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Foreign Language Anxiety Inventory

Abstract

The aim of the research was to create a Foreign Language Anxiety Inventory in the Polish language intended for adolescent and adult students. The items of the Inventory were formulated on the basis of the definition, components, sources and manifestations of language anxiety. The data was collected from 113 Polish students of humanities. Foreign languages learned by the participants were English, French, German and Russian. A principal components analysis with varimax rotation was performed on the responses to 60 items of Foreign Language Anxiety Inventory. The analysis identified five following factors explaining 57% of the variance in the data: speaking and self-image, formal evaluation of foreign language proficiency, feeling incompetent, avoidance of learning and physiological reactions together with nervous behaviour. The values of Cronbach α coefficient for the identified five factors ranged between 0.85 and 0.95. The Inventory can serve as a research tool in diagnostic and experimental research.

Key words: *foreign language anxiety, inventory, measurement*

1. Theoretical background and the aim of the research

The aim of the research was to create a Foreign Language Anxiety Inventory in the Polish language intended for adolescent and adult students. Theory and research findings presented in this section were the basis for the Inventory construction and evaluation of its validity.

In psychological literature anxiety is regarded as "a state of apprehension, tension or worry" (Atkinson et al., 1996, p. 685). This variable was investigated as a personality trait, emotional state and situation-specific construct (MacIntyre & Gardner, 1991a).

Language anxiety is defined as: "…the apprehension experienced by the individual in the language class or any situation in which the language is used"(Gardner & MacIntyre, 1993, p. 159). It is also regarded as "a distinct complex of self-perceptions, beliefs, feelings and behaviours related to classroom language learning arising from the uniqueness of the language learning process" (Horwitz, Horwitz, & Cope, 1986, p. 128). Speaking and listening in a foreign or second language are regarded as skills which are most anxiety - provoking (Horwitz, Horwitz, & Cope, 1986). What makes language anxiety different from other academic anxieties is the inability to present one's self and use one's intellectual abilities in a foreign or second language as well as in the native language (Horwitz, Horwitz, & Cope, 1986; Spielman & Radnofsky, 2001). Because of its uniqueness language anxiety is regarded by many researchers as situation specific anxiety (Horowitz, Horowitz, & Cope, 1986; Gardner & MacIntyre, 1993).

MacIntyre and Gardner (1991c) showed that foreign language anxiety can be regarded as a construct different from other forms of anxiety. The researchers performed principal components analysis on 23 research tools measuring various kinds of anxiety. Three factors emerged in the study: social evaluation anxiety, state anxiety and language anxiety. Only language anxiety, out of three aggregated variables constructed on the basis of these factors, did correlate significantly with remembering foreign language numbers and with listing foreign language words which belong to a given category. The correlation was negative.

Language anxiety is a variable which strongly influences foreign and second language learning. Onwuegbuzie, Bailey and Daley (2000) by means of the regression analysis performed on various cognitive, affective, personality and demographic variables found that language anxiety is the second best predictor of foreign language achievement after overall academic achievement. The majority of the researchers report a significant moderate negative correlation between the measures of foreign language anxiety and the measures of foreign language achievement (Onwuegbuzie, Bailey, & Daley, 2000).

The influence of anxiety on foreign language learning can be explained by the fact that anxiety interferes with coding, processing and production of language material (MacIntyre & Gardner, 1994). This happens because an anxious person often divides his or her attention between language material and self – derogatory thoughts (MacIntyre & Gardner, 1989; MacIntyre, Baker, Clément, & Donovan, 2002).

Low self – esteem seems to characterize anxious language learners. Research demonstrates that students with high foreign language anxiety in comparison to students with low foreign language anxiety rate their foreign language competence lower (MacIntyre, Baker, Clément, & Donovan, 2002) and underestimate it

(MacIntyre, Noels, & Clément, 1997), expect low foreign language achievement, evaluate their intellectual abilities as poor (Bailey, Onwuegbuzie, & Daley, 2000), care more about their mistakes, are more perfectionist and tend to feel that their performance is constantly being evaluated by others (Gregersen & Horwitz, 2002).

Language anxiety is thought to be a complex construct. Horwitz, Horwitz and Cope (1986, p.127) mention "communication apprehension, test anxiety and fear of negative evaluation" as the components of foreign language anxiety.

The authors enumerate the following sources of language anxiety (Horwitz, Horwitz, & Cope, 1986; Young,1991):

1. Communicating with other people and being judged by them.
2. Unrealistic and perfectionist learner beliefs concerning foreign language learning.
3. Beliefs of the foreign language teacher, especially those concerning the necessity of formal relationship with students and strict class discipline.
4. Correction of a student`s mistakes which is harsh, frequent and takes place in front of the other students.
5. Formal evaluation of foreign language proficiency, especially the awareness of being evaluated and discrepancy between class material and test content.

Foreign language anxiety manifests itself in various ways. The following are commonly regarded as characteristic (Horwitz, Horwitz, & Cope, 1986; MacIntyre & Gardner, 1991b):

1. Tendency to avoid communication with others.
2. Behaviours which protect from being judged unfavourably by others, such as speaking briefly or giving feedback in a non-verbal form.
3. Studying for a long time without results or, on the contrary, missing classes or postponing learning.
4. Symptoms which result from experiencing negative emotions, which include:
   - physiological reactions like, for example, fast pulse, nervous stomach, sweating palms,
   - not being able to sit still,
   - nervous manipulating a pen or other small object,
   - stuttering,
   - problems with information processing, like not being able to concentrate, difficulties in remembering things and recalling what has been learnt,
   - not being able to utter a word when there is a necessity to speak in front of other students,
   - problems with recognizing and repeating foreign language sounds, rhythm, intonation and accent.

Foreign Language Anxiety was measured by various kinds of scales. Researchers used numerical 7-point or 10-point scales consisting of 1 item or 7-point bipolar adjectival scales. Graphic scales called anxometers were also used to measure anxiety experienced at the moment or in a given situation (MacIntyre & Gardner, 1991c; Gardner & MacIntyre, 1993; Gardner, Masgoret, Tennant, & Mihic, 2004).

Many tests, questionnaires and inventories were designed to measure various aspects of foreign language anxiety. The examples are: French Class Anxiety Scale constructed by Gardner and Smythe in 1975 and scales measuring English use anxiety and English test anxiety developed by Clemént, Gardner and Smythe in 1977 and 1980 respectively (MacIntyre & Gardner, 1991a). Foreign language anxiety is also measured by two subscales of Attitude / Motivation Test Battery (Gardner & MacIntyre, 1993).

A widely known research tool measuring anxiety which arises in a foreign language class is Foreign Language Classroom Anxiety Scale – FLCAS (Horwitz, Horwitz, & Cope, 1986). The scale consists of 33 items, each rated on a 5-point scale ranging from strong agreement to strong disagreement. The reliability of this scale was confirmed (Horwitz, 1991) by Cronbach α coefficient of 0.93 (n = 108) and by the test-retest method with the period of 8 weeks between measurements, which yielded the correlation of 0.83 (p = 0.001; n = 78). It was proved that the Foreign Language Classroom Anxiety Scale scores correlate significantly and positively with the scores on trait anxiety subscale of State – Trait Inventory (r = 0.29; p = 0.002; n = 108) and with the score on 1-item scale measuring foreign language class anxiety (r = 0.77; p = 0.001; n=108). The correlations of Foreign Language Classroom Anxiety Scale scores with the scores on foreign language achievement measures were found to be significant and negative (Horwitz, 1991; Phillips, 1992; Onwuegbuzie, Bailey, & Daley, 2000)

Various studies show that language anxiety strongly affects foreign language learning and teaching. Comprehensive knowledge concerning this variable has been gathered. However, research was very often conducted in a second language context and using instruments constructed in English. Moreover these instruments, like the Foreign Language Classroom Anxiety Scale, are limited only to anxiety experienced in a foreign language classroom not allowing to diagnose anxiety connected with other situations when a foreign language is used. In Poland, as in other countries, there is a need to diagnose language students who might have problems in order to provide them with necessary assistance. Moreover, nowadays adolescent and adult Poles more often than before have an opportunity to communicate with native speakers of foreign languages outside the language classroom. Therefore a trial has been undertaken to construct a

foreign language anxiety inventory in the Polish language for students learning foreign languages in a formal context. It was also assumed that the inventory should contain items concerning anxiety which arises because of the necessity to use a foreign language not only inside but also outside the language classroom. The results of foreign language anxiety construction are presented in the following sections.

2. Method

2.1 The development of Foreign Language Anxiety Inventory (FLAI)

The items of the Foreign Language Inventory (FLAI) were formulated on the basis of the definition, components, sources and manifestations of language anxiety (Horwitz, Horwitz, & Cope, 1986; MacIntyre & Gardner, 1991b; Young, 1991; Gardner & MacIntyre, 1993). Seventy items in Polish were originally written and included in the Inventory. To each Inventory item a 5-point scale was attached, where 1 means very rarely, 5 means very often.

2.2 Instruments

Apart from the Foreign Language Anxiety Inventory the following measures were used in the study:

- Foreign Language Use Anxiety Scale (FLUAS) – a one-item scale designed for the purposes of this study. It measures the respondent's general judgment concerning the level of anxiety he or she feels when using a foreign language. A respondent is asked to provide his or her answer on a 9 – point scale, where 1 means very low, 9 means very high.
- Speaking, Social evaluation and Test Anxiety Scale (SSTAS) – designed for the purposes of this study. It was constructed on the basis of the language anxiety components (Horwitz, Horwitz and Cope 1986). It consists of three items and measures anxiety connected with: speaking a foreign language, the impression made on others when communicating in a foreign language and with foreign language tests respectively. Each of the three items is rated on a 9-point scale, where 1 means very low, 9 means very high.
- State-Trait Anxiety Inventory (STAI) – Polish version by Spielberger, Strelau, Tysarczyk and Wrześniewski (Wrześniewski & Sosnowski, 1987). The Inventory consists of two parts. The first part – STAI X1 – measures state anxiety and consists of 20 items which ask a respondent to report his or her feelings at the moment of giving answers. Each item is rated on a 4-point scale, where 1 means strong agreement, 4 means strong disagreement. The second part of

STAI – STAI X2 – measures trait anxiety and contains 20 items concerning the respondent's typical feelings . Each item is rated on a 4-point scale, where 1 means almost never, 4 means almost always.

- Foreign Language Speaking Proficiency Self-rating Scale (FLSPRS) – designed as a one – item scale for the purposes of the study. It asks a respondent to rate his or her own speaking proficiency in a foreign language on a 7-point scale, where 0 means an absolute beginner, 6 means advanced.

2.3 Participants

The participants of the research were the students of Ethnology and Educational Sciences Department of Silesian University in Poland at the average age of 21.38 (SD = 1.21). The data was collected from 113 persons, among which there were 99 women and 14 men.

In the course of their studies the participants were learning the following foreign languages: English (69 persons), French (20 persons), German (10 persons) and Russian (9 persons).

2.4 Procedure

At the beginning of foreign language class the research tools were distributed and the instruction was given how to complete them. The participants were asked to give their answers at home and to bring the completed inventories and scales the following week. After a week completed research tools were collected.

3. Results

3.1 Item elimination from the original 70-item version of the Foreign Language Inventory

The descriptive statistics of 70 Inventory items and Pearson correlation coefficients of each item with the total Inventory score were analysed. It was decided that 10 items whose Pearson correlation coefficient with the Inventory total score was lower than 0.45 would be deleted from the 70 – item Inventory. Many of these items concerned anxiety about changing a person's typical reactions, customs and way of thinking as the result of learning a foreign language.

A 60-item version of the Foreign Language Inventory was thus created. Further analysis was conducted to determine validity and reliability of this 60-item version of the Inventory.

3.2 Descriptive statistics and distribution of 60-item Foreign Language Anxiety Inventory results

Each of the 60 items of the Foreign Language Inventory is rated on a scale ranging from 1 (very rarely) to 5 (very often). The maximum possible score of the 60 – item Inventory is therefore 300. The arithmetic mean of the Inventory total scores obtained from 113 participants was 141.89 (SD = 43.82). The value of the Kolmogorov-Smirnov test (d = 0.074, p > 0.2) shows that the distribution of the Inventory results can be regarded as normal. The descriptive statistics of the total Foreign Language Anxiety Inventory score and the value of the Kolmogorov-Smirnov test are shown in Table 1.

Table 1. Foreign Language Anxiety Inventory (60 items) descriptive statistics and value of Kolmogorov-Smirnov test of normality

Statistics	Value
Number of participants	113
Arithmetic mean	141.894
Standard deviation	43.822
Median	138.000
Skewness	0.610
Kurtosis	0.221
Kolmogorov-Smirnov test of normality	d = 0.074, p > 0.200

3.3 Principal components analysis of anxiety inventories and scales used in the research

A principal components analysis was conducted in which total scores on anxiety inventories and scales used in the research were treated as variables. The aim of the procedure was to prove that the 60 – item Foreign Language Anxiety Inventory measures a different construct than state and trait anxiety as measured by the Inventory created by Spielberger and co-workers (Wrześniewski & Sosnowski, 1987).

The analysis yielded two factors with eigenvalues greater than 1.0. These factors accounted for 85.48% of the variance in the data. To obtain factor loadings normalized varimax rotation was conducted. The results of the principal components analysis are shown in Table 2 and factor loadings in Table 3.

The first factor was characterized by high loadings on a 60 – item version of the Foreign Language Anxiety Inventory and Speaking, Social evaluation and Test Anxiety Scale. Hence, the first factor was termed foreign language anxiety. The second factor was marked by high loadings on the State Anxiety Inventory and

Trait Anxiety Inventory. It was interpreted as general anxiety. The Foreign Language Use Anxiety Scale loaded highly on both factors, although its loading on a foreign language anxiety factor was higher than its loading on a general anxiety factor.

Table 2. Tools used for anxiety measurement – principal components with eigenvalues >1

Value no.	Eigenvalue	% of total variance explained	Cumulative Eigenvalue	Cumulative % of total variance explained
1	3.158	63.156	3.158	63.156
2	1.116	22.321	4.274	85.477

Table 3. Tools used for anxiety measurement – factor loadings

Inventory/Scale	Factor 1	Factor 2
Foreign Language Use Anxiety Scale	0.939	0.712
Speaking, Social Evaluation and Test Anxiety Scale	0.933	0.195
Foreign Language Anxiety Inventory (60 items)	0.791	0.421
State -Trait Anxiety Inventory X1 (STAI X1 – state anxiety)	0.052	0.933
State -Trait Anxiety Inventory X2 (STAI X2 – trait anxiety)	0.386	0.809

3.4 Construct validity of Foreign Language Anxiety Inventory (60 items) – results of principal components analysis

To evaluate the construct validity of the Foreign Language Anxiety Inventory a principal components analysis was performed on 60 items of the Inventory. Twelve factors, which explained 72.70 % of the variance in the data, proved to have eigenvalues greater than 1.0. The results of the principal components analysis are shown in Table 4.

Table 4. Foreign Language Anxiety Inventory (60 items) – principal components with eigenvalues >1

Value no.	Eigenvalue	% of total variance explained	Cumulative Eigenvalue	Cumulative % of total variance explained
1	24.869	41.449	24.869	41.449
2	3.139	5.232	28.008	46.680
3	2.602	4.337	30.610	51.017
4	2.120	3.534	32.731	54.551
5	1.712	2.854	34.443	57.405

Value no.	Eigenvalue	% of total variance explained	Cumulative Eigenvalue	Cumulative % of total variance explained
6	1.623	2.705	36.066	60.110
7	1.595	2.659	37.661	62.768
8	1.420	2.366	39.081	65.135
9	1.225	2.042	40.306	67.177
10	1.184	1.973	41.490	69.150
11	1.076	1.793	42.566	70.943
12	1.056	1.760	43.622	72.703

On the basis of the total variance explained and interpretability of the solution it was decided that 5 – factor solution would be accepted, which was based on five factors accounting for 57.41 % of the variance in the data. To obtain final factor loadings normalized varimax rotation was used. The factor loadings of the items of the Foreign Language Anxiety Inventory are presented in Table 5, where the English translation of original items written in Polish was used.

Table 5. Principal components analysis of Foreign Language Anxiety Inventory

Item no.	Item – English translation	Factor loading
	Factor 1: Speaking and self-image	
20	I am afraid when I am to speak in a foreign language in the presence of a group of people	0.748
67	I suffer from stage fright when I have to speak in front of the whole group of people during my foreign language class	0.740
66	I am afraid to join in a conversation held in a foreign language	0.702
54	I nod or smile to avoid joining in a group discussion held in a foreign language	0.655
61	When I have to communicate in a foreign language I try to speak as briefly as possible	0.644
50	I am afraid that during my foreign language class I will do worse than the rest of the group	0.636
14	I am afraid to speak in a foreign language because I may make a fool of myself	0.599
70	I feel stressed as the result of the competition in a group of people with whom I learn a foreign language	0.591
51	I am afraid to use a foreign language because then I am not able to show my real worth	0.586
49	When I am to say something in a foreign language I am not able to utter a word out of fear	0.561
59	When I know I will have to use a foreign language I am not able to organize myself well	0.549

Item no.	Item – English translation	Factor loading
65	I am afraid to speak in a foreign language because my pronunciation and accent are not perfect	0.546
5	I fear that the persons with whom I attend my foreign language class think that my foreign language skills are poor	0.537
69	I am afraid to start a conversation in a foreign language	0.511
60	When somebody tells me something in a foreign language I begin to be nervous, which makes it difficult for me to understand what I am listening to	0.462
32	During my foreign language class I prefer to remain silent because I am afraid that my teacher will interrupt me and tell me to express my thoughts in a different way	0.453
34	I stutter when I am to say something in a foreign language	0.426
Factor 2: Formal evaluation of foreign language proficiency		
16	I am afraid that in a foreign language test there will be the type of task I will not be able to solve	0.727
10	When I take a written or oral foreign language test I feel tension, which makes me forget the material I have learnt	0.625
15	I need to devote more time to learning a foreign language than to learning other subjects	0.612
9	I fear I will not satisfy the requirements of my foreign language teacher	0.611
11	During my foreign language class I feel tension, because my teacher exerts excessive control over what I am doing	0.605
33	During my foreign language class I am afraid of being marked	0.558
17	I am afraid to address my foreign language teacher because I know that he/she is going to patronize me	0.554
27	I feel tension before a foreign language test because I do not know what language material will be contained in the tasks	0.552
4	I am afraid to attend my foreign language class because of a nervous atmosphere created by my teacher	0.542
13	I feel stress before a foreign language test because I do not know what exactly I should learn	0.537
29	I am afraid of foreign language tests because they contain the kind of tasks which are different from the tasks solved during classes	0.531
3	When I learn foreign language words I feel tension, which makes my learning longer	0.528
53	During my written or oral foreign language test I often give a wrong answer although I know the right one	0.374
Factor 3: Feeling incompetent		
41	When I speak in a foreign language I am afraid that the phrases and constructions I use are not suitable	0.722
25	There are foreign language tasks which I am afraid to approach because I know I will not be able to deal with them	0.679
12	When someone tells me something in a foreign language I am afraid I will not understand everything	0.627

Item no.	Item – English translation	Factor loading
1	I am afraid to write in a foreign language because I know I am going to make many mistakes	0.616
2	I feel stressed before a written or oral foreign language test because I do not know how to learn	0.576
47	When I read in a foreign language I am afraid that I will not understand essential information	0.567
8	I am afraid to write in a foreign language because I do not know which customary rules should be observed when writing a given type of text	0.564
55	When I listen to someone speaking in a foreign language I feel tension because he/she usually speaks too fast for me to understand	0.544
56	I am reluctant to speak in a foreign language because I know that what I say will never be entirely correct	0.530
28	When I speak in a foreign language I am afraid that I will make a mistake	0.513
48	During my foreign language class I feel anxious because I do not know what words or grammatical constructions will be useful	0.513
31	I am reluctant to speak and to write in a foreign language because I do not succeed in conveying what I want to communicate	0.499
42	When I learn a foreign language I am distracted by the thoughts how poor my skills are	0.482
46	When I have to speak in a foreign language I present facts only without commenting on them because of the tension I feel	0.462
6	When I read in a foreign language I feel tension because I know that I will not understand everything	0.443
Factor 4: Avoidance of learning		
68	I feel reluctant to learn a foreign language and that is why I fail to do my homework	0.751
57	I feel reluctant to learn a foreign language, which makes me attend my foreign language class without proper preparation	0.741
40	Foreign language classes are stressful for me and that is why I quit them or miss part of them	0.631
58	I feel tension during foreign language classes because they are conducted in a way which does not suit me	0.559
18	During my foreign language class it is difficult for me to sit still on my chair	0.531
22	I feel discouraged because I have to learn a foreign language and I know I have no aptitude for it	0.444
Factor 5: Physiological reactions together with nervous behaviour		
43	The necessity to use a foreign language makes me have a nervous stomach	0.590
44	When I use a foreign language I often smile nervously or hide my tension behind the mask of jokes	0.587
38	The necessity to use a foreign language makes my hart pound in my chest	0.584
30	When I use a foreign language my palms sweat	0.569
35	I fear my foreign language class because my teacher tends to correct mistakes without emphasizing things which have been done well	0.560

Item no.	Item – English translation	Factor loading
21	I feel uncomfortable during my foreign language class because I know that my teacher is going to point out my mistakes in the presence of other students	0.486
23	When I am to use a foreign language I manipulate nervously my pen or other small object	0.470
45	I feel nervous during a foreign language class because I do not know whether I am marked or not	0.469
64	When I read or listen to something in a foreign language it is hard for me to concentrate	0.359

The first of five extracted factors obtained high loadings from 17 items. The items like the following loaded highly on this factor: I am afraid when I am to speak a foreign language in the presence of a group of people; I suffer from stage fright when I have to speak in front of the whole group of people during my foreign language class; I am afraid to use a foreign language because then I am not able to show my real worth. The first factor was therefore interpreted as speaking in a foreign language and self-image.

The second factor consisted of 13 items. High loadings on this factor characterized items like the following: I am afraid that in a foreign language test there will be the type of task I will not be able to solve; When I take a written or oral foreign language test I feel tension, which makes me forget the material I have learnt. The second factor was termed as the formal evaluation of foreign language proficiency.

Fifteen items loaded highly on the third factor. Among these items were the following: When I speak a foreign language I am afraid that the phrases and constructions I use are not suitable; There are foreign language tasks which I am afraid to approach because I know I will not be able to deal with them. It was decided that the third factor should be interpreted as feeling incompetent.

The fourth factor contained 6 items. The items which loaded highly on the factor were, for example: I feel reluctant to learn a foreign language and that is why I fail to do my homework; I feel reluctant to learn a foreign language, which makes me attend my foreign language class without proper preparation. The fourth factor was defined as avoidance of learning.

Nine items loaded highly on the fifth factor. Items like the following received the highest loadings: The necessity to use a foreign language makes me have a nervous stomach; When I use a foreign language I often smile nervously or hide my tension behind the mask of jokes; The necessity to use a foreign language makes my heart pound in my chest. The fifth factor was termed as physiological reactions together with nervous behaviour.

3.5 Characteristics of extracted factors – reliability indices

Two statistics were used to evaluate reliability of extracted factors: the arithmetic mean of factor loadings and Cronbach α coefficient. The values of these statistics are shown in Table 6.

Table 6. The characteristics of extracted factors

Factor no.	Factor interpretation	The arithmetic mean of factor loadings	Cronbach α calculated for factor items
1	Speaking and self – image	0.585	0.950
2	Formal evaluation of foreign language proficiency	0.566	0.907
3	Feeling incompetent	0.556	0.937
4	Avoidance of learning	0.610	0.847
5	Physiological reactions together with nervous behaviour	0.519	0.854

The arithmetic mean of factor loadings ranged from 0.519 for factor 5 concerning physiological reactions together with nervous behaviour to 0.610 for factor 4 connected with avoidance of learning.

The highest Cronbach α coefficient (0.950) was found in case of the items forming factor 1 termed as speaking and self-image. Items belonging to Factor 4 – defined as avoidance of learning – were characterized by the lowest value of Cronbach α coefficient (0.847).

3.6 The division of the 60-item version of the Foreign Language Anxiety Inventory into two parallel 30-item versions

The 60 items of the Foreign Language Anxiety Inventory were equally divided into two groups according to the factor structure and their factor loadings. In this way two 30-item versions of the Foreign Language Anxiety Inventory were created. The first version consisted of items: 1, 2, 5, 6, 10, 13, 15, 17, 20, 22, 29, 30, 31, 32, 33, 34, 35, 40, 41, 42, 43, 45, 51, 54, 55, 56, 57, 61, 65 and 70. The following items formed the second 30 – item version of the Inventory: 3, 4, 8, 9, 11, 12, 14, 16, 18, 21, 23, 25, 27, 28, 38, 44, 46, 47, 48, 49, 50, 53, 58, 59, 60, 64, 66, 67, 68 and 69.

Then an analysis was conducted to prove that the two 30 – item versions of the Foreign Language Anxiety Inventory can be regarded as parallel research tools. According to four conditions cited by Hornowska (2001) two versions of a research tool can be regarded as parallel if their arithmetic means, standard deviations, mean correlations between items and correlations with other research tool are equal. The results of the analysis are presented in Table 7.

It was proved that arithmetic means, standard deviations, mean correlations between items and correlations with the Trait Anxiety Inventory score of two 30-item versions of the Foreign Language Anxiety Inventory can be regarded as equal. Therefore, version 1 and version 2 can be regarded as parallel versions of the Foreign Language Anxiety Inventory.

Table 7. Comparison of two 30 – item versions of the Foreign Language Anxiety Inventory

Number of participants	Statistics	FLAI -30-I Foreign Language Anxiety Inventory (30 items) version 1	FLAI -30-II Foreign Language Anxiety Inventory (30 items) version 2	Significance level
113	Arithmetic mean	70.566	71.327	Z = 1.2396 (p < 0.2, ns)
113	Standard deviation	22.218	22.087	Z = 0.256 (p < 0.4, ns)
113	Mean correlation between items	r = 0.4025	r = 0.4021	p = 0.9977, ns
30	Pearson correlation coefficient with Trait Anxiety (STAI X2)	r = 0.55	r = 0.57	p = 0.9151, ns

3.7 Correlations of Foreign Language Anxiety with other anxieties and foreign language proficiency self-rating

Table 8 shows Pearson correlation coefficients between the scores on the Foreign Language Anxiety Inventory versions and the results of the research tools measuring foreign language use anxiety, speaking, social evaluation and test anxiety, state and trait anxiety and foreign language proficiency self – rating. The correlations which proved to be significant are marked with an asterisk. All correlation coefficients were calculated for 30 participants.

Significant strong positive correlations were found between the scores on the Foreign Language Anxiety Inventory versions (r ranging from 0.97 to 0.99). Correlations between the scores on the Foreign Language Inventory versions and ratings made by subjects on Foreign Language Use Anxiety Scale and Speaking, Social evaluation and Test Anxiety Scale were also significant and positive – the values of Pearson r ranged between 0.78 to 0.90.

Significant positive correlations were also found between the score on trait anxiety measure (STAI X2) and scores on the Foreign Language Anxiety versions (r ranging between 0.55 and 0.57). The same pattern of relationship was found

between trait anxiety measure and ratings on the Language Use Anxiety Scale (r = 0.50) and the Speaking, Social evaluation and Test Anxiety Scale (r = 0.49). No significant correlations were observed in case of state anxiety measure.

Table 8. Foreign Language Anxiety Inventory – Pearson correlations with anxiety and foreign proficiency self-evaluation inventories and scales (N=30)

Inventory/Scale	FLAI-30-I Foreign Language Anxiety Inventory (30 tems) Ver. I	FLAI-30-II Foreign Language Anxiety Inventory (30 items) Ver. II	FLAI-60 Foreign Language Anxiety Inventory (60 items)	FLUAS Foreign Language Use Anxiety Scale	SSTAS Speaking, Social evaluation and Test Anxiety Scale	STAI X1 State Anxiety Inventory	STAI X2 Trait Anxiety Inventory	FLSPRS Foreign Language Speaking Proficiency Self–rating Scale
FLAI -30-1	1.00	0.0001	0.0001	0.0001	0.0001	0.1500	0.0020	0.0200
FLAI -30-II	0.97*	1.00	0.0001	0.0001	0.0001	0.2500	0.0010	0.0100
FLAI-60	0.99*	0.99*	1.00	0.0001	0.0001	0.2000	0.0010	0.0110
FLUAS	0.78*	0.80*	0.79*	1.00	0.0001	0.4000	0.0050	0.0760
SSTAS	0.88*	0.89*	0.90*	0.91*	1.00	0.125	0.006	0.0510
STAI X1	0.28	0.24	0.26	0.20	0.29	1.00	0.0010	0.0070
STAI X2	0.55*	0.57*	0.57*	0.50*	0.49*	0.60*	1.00	0.0370
FLSPRS	−0.45*	−0.46*	−0.46*	−0.33	−0.36	−0.48*	−0.38*	1.00

The ratings on the Foreign Language Speaking Proficiency Self–rating Scale proved to be significantly and negatively related both to the scores on the Foreign Language Anxiety Inventory versions (r ranging between −0.45 and −0.46) and to the scores on state anxiety and trait anxiety measures (r = −0.48 and r = −0.38 respectively).

4. Discussion

The results of the principal components analysis of the anxiety inventories and scales used in the research showed that the constructed 60 – item Foreign Language Anxiety Inventory measures different constructs than the types of anxiety measured by the State - Trait Anxiety Inventory designed by Spielberger and co-workers (Wrześniewski & Sosnowski, 1987). This is consistent with the findings of MacIntyre and Gardner (1991c) who isolated language anxiety as a factor distinct from social evaluation anxiety and state anxiety factors.

The principal components analysis allowed to reduce 60 items of the Foreign Language Anxiety Inventory to five factors accounting for 57.41% of the variance in the data. These factors were defined as: speaking and self-image, formal evaluation of foreign language proficiency, feeling incompetent, avoidance of learning and physiological reactions together with nervous behaviour. The Foreign Language Anxiety Inventory factor defined as speaking and self – image accounted for the highest percent of the variance in the sample (41.45%). These results confirm statements and findings made by many authors that speaking in front of other people, difficulty to make a favorable impression on others and testing situations are main sources of language anxiety (Horwitz, Horwitz, & Cope, 1986; Young, 1991; Spielman & Radnofsky, 2001).

The internal consistency of the Foreign Language Anxiety Inventory factors may be regarded as satisfactory. Values of Cronbach α coefficient calculated for items belonging to the Inventory factors (from 0.950 for factor 1 items to 0.847 for factor 4 items) are comparable to the Cronbach α coefficient value of 0,93 found by Horwitz (1991) for Foreign Language Classroom Anxiety Scale (FLCAS).

Sixty items of the Foreign Language Anxiety Inventory may be divided to form two 30-item inventories which satisfy the conditions of parallel research tools cited by Hornowska (2001).

The scores of the Foreign Language Anxiety Inventory proved to be significantly and positively correlated with the respondents' ratings on the one-item Foreign Language Use Anxiety Scale. This indicates that the respondent's general judgment concerning his or her foreign language anxiety is consistent with the evaluation of the person's foreign language anxiety level performed by means of the Foreign Language Anxiety Inventory. A significant positive relationship was also found between the Foreign Language Anxiety Inventory scores and the subjects' ratings on the three-point Speaking, Social evaluation and Test Anxiety Scale. Therefore it seems possible to asses the general level of language anxiety by means of a three-item scale. Such procedure could be used in cases where there is no time to administer a 60- or 30- item version of the Foreign Language Anxiety Inventory and information concerning the level of foreign language anxiety is desirable and has to be obtained quickly.

Significant positive correlations were found between foreign language anxiety as measured by the Foreign Language Anxiety Inventory and trait anxiety. The same type of relationship ($r = 0.29$; $p = 0.002$; $n = 108$) between the scores on the Foreign Language Classroom Anxiety Scale and the result of the trait anxiety subscale of the State – Trait Anxiety Inventory was found by Horwitz (1991).

Significant negative correlations were found between foreign language anxiety measured by the Foreign Language Anxiety Inventory and self-ratings of foreign

language speaking proficiency. This result is consistent with many research findings which show that high language anxiety is connected with a low self – rating of foreign language proficiency (MacIntyre, Noels, & Clément, 1997; Bailey, Onwuegbuzie, & Daley, 2000).

The Foreign Language Anxiety Inventory is designed for adolescent and adult language learners. It can be used in diagnostic and experimental research. The scores of the Inventory may be used by a foreign language teacher to establish whether any of his or her students suffers from high language anxiety. Foreign Language Anxiety Inventory results can also show which aspect of foreign language learning and communication is especially anxiety – provoking for a given student. Such knowledge could be the basis for an individualized teaching and work with the students whose language anxiety should be reduced. Individual teaching and work with an anxious foreign language student might, for example, include:

- teaching language aspects in which a given student feels especially incompetent,
- demonstrating various learning strategies and strategies which are helpful during taking foreign language proficiency tests (for example time management strategies),
- awareness - rising discussions influencing a student`s beliefs and attitude connected with the foreign language learning process - especially its duration and effectiveness,
- helping a student to control his or her emotions and motivation with the benefit to the foreign language learning process.

The results of the Foreign Language Anxiety Inventory would also enable a foreign language teacher to establish how his or her attitude towards learners and the role he or she performs in class contribute to his or her students` level of anxiety. Two parallel 30-item versions of the Inventory may be used as a pretest and a posttest in experimental research. Thanks to their experimental design it would be possible to verify the effectiveness of the use of affective learning strategies which facilitate the control over one's emotions connected with learning . Experimental research could also serve to establish whether various teaching methods contribute to the reduction of foreign language anxiety.

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