seize opportunities to participate in pair/group discussion and more".

The frequency of each theme was counted, and those themes which had low frequencies of one or two were deleted. The themes and the ideas extracted from the literature review and the theoretical model, improved and shaped the premise for the development of 30 items (4 of which were reverse-scored) for the EFL autonomy in RC questionnaire. The EFL learners were asked to show the degree to which each item is related to them on a Likert-scale of one to five (Appendix).

Next, a second expert opinion was needed on the arrangement of the proposed model and its item redundancy, clarity, and readability; therefore, three experts and six participants conceded to analytically look at the model as well as the generated items. The discard of some remaining redundant

items and minor changes in the wording of a few items further refined the questionnaire and developed a more trimmed model. The experts also rank ordered each item according to its degree of applicability to the element it pertained. Therefore, the instrument was prepared for the validation phase.

Thirty items were included in the model, six items for each theme in addition to two extra items for the first and the third theme, according to the frequency with which each item was chosen as applicable by the professionals. Next, based on the standard framework for questionnaire development (Brown, 2001; Dornyei, 2003), a 5-point Likert scale ranging from 'strongly disagree' to "strongly agree" was selected to examine EFL learners' autonomy in EFL reading comprehension. At last, two applied linguistic professors with language teacher education background were asked for proofreading and face validity assessment, which led to some minor changes in the wording of a few items.

Table 1
Reliability Statistics for Autonomy in RC Questionnaire

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.923	.931	30

5.1 Pilot Study

In this phase, 30 items, including main components in EFL autonomy in RC, were piloted on forty EFL learners, analogous to the target group. Moreover, the required time for the fulfillment of the questionnaire was determined at this phase. The participants were also required to give their comments about the items. This was done to make sure that participants would answer the items carefully. Based on the idea of Dornyei (2003), items were ordered in

this questionnaire since he believes items provide context for participants to answer them better.

Moreover, 4 of the 30 items in the questionnaire were in reverse order to make sure that participants would not answer the items carelessly. It took 25 to 40 minutes for the participants to complete the questionnaire and to provide their comments. The findings of the pilot study were given to SPSS 23 to measure the reliability of the instrument through Cronbach's Alpha whose result was .923.

5.2 Instrument Validation

A total of 324 questionnaires were responded by the EFL learners. However, forty-four of the completed questionnaires were expelled for being either carelessly completed or incomplete. Thus, 280 questionnaires were left for validation. The validation procedure continued by handing the questionnaire over among 280 EFL learners of different ages but similar proficiency levels (advanced).

5.3 Data Analysis

Mplus and SPSS 23 were used to analyze the participants' responses to the items of the questionnaire. Cronbach's Alpha was utilized to calculate the reliability of the instrument. Its results showed the reliability of .923. Both exploratory and confirmatory analyses were run to examine the instrument's construct validity, the results of which are presented and explained in the next section.

6. Results

Learner autonomy questionnaire in EFL reading comprehension was handed out and answered in two phases to calculate the internal consistency and factorial validity. Factor analysis was used to identify whether there was any latent correlation among a group of measured variables. It consisted of two major steps: Exploratory factor analysis (EFA) and Confirmatory factor

analysis (CFA). Based on what Pallant (2011) claims, EFA is employed to design a questionnaire that consists of a group of items and examines a specific topic. It is also utilized in research studies when there is not any previous hypothesis based on the factors of the measured variables. Thus, it is employed to distinguish the underlying constructs of the measured variables. On the other hand, CFA is employed to identify whether there is a fit between the measures and a hypothetical model of measurements, which is grounded in previous studies.

The data collected from the 280 questionnaires were given to Mplus and SPSS version 23 to calculate the internal consistency. Cronbach's Alpha was utilized to calculate the reliability index for the 30-item questionnaire, which was 0.92, a high-reliability index (Table 1).

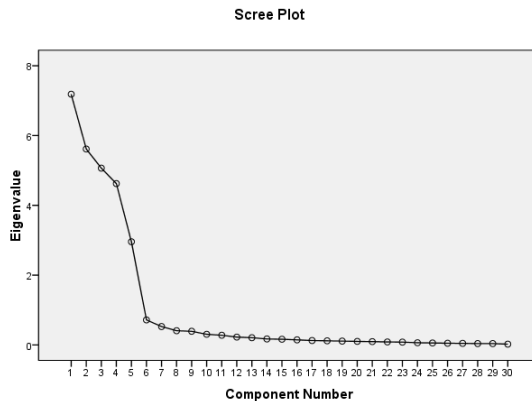


Fig. 1. Scree plot for the five extracted components

6.1 Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) was utilized to analyze the factorial structure of the questionnaire. Before conducting EFA analysis, Bartlett's Test of Sphericity and Kaiser–Meyer–Olkin (KMO) Measure of Sampling Adequacy (Pallant, 2016) were utilized to evaluate the factorability of the correlation matrix. For the correlation matrix to be factorable, Bartlett's test

must be significant, and KMO index should be above 0.60 (Pallant, 2016). The analysis of Bartlett's test and KMO measure for the current questionnaire showed that the former was significant at $p < 0.001$, and the latter was 0.82 which is above the 0.6 level. Therefore, the data is suitable for EFA.

Several Principal Axis Factoring (PAF) analyses were carried out to extract the initial factors whose quantity was determined according to prior theory, the evaluation of the scree plot (Fig. 1), and Parallel Analysis (PA). The plot reinforces the extraction of five factors. Moreover, PA analysis verified that the variance demonstrated by five factors was larger than the variance shown by random factors. These five factors established 84.81 percent of the variance in the data.

The Promax technique was then used to rotate the extracted factors. This rotation technique was selected since the factors were anticipated to be related (Karami, 2015). The rotated factor loadings are shown in Table 2. All factor loadings are above the minimum level of 0.30 (Pallant, 2016; Table 2). According to the pattern of factor loadings, the factors may be entitled as follows:

Factor 1 Metacognitive

Factor 2 Social

Factor 3 Action-oriented

Factor 4 Cognitive

Factor 5 Affective motivational (Table 4)

Table 2
The Rotated Factor Loadings

	Component				
	1	2	3	4	5
item1				.932	
item2					.684
item3		.982			
item4	.767				
item5	.943				
item6					.892
item7			-.972		
item8				.961	
item9	.961				
item10			.875		
item11				.961	
item12				.904	
item13			.934		
item14			.931		
item15		-.939			
item16		.980			
item17	.908				
item18	-.891				
item19	.948				
item20	-.969				
item21					.954
item22				.748	
item23		.956			
item24			.941		
item25		.968			
item26				.896	
item27					.886
item28			.882		
item29	.935				
item30		.957			

6.2 Confirmatory Factor Analysis

On the ultimate set of items, Confirmatory Factor Analysis (CFA) was utilized to examine whether the factorial structure spotted through EFA could be correlated. The Maximum Likelihood (ML) estimation technique was used to analyze data since it is robust against violations of non-normality _ a fundamental assumption of ML estimation (Muthén & Muthén, 1998–2010). The analysis was fed into the Mplus software, version 7.11.

The Mplus output provides four-model-fit indices helping to determine whether the model efficiently fits the data. These indices are as follows:

Root Mean Square Error of Approximation (RMSEA)

Comparative Fit Index (CFI)

Tucker–Lewis index (TLI)

Standardized Root Mean Square Residual (SRMR)

The RMSEA has to be lower than 0.06 so as for a model to have sufficient fit (Kline, 2015). On some occasions, the RMSEA index can have a 90% confidence interval. The higher limit of this interval has to be less than 0.08. Moreover, both CFI and TLI has to be more than 0.90. At last, the SRMR should not go higher than 0.08 (Brown, 2006).

The measurement of the latent factors was performed by fixing all factor variances at 1 to standardize the parameter estimates. Figure 2 demonstrates the acceptable nature of all parameter estimates and the absence of any out-of-bound estimates. The indicator variables all loaded significantly on the latent factors ($p = .000$), and the loadings were quite high, ranging from .53 to 1.00. Furthermore, the estimation of the model led to appropriate fit indices: RMSEA = 0.000, the 90% interval around RMSEA = 0.02 - 0.04, CFI = 0.90, TLI = 0.89, SRMR = 0.07. These goodness of fit indexes reflect the proper fit of the model.

The CFA model and the standardized parameter estimates are shown in Fig. 2. The scaling of the latent factors was done by fixing all factor variances at 1. This fixation standardized the parameter estimates. As displayed in Fig. 2, all parameter estimates are logically acceptable, and there are no out-of-bound estimates. To sum up, the results of both factor analyses revealed that the questionnaire was valid.

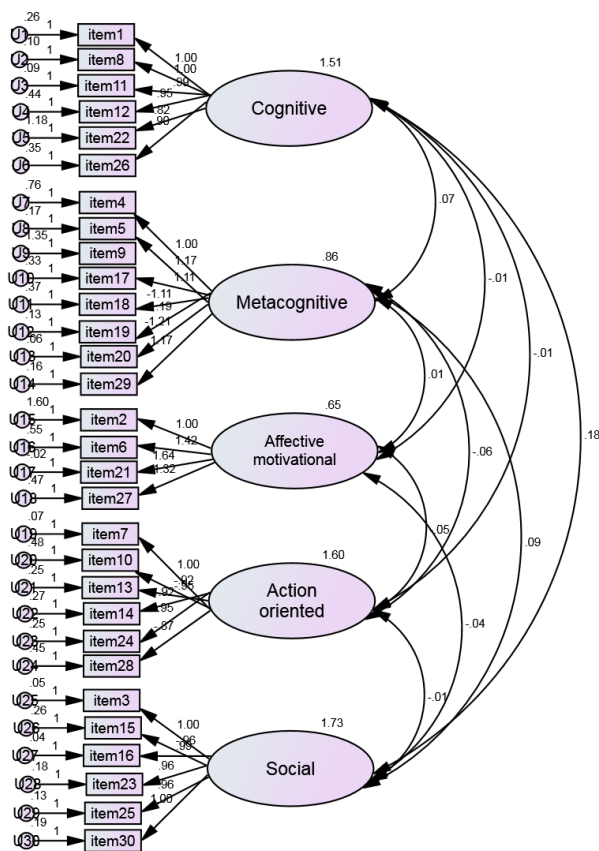


Fig. 2. The CFA model and the standardized parameter estimates

7. Discussion

In this study, the learner autonomy questionnaire in EFL reading comprehension, which is the only existing instrument to investigate the autonomy in RC construct in the EFL context, was developed and validated. Confirmatory factor analyses revealed a five-factor structure of the learner autonomy questionnaire in EFL reading comprehension in which cognitive, metacognitive, action-oriented, affective, and social were loaded on this questionnaire. The factors revealed sufficient internal consistency and were all strongly inter-related.

According to the findings of the exploratory analysis, learner autonomy in EFL reading comprehension could be assumed to have at least five distinctive, though-related factors, which is at the basis of the construct of learner autonomy in EFL reading comprehension. Moreover, the results of the confirmatory stage greatly confirmed that the developed model and its parameters adequately fit the data collected from the questionnaires. Therefore, it could be assumed as a valid instrument.

This developed model gave the necessary cornerstone to evaluate learner autonomy in reading comprehension in the EFL context. Having gained strong Mplus and SPSS verification, other researchers could generate more details on these five factors utilizing both the supportive literature and this study's results. The generated themes could be elaborated according to the mutual tensions of EFL situation. Practicing, receiving and sending information by using resources, analyzing and reasoning deductively, and generating structure for input and output (taking notes, summarizing, highlighting), which underline the cognitive factor, are necessary for autonomous reading. Regarding the metacognitive factor, centering one's reading by overviewing and relating with already perceived material, ordering and planning one's reading by setting goals and objectives, having a

purposeful reading, looking for practice chances, and assessing one's reading (self-monitoring and self-evaluating) also paves the way for autonomous reading. Dealing with feelings and motivating oneself, which underscore affective factors, lead to autonomous reading. Finally, cooperating in the social factor and decision-making in the action-oriented factor cause autonomous reading. Therefore, it is the teachers, syllabus designers, and administrators' duty to take various aspects of learner autonomy in EFL reading comprehension into consideration.

In respect to the first loaded factor which is being cognitive, it was mentioned by items such as "I think I have the ability to comprehend English texts well" and "When reading English texts, I establish practical objectives for myself in terms of my true English reading level". This factor was in line with the ideas of Gholami, Ahghar, and Ahghar (2012), who state that cognition is a set of continuous mental activities employed by autonomous readers to use their world knowledge and language to solve the provided reading tasks to comprehend better. Predicting, summarizing, translating, guessing meaning from context, and using grammatical rules are some instances of cognitive reading that foster learners' autonomous reading.

The second loaded factor on learner autonomy questionnaire in EFL reading comprehension is metacognitive which is involved in several items of questionnaire such as "In English reading courses, I prefer activities in which I can read on my own.", "I like trying new techniques while reading English texts", and "I am adept at adjusting my reading plans based on my progress". This factor was in agreement with the views of Kutluturk and Yumru (2017) in which they claim metacognition or metacognitive knowledge is knowledge of the mental processes which are included in various sorts of reading. It is proposed that metacognition comprises two major aspects: knowledge about cognition and self-directed thinking. Self-directed thinking is ruled by

evaluation, planning, and regulation activities (Glenberg, 2005). Metacognition includes active monitoring, logical regulation, and a balanced arrangement of cognitive processes to accomplish cognitive objectives. Metacognition is thoughtful, arranged, purposive, goal-directed, and future-oriented mental processing that can be utilized to achieve cognitive goals, and boosts learner autonomy in reading comprehension. Learners are believed to be competent enough to realize their own mental processes. This involves understanding which sorts of reading tasks lead to complexity, which procedures for remembering information are more suitable than others, and how to deal with various kinds of problems. In order for learners to employ metacognition to boost their autonomy in reading comprehension, they are required to keep track of their own tendencies and be willing to be introspective (Kutluturk & Yumru, 2017). Through a willingness to recognize conditional aspects such as when it is adequate to utilize metacognition, it is more likely that students will foster abilities to analyze, self-direct and self-regulate their reading comprehension.

The third factor loaded on learner autonomy questionnaire in EFL reading comprehension is being action-oriented which is in line with the ideas of Kachergis, Kielstra, Bokkers, Persad, and Molenaar (2018) who state that action-oriented reading involves 'planning', 'choosing materials and methods', 'completing tasks', and 'managing ones' own learning', all of which leads to learner autonomy in reading comprehension.

Regarding the fourth loaded factor on learner autonomy questionnaire in EFL reading comprehension which is being affective, it was mentioned by several items such as "I think I have the confidence to ignore difficult words while reading", and "I make an effort to overcome emotional issues that may hinder my English reading studies, such as shyness, anxiety, inhibition, so on". The final factor loaded is being social which was involved in the

questionnaire through several items such as "I think collaboration with my classmates helps to improve my level of reading comprehension", and "I often study together with other people, for example, practicing with a language partner, or practicing and reviewing materials with classmates". These two factors are introduced under one single term as *socio-affective* by Lee (2012). That is, learning through interactions with others, such as working with peers or seeking teacher's assistance. Being socio-affective is associated with social-mediating activity and transacting with others. Autonomous reading comprehension is significantly associated with collaboration, appeal for elucidation and explanation from teachers or peers, recognizing one's mood and stress level, talking about feelings, rewarding oneself for good performance, and utilizing deep breathing or positive self-talk (Magno, 2010).

The results of this study reveal that learner autonomy in reading comprehension has a decisive role in teaching and learning in an EFL context. Instructors, administrators, and syllabus designers should consider this construct while developing materials and selecting the sorts of activities in their training programs to encourage students and to quench their needs.

8. Pedagogical Implications

Sivasubramaniam (2011) maintains that autonomy, which was so far subject to critique for its focus on the individual learner, is now advocated by the notions of social constructivism that underlines active learning. Put differently, autonomy does not refer to learners' isolated learning. Instead, they socially develop knowledge through active involvement in language learning. Therefore, the implementation of learner autonomy could foster higher levels of reading comprehension in Iranian EFL learners. In other words, better comprehension can take place when learners act autonomously through social interaction and collaboration. The developed questionnaire in

this study for measuring autonomy in RC would help teachers and curriculum designers in EFL to have access to their student's autonomy index in EFL reading comprehension; thus they can design more riveting, appealing, and reliable strategies in their teaching courses.

If learner autonomy in reading comprehension is revealed to significantly improve students' EFL reading comprehension, there would be new perceptions to motivate educational professionals, syllabus designers, and teachers to boost students' autonomy in reading comprehension, which could help improve their autonomy in reading comprehension. Hence, they could use the five factors (cognitive, metacognitive, action-oriented, affective, and social) to help out those students at danger of dropping out their reading courses.

Besides, some autonomous reading comprehension establishing activities as workshops are recommended as interventions to foster learner autonomy in reading comprehension. These involve tasks that overtly instruct students to have autonomy in reading comprehension, assist them in thinking of complexity, and making mistakes as necessary signs of progress. Moreover, it is suggested to integrate various reading activities to assist students in making their objectives clear, foreseeing and knowing how to cope with likely reading tasks and foster their autonomy in reading comprehension beforehand.

These workshops could involve several activities like several reading passages on various topics and instructing several individual lessons to students, such as getting acquainted with learner autonomy in reading comprehension. In EFL reading comprehension, students must comprehend the process of autonomy in reading comprehension. It is also essential to distinguish how this construct could help them achieve an acceptable level of autonomy in reading comprehension.

Due to the importance of designing a questionnaire to explore learner autonomy in EFL reading comprehension, it is recommended that the designed questionnaire is likely to give a numerical measure of the learner autonomy construct in EFL reading comprehension and further clarify the amount of its various themes namely cognitive, metacognitive, action-oriented, affective, and social. It would be beneficial to know which parts mostly require the intervention and develop some techniques accordingly.

Therefore, despite the significant role of learner autonomy in reading comprehension, it has not been efficiently studied, especially in the EFL context. Thus, understanding the role of learner autonomy in EFL reading comprehension offers new insights for higher education administrators while taking students' autonomy in EFL reading comprehension into consideration. Moreover, this construct can be nurtured and instructed. For example, collaborative or cooperative learning could help students learn from each other, boost their levels of autonomy in reading comprehension, and improve their performance.

Regarding the significance of psychological factors in learning the second language, Iranian teacher educators in general and EFL learners and EFL teachers in particular can benefit from designing a learner autonomy questionnaire in EFL reading comprehension. If learner autonomy in EFL reading comprehension could be realized as a contributory factor, consideration of which might play an essential role in learning EFL which in turn can assist teachers in offering some techniques to boost the quality of EFL education.

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Appendix

Autonomy in RC Questionnaire

We would appreciate it if you could fill out the following questionnaire. Each statement is based on your experience. There is no right or wrong answer. All your answers will be confidential and will be utilized for research only. Your opinion is very significant for this research. Based on your experience, please check the most appropriate answer to each statement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.I think I can comprehend English texts well.					
2.I think I have the confidence to ignore difficult words while reading.					
3.I think collaboration with my classmates helps to improve my level of reading comprehension.					
4.In addition to the given assignments by the teacher, I have a clear plan to read extensively on my own.					
5.Outside of class, I make the most of numerous opportunities to read English texts.					
6.I like trying new techniques while reading English texts.					
7.It is difficult for me to put newly learned English reading techniques into practice.					
8.I can consciously apply effective strategies to enhance my reading comprehension.					
9.I can consciously monitor the usage of reading strategies					

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during practice.					
10.I select effective methods to become a better reader, such as reading English newspapers, magazines, novels, etc.					
11.I am conscious of whether or not my method of reading is practical.					
12.If I notice that my method of reading is inappropriate, I quickly find a more practical one.					
13.I am able to find problems in my method of reading.					
14.If I find problems in my method of reading, I am able to solve them.					
15.In English reading courses, I try activities in which I can read on my own.					
16.During the class, I try to find opportunities to participate in activities such as pair/group discussion, etc.					
17.When reading English texts, I manage achievable goals for myself based on my true English reading level.					
18.It is difficult for me to create a practical reading schedule for myself.					
19.I am good at adapting my reading plans based on my progress.					
20.I keep in line with my predetermined plan while completing a certain English learning task.					
21.I try to deal with emotional issues that may hinder my English reading studies, such as shyness, anxiety, inhibition, etc.					
22.I utilized available learning resources such as library, the internet, dictionaries, etc. to boost my English reading.					
23.I usually study with other					

people, e.g., practicing with a language partner, or practicing and reviewing materials with classmates.					
24.I can answer most of the reading comprehension questions without any problem.					
25.When I have difficulty answering a reading comprehension question, I get help from others.					
26.When I discover my mistakes in reading comprehension, I understand the underlying reason for making them.					
27.I know my strengths and weaknesses in my English reading.					
28.I choose books which suit me, neither too difficult nor too easy.					
29.I can assess my own reading progress.					
30.I exchange ideas with my friends on how to comprehend a reading text better.					