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Research Paper

The Development and Validation of Peer Support Questionnaire (PSQ)

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Abstract

eee aaa iity ff uuee tt s' lll iii nnssssss s hhlhlii r sssss ssyys nn mprrtnnt role in developing their academic achievement. The present study aimed at constructing an accurate, reliable, and valid instrument that could ss ssss tee FFL nnnnnnnnpeeeett oss ff peer support. The instrument includes different subscales, namely Informational Support, Emotional Support, Instrumental Support, Feedback, and Companionship Support. The Peer Support Questionnaire was administered to 212 Iranian undergraduate EFL students studying at two public universities in Iran. An exploratory and a confirmatory factor analysis were conducted, and the overall factor loading estimates indicated a quite satisfactory level of convergent validity for the developed Questionnaire. Both the degree of factor loadings and the construct validity test supported the convergent validity of peer support factors and their related items. The findings demonstrated that PSQ could be a valid and reliable instrument for measuring the concept of peer support in both academic and educational settings.

Keywords: EFL Students, Peer Support, Social Supportive Functions, Instrument Validation, Confirmatory and Exploratory Factor Analysis

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Until the late 1960s, educational pedagogy was dominated by old competitive systems of traditional paradigms (Hromek & Walsh, 2012). They further claimed that pedagogy has expanded its scope regarding collaborative learning and social and emotional development. It has been shown that cooperative learning can contribute to social development by increasing positive relationship for cooperation, developing social support systems as well as improving understanding of diversity among students (Johnsons, 1989; Pantiz, 1999, as cited in Laal & Ghodsi, 2012). Moreover, cooperative learning can lead to emotional development by enhancing self-esteem, positive attitudes, and the ability to cope with psychological challenges (Johnsons, 1989; Pantiz, 1999, as cited in Laal & Ghodsi, 2012). One primary significant social feature in academic settings is peer relationships (Brown & Larson, 2009). According to Maxwell (2000) a number of themes associated with cooperative learning, learning communities, and developmental education have emphasized peer relations among students (p.208). As we know, classrooms are social places, and students are affected by the presence of their peers (Patrick & Ryan, 2003). Therefore, to evaluate individuals' success in academic settings, we must attend to their relationships with other individuals especially their classmates, and ways that these interactions affect their academic performance (Patrick & Ryan, 2003). Similarly, it has been proved that the quality of students' relationships with their peers is vital for the development of academic achievement (Furrer, Skinner, & Pitzer, 2014).

Peer support has been a prevalent practice in education (Charlton & Jones 2002), and it has been used with students of different ages to address a number of problems such as isolation, academic support, and bullying in classrooms (Ellis, Marsh, & Craven, 2009). As it is stated by Cowie and Wallace (2000):

> Peer support is an umbrella term that describes a range of activities and systems within which the potential of people to be helpful to one another

can be fostered through appropriate training. These initiatives aim to build on the natural helping resources normally offered in friendship groups (cited in Houlston, Smith, & Jessel, 2009, p. 325).

According to Miyamoto and Sono (2012), peer support is a general notion, and its definitions, effects, and outcomes are diverse. "Although there is a well-developed body of work demonstrating the importance of support … in the development of educationally related outcomes, there is comparatively less information regarding the role of peer support in educational outcomes" (Furrer & Skinner, 2003, as cited in Estell & Perdue, 2013, p.327). Similarly, Stromei (2000) noted that inadequate peer support is one of the factors that contribute to insurmountable barriers that college students face (as cited in Harrington, 2011).

Multiple measures of social support have been developed and validated (Barrera, Sandler, & Ramsay, 1981; Harrington, 2011; Malecki, Demaray, & Elliott, 2000; Procidano & Heller, 1983) in which social support was categorized into different kinds of support including family support, teacher support, classmate support, and friend support. Nevertheless, there has not been a comprehensive scale of peer support that could specifically encompass different social support dimensions. Thus, more investigation is needed in respect of the peer support concept and its related outcomes in different academic settings. Taking into account the fact that there are no solid instruments for measuring the concept of peer support, in this study, we aim to develop and validate a comprehensive questionnaire of peer support.

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Literature Review

Social Support

Different definitions and measurement scales have been provided for the concept of social support (Heaney & Israel, 2008). In Cobb's (1976) view, social support is a different kind of information guiding the subject to grasp the idea that he is loved, cared for, valued, and esteemed, making him realize that "he belongs to a network of communication and mutual obligation" (p.300).

According to House (1981, as cited in Heaney & Israel, 2008), social support can fall into four major categories as follows:

1. Emotional support which includes the provision of empathy, love, trust, and caring,
2. Instrumental support involving those tangible aids and services which could directly assist a person in need,
3. Informational support can provide advice, information, and suggestions, for a person to deal with problems, and
4. Appraisal support comprising useful information for self-evaluation purposes (p.190).

In another category, Fiore, Coppel, Becker, and Cox (1986) have stated nine components of social support that have commonly been cited in empirical studies. The nine categories of support are *cognitive guidance*, *emotional support*, *socializing*, *tangible assistance*, *social reinforcement*, *physical comfort*, *opportunity to nurture*, the *reassurance of one's worth*, and *opportunity for caregiving* (Fiore, et al., 1986).

According to Tardy (1985), the solution to multiple interpretations of social support is to recognize the primary elements of that kind of support involved in defining the concept. These five dimensions are "the direction, disposition, evaluation/description, content, and network of support" (p.190).

In this model, direction refers to social support as both being given or received. With regards to the disposition aspect, two features of availability (the quantity, and quality of accessibility of support) and enactment (the actual utilization of support) have been proposed. Description/evaluation refers to whether that social support was simply described in the studies, or whether it is evaluated (Tardy, 1985). There are four kinds of content in the social support model: emotional, instrumental, informational, and appraisal, which are based on the categories of social content by House (1981). The network is the last dimension in Tardy's model which refers to the members or sources of social support (Tardy, 1985).

Similar to Tardy's model, Malecki, and Demaray (2002) define social support "as an individual's perceptions of general support or specific supportive behaviors (available or enacted upon) from people in their social network, which enhances their functioning and/or may buffer them from adverse outcomes" (p2). These supportive behaviors include the same kinds of support such as informational, instrumental, appraisal, and emotional (Malecki & Demaray, 2002). Figure 1 shows aspects of social support in Tardy's model (1985).

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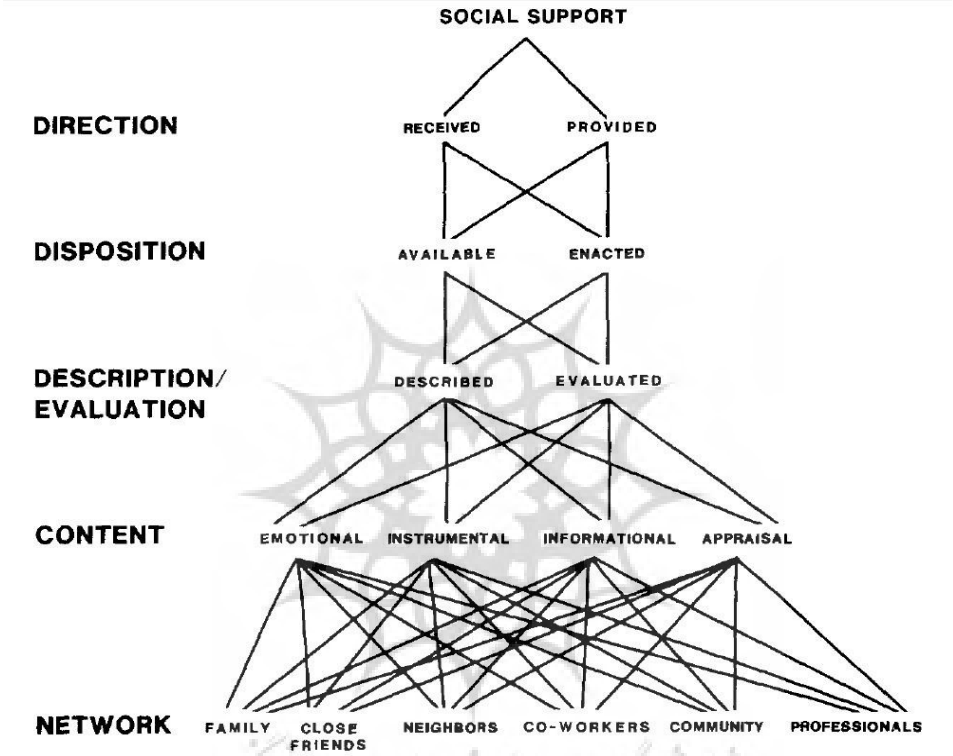

Figure 1.
Aspects of Social Support

While the most widely used conceptualizations of social support have focused on the four aforementioned types of social support, there are more additional types of social support such as social companionship that refers to spending one's time with others in enjoyable activities (White, 2009). "Social companionship can be considered as a multifunctional activity, i.e. 'doing things together' provides people simultaneously with emotional and

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instrumental support" (Suurmeijer, Van Sonderen, Krol, Doeglas, Van Den Heuvel, & Sanderman, 2005, p.192).

Moreover, Wills and Shinar (2000) list five important functional supports which are provided through social relationships as emotional support, instrumental support, informational support, companionship support, and validation support, in which validation support is the counterpart of appraisal support in House (1981) categorization (Wills & Shinar, 2000). In the following table, you can see the description of supportive functions, which are provided by Wills and Shinar (2000).

Table 1.
Description of Supportive Functions

Function	Other Terms	Examples	Theoretical Benefit
Emotional support	Confidant support, esteem support, reassurance of worth, attachment, intimacy	Allow discussion of feelings, expression of concerns/worries; indicate sympathy, approval, caring, acceptance of person	Alters threat appraisal of life events, enhances self-esteem, reduces anxiety/ depression, motivates coping
Instrumental support	Tangible support, practical support, behavioral assistance, material aid	Provide money, household goods, tools, transportation, child care, assistance with cooking, cleaning, shopping, repairs	Solves practical problems, allows increased time for rest and relaxation, other coping efforts
Informational support	Advice/guidance, appraisal support, cognitive guidance, problem solving	Provide information about resources, suggest alternative courses of action, provide advice about effectiveness	Increases amount of useful information available to individual, helps obtain needed services, leads to more effective coping

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Function	Other Terms	Examples	Theoretical Benefit
Companionship support	Belonging, socializing, integration	Provide partner for sports, outdoor activities, movies, theater, museums, restaurants, shopping, parties, trips	Produces positive affect, allows for release and recuperation from demands, provides positive distraction from rumination about problems
Validation	Feedback, social comparison	Provide consensus information re prevalence of problems, normativeness of individual's behavior/feelings, individual's relative status in population	Decreases perceived deviancy, allows acceptance of feelings, provides favorable comparisons

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Peer Support

Peer support is usually referred to as self-help or mutual help, which has been widely researched (Penney, 2018). According to Sage and Kindermann, 1999, "The study of group influences on individuals' behavior has enjoyed a long and rich history, predominantly in the fields of social and experimental psychology" (p.143). They also claim that developmental research has mostly focused on the effects of natural groups and on the issue of how characteristics of peer context would change individuals across time.

As is mentioned by Bursal (2017), when social experience and skills are increased, the amount of perceived peer support would be influenced. Moreover, research has revealed that enhancing positive relationships by programs like peer support impacts social and emotional learning (Hromek & Walsh, 2012). According to Kracen, Naughton, O'Reilly, Panoutsakopoulou,

and Rooney (2003), "the term 'peer supporter' refers to a person who assumes the role of a helping person with contemporaries. The most obvious role of peer supporters in college is meeting fellow students individually to listen, advise, refer and provide general support" (p. 4).

According to Cowie and Wallace (2000), there are two main types of peer support, namely emotional support and educational one. Emotional support comprises befriending, mediation/conflict resolution, counseling-based approaches, and educational support includes peer tutoring, peer education, and mentoring. They state that some of these methods such as befriending could be applicable to all ages; however, some others are only relevant to specific age groups such as peer education and peer mentoring which are specifically used for older age groups in colleges and universities due to the complexity of the methods, and the kinds of issues they address (Cowie & Wallace, 2000).

There have been a few studies on the subject of peer support, and its impact on educational, and psychological issues. Peer support is mostly a positive factor of social goal pursuit (Wentzel, 1994), motivation (Sage & Kindermann, 1999), psychological adjustment (Rodriguez, Mira, Myers, Morris, & Cardoza, 2003), academic achievement (Chen, 2005), students' engagement (Cappella, Kim, Neal, & Jackson, 2013), and academic self-efficacy (Altermatt, 2016). In higher education, peer support programs have different degrees of complexity from a basic befriending type to more complex peer counseling schemes (Kracen et al., 2003). These kinds of initiatives lead to students' satisfaction with institutional integration, and degree completion (Kracen et al., 2003). However, none of these studies, have investigated the underlying concept of peer support and its related dimensions.

There have been different perceived measures of social support (Haber, Cohen, Lucas, Baltes, 2007) with different dimensions of parents, teacher,

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classmate, and friend support. These instruments have dealt with the concept of peer support not adequately and effectively, which could not be regarded as a comprehensive evaluation of the concept. Thus, this study attempts to construct a thorough peer support questionnaire, with regard to the above-mentioned social supportive functions.

Method

Design of the Study

The aim of the researchers in the present study was to develop and validate a questionnaire that could reliably assess the EFL students' perceptions of peer support. The construction and validation of the mentioned scale were done in two phases, a small-scale qualitative study followed by a quantitative survey data analysis reflecting a mixed-methods design. In the first phase of the study, which was qualitative in nature, semi-structured interviews were conducted with 8 available university professors who expressed their consent to participate in this phase of the study. The interviews were intended to investigate the participants' perceptions of peer support, explore the components of this construct, and develop a theoretical framework for further statistical analysis. After identifying the major themes stated by the participants and carefully reviewing the relevant literature on peer support, in the second phase of the study, steps were taken to develop, pilot, and validate the peer support questionnaire. In so doing, *'an exploratory sequential mixed methods approach'* (Creswell, 2009) was adopted for constructing and validating the new questionnaire. This approach, which incorporates a qualitative phase followed by a quantitative phase is one of the most common methods recommended for creating and validating a new survey instrument.

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Participants and Sampling

The participants of the qualitative phase, 8 university instructors (including both associate and assistant professors in the field of Applied Linguistics) announced their willingness to participate in this study. Both male and female professors with different academic areas of interest (*SLA*, *Psycholinguistics*, and *Sociolinguistics*) took part in the interview sessions. These experts were chosen as interviewees to provide the researchers with a general profile of peer support construct in their educational contexts. Besides, five of the interviewees who agreed to review the items of the newly constructed questionnaire were further requested to review and evaluate the accuracy and appropriateness of items in the first draft. To gather the required data from the panel of experts for the interviewing phase, purposive sampling was employed.

The total participants of this research study in the quantitative phase comprised 212 Iranian B.A. students majoring in *English language Teaching*, *English Translation Studies*, and *English Language and Literature* at two higher education centers in Tehran (Allameh Tabataba'i and Farhangian Universities). The original participants of the study were 250. However, only 212 responses were collected, and the rest of the students did not reply. Out of 212 participants, 100 students belonged to Allameh Tabataba'i University, and 112 participants were students of Farhangian University. Both male and female EFL students participated in the present study. The age range of the participants was from 19 to 23, and they had different proficiency levels of English varying from high intermediate to advanced level determined based on their course syllabus and the textbooks employed by their teachers (i.e. *Communicate What You Mean*: A Concise Advanced Grammar by C. W. Pollock; *Brush Up Your English*: An Advanced Reading Course by M. Nowruzi Khiabani; *Paragraph Development*: An Integrated Guide for High

Intermediate to Advanced Learners of English by M. L. Arnaudet and M. E. Barrett; *The Practical Writer*: A Step-by-Step Approach to Master College-level Writing by E. P. Bailey and P. A. Powell, etc.), which were all designed for the upper-intermediate and advanced-level students of English. A convenience sampling procedure was utilized to collect data from the EFL students in the mentioned educational contexts during the fall semester, 2019.

Instruments

To collect the required data for the present research study, two major instruments were employed including a semi-structured interview and a newly developed PS questionnaire, which was constructed to explore Iranian EFL students' perceptions of peer support.

As for the qualitative phase of the study, the first step taken was to carefully review the related literature on peer support and its various components. Through the analysis of the relevant literature, the content needed for the construction of the questionnaire was specified and the ideas were extracted. Following this preliminary stage, the first research instrument of the present research, a semi-structured interview, was conducted with 8 university professors (four males and four females) with Ph.D. degrees in the field of applied linguistics. The participants who all agreed to take part in this phase of the study were selected from three public universities in Tehran based on purposive sampling. The interviews, whose questions had been developed by the researchers and were almost the same for all the respondents, were carried out to obtain the experts' perceptions of and beliefs about peer support and its importance in EFL classes. The outcome of the interview could provide us with important information to be used for the development of our research instrument. The interview sessions lasted between 15 to 20 minutes, during which the researchers tried to establish rapport with the participants in order

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to help elicit more information about the issue under study (See Appendix A for the items of the semi-structured interview). The interview questions were open-ended in nature so that the interviewees were able to freely express their views about peer support and its different aspects. It should also be mentioned that the validity of the interview questions, which were designed based on the relevant literature review, was checked by submitting them to two university professors who were experts in the field of Applied Linguistics. Upon receiving the specialized responses on the mentioned research instrument, the researchers proceeded with the modifications on the defective interview questions to make them more eliciting, comprehensible, and relevant to the research objectives. In order to obtain a perfect profile of peer support construct, the respondents' answers to the interview questions were duly recorded and transcribed to create the primary data and facilitate the identification of the themes to be included in the prospective questionnaire. Based on the relevant literature review and the semi-structured interview results, a fairly comprehensive content including the major themes and sub-themes was developed for the generation of the study questionnaire items.

The second instrument of the present study was constructed by the researchers based on the above-mentioned sources: i) the information obtained through the study of literature and ii) information elicited from experts. This newly developed PS questionnaire was intended to investigate the perceptions of university undergraduate students towards 'peer support'. A number of steps were taken in the quantitative phase of the study to develop and validate the constructed questionnaire with 30 items in the 5-point Likert-type format and with answer options ranging from completely disagree to completely agree.

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Peer Support Questionnaire Development Procedure

The process of questionnaire development was carried out in several stages. First, in order to generate the pool of questionnaire items, the researchers reviewed the literature on social support, and peer support concepts and their relevant research studies to design the items which were simple, short, and unambiguous. Moreover, to check the accuracy, comprehensibility, and representativeness of the questionnaire items, a panel of experts from among the interviewees who agreed to assist the researchers in this regard, (including 2 associate and 3 assistant professors in the relevant field) were requested to evaluate the items in the first draft of the questionnaire. They rated the items based on a 4 Likert-type scale from 1) not important to be included to 4) extremely important to be included in the questionnaire. Based on their opinions the items were reduced from 45 to 30.

The rating scale employed in this study was Likert-type, which is the most widely used format in questionnaire development. The Likert five-option rating scale was chosen for this study as follows: Strongly Disagree (SD), Tend to Disagree (D), No Idea (NI), Tend to Agree (A), Strongly Agree (SA).

The newly-constructed questionnaire was piloted with 45 Iranian university undergraduate students who were quite similar to the participants in the main phase of the study in terms of university major, social and linguistic background, nationality, and education level. Pilot testing can help researchers to check whether there are any errors or weaknesses within the instrument and enable them to make the required modifications before administering the final version. After the collection of data, Cronbach's Alpha Coefficient was calculated using SPSS V.23 to estimate the internal consistency of the questionnaire. The reliability coefficient for the PSQ was found to be 0.95, which is generally regarded as a high value and quite

acceptable when optimal reliability values are considered. The results of the reliability analysis of the PS Questionnaire are displayed in Table 2.

Table 2.
Reliability Statistics

Cronbach's Alpha	Number of Items
.948	30

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Peer Support Questionnaire Validation Procedure

The researchers employed the book, *Questionnaires in Second Language Research, Construction, Administration, and Processing,* by Zoltán Dörnyei (2003) to construct the questionnaire. In order to have acceptable face validity in the questionnaire an appropriate layout, font type, and margin were used.

To estimate the content validity of the Questionnaire the researchers requested five professionals in the field of Applied Linguistics to review the draft and judge the items. To reassure the content validity of the scale, some of the items were modified and reworded. These changes were carried out prior to the reliability estimate. To establish the construct validity of the PS Questionnaire two types of factor analysis, exploratory and confirmatory, were conducted on the questionnaire. The schematic view of the questionnaire development and validation procedure is presented in figure 2 below.

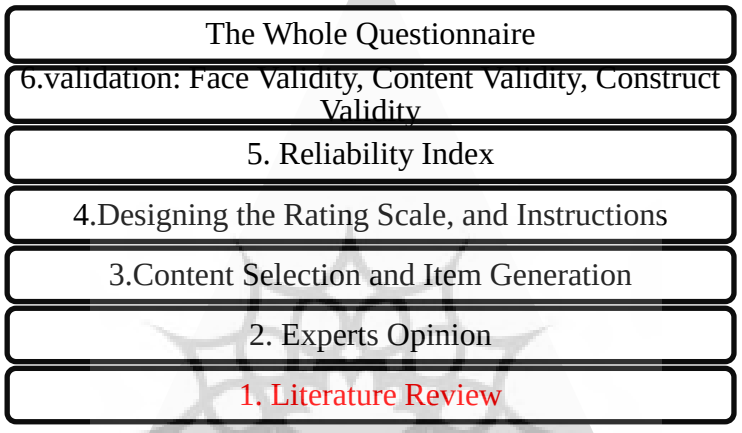

Figure 2.
Steps of Questionnaire Development and Validation

Result

Exploratory Factor Analysis (EFA)

To verify that our data were suitable for factor analysis, the Kaiser-Meyer-Olkin Measure of sampling adequacy (KMO) value and Bartlett's test were checked (Table 3). As displayed in Table 3, KMO value turned out to be .93, which is beyond .60, and Bartlett's test was significant ($p = .000$, $p < .05$). Therefore, the results of factor analysis were found to be appropriate for the existing data set.

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Table 3.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.935
Bartlett's Test of Sphericity	Approx. Chi-Square	3263.688
	Df	435
	Sig.	.000

After making sure about the factorability of the data through KMO, and Bartlett's Test of sphericity, exploratory factor analysis was run. To do so, the most commonly adopted approaches which are Principal Component Analysis (PCA) and Principal Axis Factoring (PAF) were used. In PAF approach more factors were extracted (22 items) than PCA approach (21 items); therefore, although the experienced variance in PAF (52.479%) was smaller than the one in PCA (61.26%), our preference was to adopt PAF approach for questionnaire administration since it has more items.

Principal Axis Factoring (PAF) Results

As demonstrated in Table 4 and the scree plot in Figure 3, in PAF approach, six factors above eigenvalue 1 were discovered. These six factors accounted for 52.48 of the total variance. After rotation, the first factor accounted for 12.41% of the variance, the second one accounted for 10.55%, the third accounted for 8.77%, the fourth 8.08%, the fifth 7.62%, and the sixth factor accounted for 5.04%.

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Table 4.

Principal Axis Factoring on Peer Support Questionnaire

Comp.	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.161	40.536	40.536	11.695	38.982	38.982	3.723	12.410	12.410
2	1.443	4.810	45.346	1.052	3.505	42.488	3.166	10.553	22.963
3	1.396	4.653	49.999	.980	3.266	45.754	2.631	8.771	31.733
4	1.161	3.870	53.869	.687	2.288	48.042	2.425	8.084	39.818
5	1.113	3.710	57.579	.678	2.260	50.302	2.286	7.619	47.436
6	1.105	3.684	61.263	.653	2.177	52.479	1.513	5.043	52.479
7	.959	3.197	64.460						
8	.922	3.075	67.534						
9	.823	2.743	70.277						
10	.766	2.554	72.831						
11	.675	2.249	75.080						
12	.647	2.157	77.237						
13	.621	2.069	79.306						
14	.573	1.910	81.217						
15	.538	1.795	83.011						
16	.500	1.667	84.678						
17	.490	1.632	86.310						
18	.454	1.513	87.823						
19	.417	1.389	89.211						
20	.392	1.307	90.519						
21	.371	1.238	91.757						
22	.348	1.160	92.917						
23	.342	1.140	94.057						
24	.321	1.070	95.128						
25	.289	.962	96.090						
26	.275	.918	97.008						
27	.248	.827	97.835						
28	.241	.802	98.637						
29	.220	.732	99.370						
30	.189	.630	100.000						

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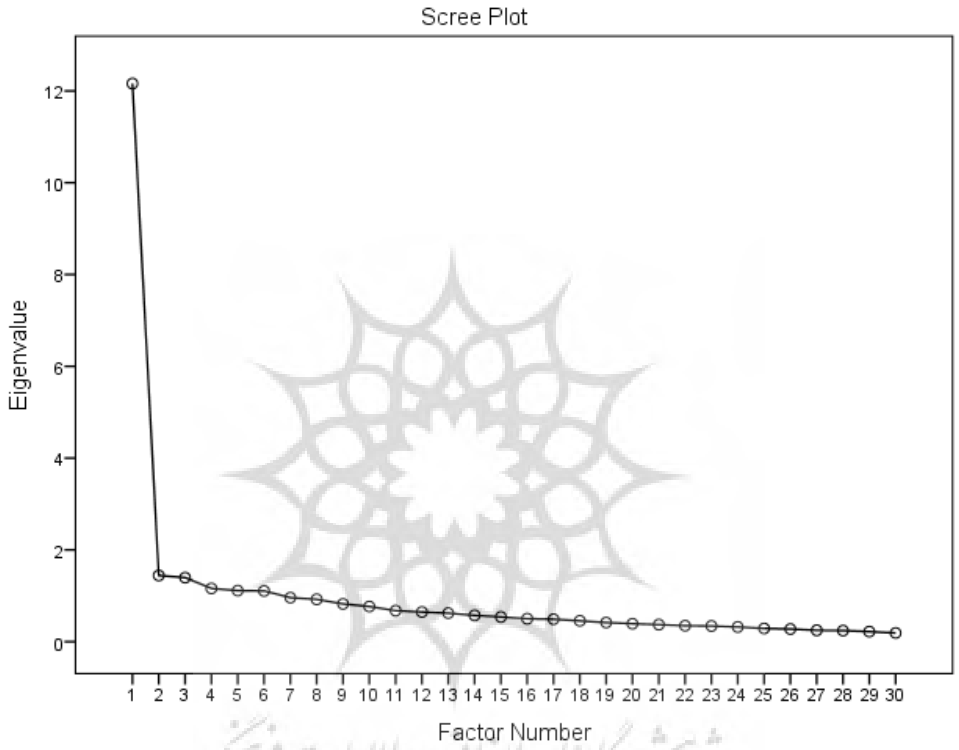

Figure 3.
Scree plot for Peer Support Questionnaire in PCA

The Communalities table (Table 5) shows the Initial commonalities before rotation. The initial commonalities reflect the association between each item and all other items (i.e., the squared multiple correlations between the item and all other items) before rotation. The table shows that all commonalities are high (> .30), and they are in an acceptable range. Communality values for this questionnaire ranged from 0.36 to 0.81.

Table 5.

Initial Communality Values in PAF

Item	**Initial**	**Extraction**
Item 1	.568	.615
Item 2	.636	.696
Item 3	.557	.444
Item 4	.587	.557
Item 5	.476	.454
Item 6	.557	.559
Item 7	.526	.588
Item 8	.686	.749
Item 9	.534	.541
Item 10	.569	.532
Item 11	.582	.545
Item 12	.630	.578
Item 13	.471	.361
Item 14	.551	.594
Item 15	.514	.523
Item 16	.450	.401
Item 17	.470	.815
Item 18	.446	.390
Item 19	.500	.492
Item 20	.643	.738
Item 21	.423	.453
Item 22	.568	.537
Item 23	.533	.511
Item 24	.497	.451
Item 25	.339	.298
Item 26	.486	.437
Item 27	.456	.411
Item 28	.520	.445
Item 29	.531	.527
Item 30	.504	.500

Extraction Method: Principal Axis Factoring.

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According to the results manifested in Table 6, after rotating the factors in PAF, six factors were loaded. After factor loadings were checked, items that did not load highly on any of the factors were removed from the questionnaire. Items loading above .40 were considered acceptable. In this phase, 22 items were successfully loaded on the six factors. As displayed in Table 4, the six items that have their highest loading from factor 1 are listed from highest loading (*item 29*) to lowest (*item 24*), in factor 2 five items (highest: *item 2*, lowest: *item 3*), in factor 3 three items (highest: *item 14*, lowest: *item 13*), in factor 4 four items (highest: *item 8*, lowest: *item 11*), and finally in factor 5 (highest: *item 20*, lowest: *item 19*).

Table 6.

Rotated factor matrix[a] in PAF

Item	Factor					
	1	2	3	4	5	6
item1		**.685**			.267	
item2		**.726**			.291	
item3		**.401**	.318	.254		
item4	.351	**.529**				
item5	.279	**.480**				
item6	.350	.325		**.481**	.259	
item7		.264		**.661**		
item8	.434			**.672**		
item9	.439	.446	.367			
item10	.439	.406	.332			
item11	.393		.269	**.477**		
item12	.529	.282	.359			
item13			**.394**			.276
item14	.314		**.684**			
item15			**.548**	.285	.259	

Item	Factor 1	Item	Factor 1	Item	Factor 1	Item
item16			.290		.254	.364
item17						.850
item18			.466			
item19			.343	.362	**.411**	
item20	.289	.330	.275		**.674**	
item21					**.581**	
item22		.312	.359		**.416**	
item23	.336	.262			.485	.264
item24	**.461**				.273	.288
item25		.319		.286		
item26	**.510**		.257			
item27	**.510**					
item28	**.490**		.281		.263	
item29	**.632**					
item30	**.553**					

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 12 iterations.

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Principal Component Analysis (PCA) Results

A factor analysis through Varimax rotation was conducted to the underlying construct of the Peer Support Questionnaire consisting of 22 items (Table 7). As it is evident from Table 7, the SPSS extracted 5 factors, with Eigenvalue of more than 1, explaining 63.21% of variance: F1: Informational Support (5 items; items 1, 2, 3, 4, 5), F2: Emotional Support (4 items; items 6, 7, 8, 11), F3: Instrumental Support (3 items; items 13, 14, 15), F4: Validation/Feedback (4 items, items 19, 20, 21, 22), and F5: Companionship Support (6 items, items 24, 26, 27, 28, 29, 30). Five-point Likert scales were used for each Item, ranging from 1 (I strongly disagree) to 5 (I strongly agree).

Table 7.

Principal component analysis on Peer Support Questionnaire (n = 30)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.161	40.536	40.536	12.161	40.536	40.536	4.123	13.743	13.743
2	1.443	4.810	45.346	1.443	4.810	45.346	3.800	12.667	26.410
3	1.396	4.653	49.999	1.396	4.653	49.999	3.135	10.448	36.858
4	1.161	3.870	53.869	1.161	3.870	53.869	2.783	9.276	46.135
5	1.113	3.710	57.579	1.113	3.710	57.579	2.630	8.768	54.903
6	1.105	3.684	61.263	1.105	3.684	61.263	1.908	6.360	**61.263**
7	.959	3.197	64.460						
8	.922	3.075	67.534						
9	.823	2.743	70.277						
10	.766	2.554	72.831						
11	.675	2.249	75.080						
12	.647	2.157	77.237						
13	.621	2.069	79.306						
14	.573	1.910	81.217						
15	.538	1.795	83.011						
16	.500	1.667	84.678						
17	.490	1.632	86.310						
18	.454	1.513	87.823						
19	.417	1.389	89.211						
20	.392	1.307	90.519						
21	.371	1.238	91.757						

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Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
22	.348	1.160	92.917						
23	.342	1.140	94.057						
24	.321	1.070	95.128						
25	.289	.962	96.090						
26	.275	.918	97.008						
27	.248	.827	97.835						
28	.241	.802	98.637						
29	.220	.732	99.370						
30	.189	.630	100.000						

Extraction Method: Principal Component Analysis.

Table 8 contains the initial commonalities before rotation. As mentioned before, the initial commonalities reflect the association between each item and the rest of the items (i.e., the squared multiple correlations between the item and all other items) before rotation. As it is observable from Table 6, all commonalities are high (> .30), and, therefore, quite acceptable. The communality values for the developed questionnaire ranged from 0.50 to 0.77.

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Table 8.

Initial Communality Values in PCA

	Initial	Extraction
item1	1.000	.691
item2	1.000	.729
item3	1.000	.507
item4	1.000	.607
item5	1.000	.525
item6	1.000	.639
item7	1.000	.723
item8	1.000	.767
item9	1.000	.632
item10	1.000	.584
item11	1.000	.609
item12	1.000	.622
item13	1.000	.505
item14	1.000	.653
item15	1.000	.618
item16	1.000	.511
item17	1.000	.757
item18	1.000	.511
item19	1.000	.600
item20	1.000	.735
item21	1.000	.648
item22	1.000	.587
item23	1.000	.647
item24	1.000	.610
item25	1.000	.543
item26	1.000	.540
item27	1.000	.518
item28	1.000	.579
item29	1.000	.628
item30	1.000	.555

Extraction Method: Principal Component Analysis.

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As displayed in Table 9, six factors were loaded after rotating the factors in PCA. After factor loadings were checked, items that did not load highly on any of the factors were totally eliminated from the constructed questionnaire. Items loading above .40 were considered acceptable. In this phase, again 22 items were acceptably loaded on the six factors. According to the results shown in Table 9, the six items that have their highest loading from factor 1 are listed from highest loading (*item 29*) to lowest (*item 24*), in factor 2 five items (highest: *item 2*, lowest: *item 3*), in factor 3 three items (highest: *item 14*, lowest: *item 13*), in factor 4 four items (highest: *item 8*, lowest: *item 11*), and finally in factor 5 (highest: *item 20*, lowest: *item 19*).

Table 9.

Rotated Factor Matrix[a] in PCA

Item	Component					
	1	**2**	**3**	**4**	**5**	**6**
item1		**.745**			.280	
item2		**.743**			.310	
item3		**.484**	.364	.252		
item4	.317	**.601**				
item5		**.578**				
item6	.348	.336		**.550**	.285	
item7				**.767**		
item8	.438			**.684**		
item9	.471	.547	.328			
item10	.462	.495	.250			
item11	.394		.273	**.543**		
item12	.550	.340	.354			
item13		.251	**.503**			.359
item14	.381		**.689**			
item15			**.646**	.290	.263	
item16			.415		.290	.416
item17			.431			.742
item18			.610			

Item	Component					
	1	**2**	**3**	**4**	**5**	**6**
item19			.384	.420	**.471**	
item20	.296	.366			**.663**	
item21					**.745**	
item22		.324	.402	.254	**.448**	
item23	.299				.566	.412
item24	.472				.261	.508
item25		.367		.402		.469
item26	**.612**		.266			
item27	**.620**					
item28	**.595**		.276		.309	
item29	**.682**	.252				.268
item30	**.602**					

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 12 iterations.

As the Scree plot in Figure 4 shows, there is quite a clear break between the first and second components. Furthermore, the Scree plot indicates that there is another little break after the fifth component. Therefore, it is recommended to retain (extracting) only five components.

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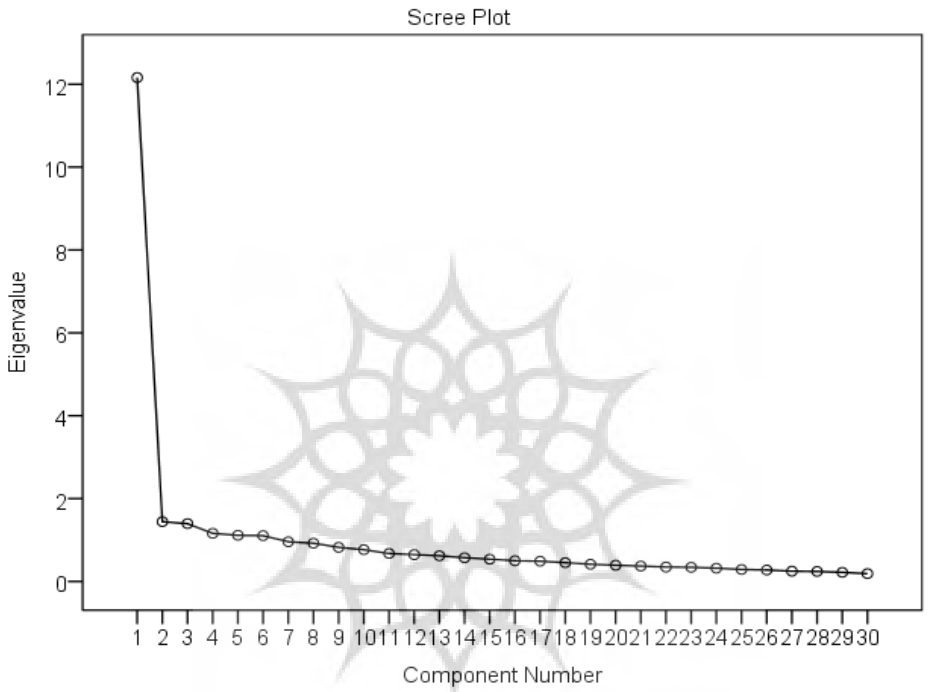

Figure 4.
Scree Plot for Peer Support Questionnaire in PCA

After rotating loadings of each of the items on the five components, the item loadings on the five factors with 6 items loading above .3 on Component 1, 5 items loading on Component 2, 4 items loading on Component 3, 4 items loading on Component 4, and 3 items loading on Component 5 were found (Table 9).

The obtained results of the exploratory factor analysis as well as their pertinent reliability indices are shown in table 10. According to the results, not only those factors but also their developed items were confirmed. This could

indicate that Peer Support Questionnaire is quite a valid and reliable tool for data gathering purposes.

As displayed in this table the five gained factors include: F1: Informational Support (5 items; items 1, 2, 3, 4, 5): F2: Emotional Support (4 items; items 6, 7, 8, 11), F3: Instrumental Support (3 items; items 13, 14, 15), F4: Validation/Feedback (4 items, items 19, 20, 21, 22), and F5: Companionship Support (6 items, items 24, 26, 27, 28, 29, 30), and the estimates of the reliability using Cronbach's Alpha Coefficient suggest the following values: F1: Informational Support (α = 0.844): F2: Emotional Support (α = 0.840), F3: Instrumental Support (α = 0.724), F4: Validation/Feedback (α = 0.806), and F5: Companionship Support (α = 0.820). The revised version of PSQ is provided in appendix B.

Table 10.
Five Factors of Peer Support Questionnaire with related reliability indices

Factor	**No. of Items**	**Reliability Method**	**Reliability Value**
1) Informational Support (items 1, 2, 3, 4, & 5)	5	Cronbach's Alpha	0.844
2) Emotional Support (items 6, 7, 8, & 11)	4	Cronbach's Alpha	0.840
3) Instrumental Support (items 13, 14, &15)	3	Cronbach's Alpha	0.724
4) Validation/Feedback (items 19, 20, 21, & 22)	4	Cronbach's Alpha	0.806
5) Companionship Support (items 24, 26, 27, 28, 29, & 30)	6	Cronbach's Alpha	0.820
Whole Questionnaire	22	Cronbach's Alpha	0.935

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Confirmatory Factor Analysis with AMOS (Measurement Model)

In the next phase, confirmatory factor analysis was run to confirm the five main factors obtained from exploratory factor analysis.

In the present study AMOS (Analysis of Moment Structure) software was used for performing SEM. To examine the factors underlying peer support together with checking item quality, the data were analyzed using CFA-AMOS 18. Figure 5 displays the initial measurement model for the peer support questionnaire.

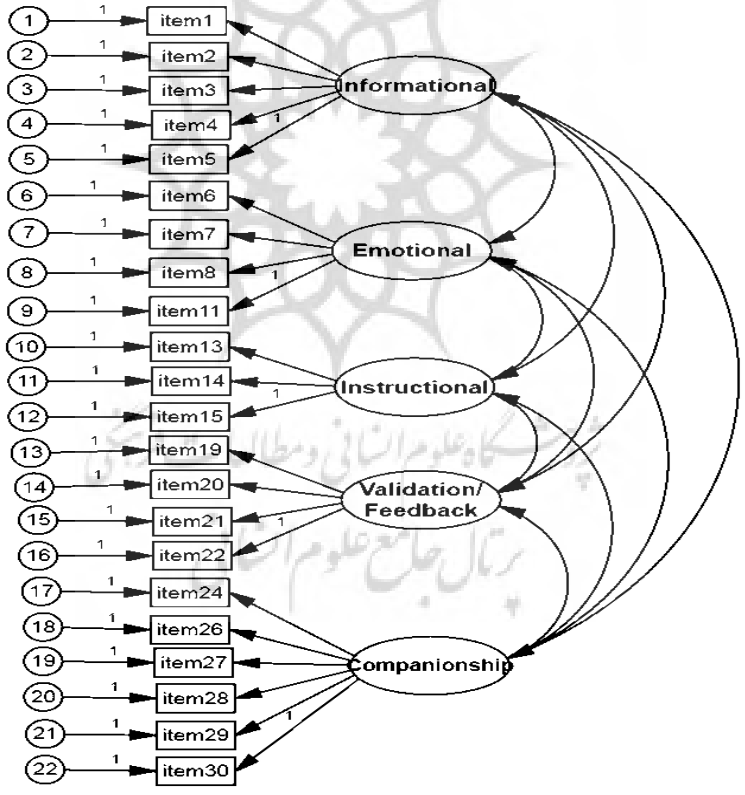

Figure 5.

Initial Peer Support Model (Model 1) with standardized estimates

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Inspecting the initial normed chi-square (CMIN/DF), CFI, GFL, and RMEAS (Table 5) showed a rather fit structured model; hence, few modifications (suggestions) were observed to make the model fall within the acceptable range of 1 and 3.

The potential co-variances with higher Modification Indices were linked with double arrows. Thus, a modified model (Model 2) was obtained. The modified measurement model of the peer support questionnaire is presented in Figure 6 with standardized estimates.

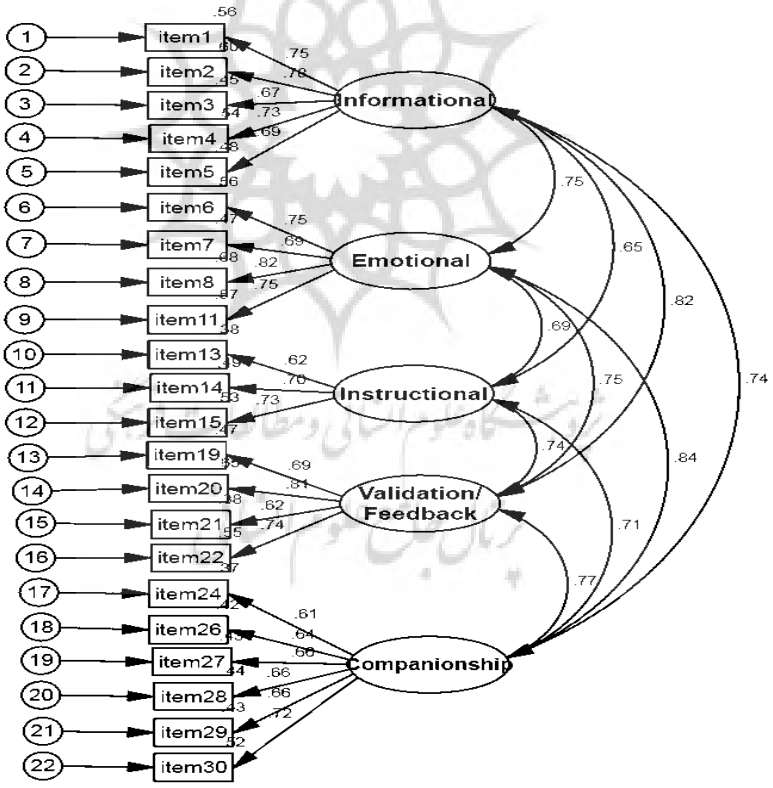

Figure 6.

Modified Peer Support Model (Model 2) with standardized estimates

The soundness of the factor structure for the Modified Peer Support Model (Model 2) was checked using confirmatory factor analysis comprising the five factors. The model fit analysis summary is provided in Table 11. As summarized in Table 11, The CFA measurement model indicated an acceptable overall model fit: DF = 1.62, GFI = 0.89, CFI = 0.94 and RMSEA = .055.

Table 11.
Model Fit Analysis Summary

Scale	CMIN/DF (1 ≥ , ≤ 3)	GFI (≥ .90)	CFI (≥ .90)	RMSEA (≤ .06)
QPS	1.62	.89	.94	.055

In summary, the obtained results showed the convergent validity for the peer support construct. Both the degree of factor loadings as well as its statistical significance and the construct reliability test supported the convergent validity of peer support factors and their related items.

Discussion

The main purpose of the present study was to theoretically construct and validate an instrument, the PSQ, which can be applied in diverse educational and cultural settings to measure EFL students' perceptions of peer support. The items of the questionnaire were generated after a careful review of the related literature and interviews with experts in the field. A 5-point Likert scale was employed for the arrangement of items ranging from 1 (strongly disagree) to 5 (strongly agree). To the best of the researchers' knowledge, this study may be considered as an initial attempt to assess the participants' perceptions towards peer support. The results of the statistical analysis

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confirmed 5 factors of social supporting functions for peer support and its related items. Peer support is believed to be extremely under-researched in comparison to other types of social support in general and its relationship with different psychological constructs in particular. Despite the important role of peer support in different areas of education, there was no validated instrument for the assessment of this construct. This study acknowledges adequate reliability and validity of the newly developed PSQ, which makes it a quite reliable and valid instrument for measuring perceptions towards peer support. Both exploratory factor analysis and confirmatory factor analysis supported the convergent validity of peer support factors and their related items. Moreover, the questionnaire had good internal consistency.

As is acknowledged by previous studies the five main social supportive functions which are informational, emotional, instrumental, validation, and companionship have been confirmed in this study for peer support. Thus, in a cooperative learning environment, peer support can provide these functions for learners (White, 2009).

> Such an environment encourages student interaction and facilitates students' tendency to (1) give and receive help and feedback (i.e., appraisal support), (2) exchange resources and information (i.e., instrumental and informational support), (3) engage in effective teamwork, and (4) create and maintain positive interpersonal relationships (i.e., emotional support; Johnson & Johnson, 1989; Johnson & Johnson, 1997, as cited in White, 2009, p.96).

The result of the present study is in line with previous research studies especially those conducted in the field of foreign language education. Dennis, Phinney, and Chuateco (2005) showed that peer support could be the predictor of students' achievement, adjustment, as well as providing emotional support,

and instrumental support. Moreover, according to Kunwongse (2013), peer feedback is beneficial to students by creating cooperative and collaborative learning that increases students' achievement.

Similarly, as it is acknowledged by Wentzel, Battle, Russell, and Looney (2010), peer groups provide help, advice, and instruction that facilitates learning and academic competencies, as well as emotional support that guarantees emotional security (Brown, et al., 1986, as cited in Wentzel, et al., 2010). Students are listened to by their classmates, they can seek help from their peer groups, and they find a good chance of relating to them (Charlton & David, 1997). The personal attention that students receive from their peers can contribute to 'pupils' personal, social, and educational development' (Charlton & David, 1997, p.27). Thus, Students boost each other's success by helping, encouraging, and supporting one another's endeavors to learn (Johnson & Johnson, 1989, as cited in Johnson & Johnson, 2018).

Regarding the companionship category, it is suggested that students with strong attachments to their university classmates illustrate stronger attachment to the university as a whole, and students who have stronger peer relationships in university show higher levels of academic adjustment (Maunder, 2017). This is because students' feelings of university belonging is associated with their sense of social acceptance (Freeman, Anderman, & Jensen 2007). Thus, any method to facilitate peer interaction between students increases social integration at the university and thus enhances university connectedness (Wilson & Gore, 2013).

Conclusion and Implications

In conclusion, it should be mentioned that the results of the present research add further support to the existing literature regarding trending social supportive functions. Those 5 main functions which were used commonly in

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social support questionnaires were also applicable in the peer support construct, and this construct can be categorized into different types of informational, emotional, instrumental, feedback, and companionship dimensions.

Overall, the peer support questionnaire measures a distinct construct of peer support with different social supportive functions. The researchers hope that PSQ, which was developed based on a careful review of the related literature, experts opinion, and responses of undergraduate students as well as employing different statistical procedures would be considered a useful tool in discovering the relationships among different social and psychological factors as well as contributing to research studies in the area of cooperative learning. Moreover, PSQ could be a useful instrument to guide researchers and teachers towards the conceptualization of peer support construct and a tool to be used by wide-ranging stakeholders in various interdisciplinary approaches and applicative fields.

According to Shechtman, DeBarger, Dornsife, Rosier, and Yarnall (2018), as researchers, we are responsible to break negative cycles of emotions and provide a supportive learning environment to develop psychological factors. Identically, peer support may play a prominent role in academic context research endeavors to inspire future generations of teachers and practitioners to improve the quality of their teaching experience by stimulating positive emotions in students and creating a safe social context for learners to deal with the challenges of learning a foreign language.

In addition, this scale can be used by researchers who are seeking ways to build meaningful social connections among the students and to develop a sense of institutional identity and membership as well as academic adjustment in the university context (Maunder, 2017). The developed instrument could also be employed as a research tool in studies related to peer mentoring

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programs, peer tutoring, and peer education to delve deeply into the issues of supportive functions and cooperative learning in an academic context.

Finally, the findings achieved from the administration of the developed instrument can be beneficial to both researchers and educators in the field of applied linguistics. They can employ the constructed scale as a means of exploring learners' perceptions of peer support and utilize the findings to boost cooperative learning and create a positive atmosphere for their students where everyone can make progress and achieve their potential.

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Appendix A

(Interview Questions)

1. How do you understand the concept of peer support?
2. Can you define peer support in the context of ELT? What do you think are its components?
3. What kind of practical assistance could be provided by peers?
4. How can students support their peers by sharing information?
5. What are some of the advantages of peer support in/out of the class context?
6. How can peers emotionally support each other?
7. To what extent can peers improve each other's attitudes towards different courses/ educational programs in different academic settings?
8- How important do you think is the role of peer support in students' language learning success?

Appendix B

Dear participants:

The main purpose of this questionnaire is measuring your perceptions of peer support. Your careful completion of the questionnaire will definitely contribute to real data and is greatly appreciated.

Directions: Please answer the items in this questionnaire as carefully as possible. There are no right or wrong answers, so please respond as honestly as possible. Please note that the information will be kept confidential and will be used for academic research purposes.

Part I: Demographic Information

Name: …….. Gender: male.... female….
Age: ……years Nationality: Level of education:

Certificate	Diploma	Bachelor's	Master's	Doctorate	Other

aa aa aaa aaaaa aaaaa aaa a aoo ooo hltt eeee eeeeeyy yuup ppaaaaa aatt ccch of the following statements using this scale:

1=SD = Strongly Disagree
2=D = Tend to Disagree
3=N = Neutral
4=A = Tend to Agree
5=SA = Strongly Agree

Items	Strongly Disagree	Tend to Disagree	No idea	Tend to Agree	Strongly Agree
1. Peer support enhances my level of knowledge and academic performance.	1	2	3	4	5
2. Peer support makes me actively engaged in my studies.	1	2	3	4	5
3. When I receive peer support, I am equipped with the required knowledge to overcome academic challenges.	1	2	3	4	5
4. With support of my peers I am more likely to pursue further studies and achieve educational goals.	1	2	3	4	5
5. Peer support can enrich knowledge sharing culture.	1	2	3	4	5
6. Peer support can increase my self-confidence in the classroom.	1	2	3	4	5
7. With the help of my classmates, I feel less anxious in my academic performance.	1	2	3	4	5
8. With my peers' support, my self-esteem increases.	1	2	3	4	5
9. My peers help me develop emotional security in learning.	1	2	3	4	5

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Items	Strongly Disagree	Tend to Disagree	No idea	Tend to Agree	Strongly Agree
10. My peer classmates offer resources which improve my attention to the available learning materials.	1	2	3	4	5
11. My classmates mostly offer practical help which empowers me to obtain desirable educational outcomes.	1	2	3	4	5
12. When I am provided with my peers' advice, I become more prepared to use learning strategies.	1	2	3	4	5
13. Peer feedback encourages student cooperation to establish a positive learning atmosphere.	1	2	3	4	5
14. Peer feedback promotes and accelerates learning.	1	2	3	4	5
15. Peer feedback enhances students' critical thinking.	1	2	3	4	5
16. Peer support fosters a relationship of mutual learning.	1	2	3	4	5
17. Peer support enhances my sense of belongingness in a learning community.	1	2	3	4	5
18. Peer support establishes a relationship based on trust and respect.	1	2	3	4	5
19. My classmates' friendship increases my chance of acceptance by others.	1	2	3	4	5
20. My peers' support could create an intimate relationship with other classmates based on educational equality.	1	2	3	4	5
21. Peer support can develop my academic identity.	1	2	3	4	5
22. Peer support creates more positive attitudes towards my academic field of study and appreciation of university environment.	1	2	3	4	5

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