

Motivations Underlying Blind Students' English Language Learning: A Theoretical and Factorial Analysis

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Abstract The present study aimed to explore whether the reasons for which blind students (BSs) learn English differ from those of normal students (NSs). To this end, Motivations Underlying English Language Learning Scale (MUELLS) designed and validated by Khodadady and Ashrafborji (2013) was administered to 120 BSs who studied English as part of their curriculum at two junior and senior high schools in Mashhad, Iran. The results showed that compared to NSs whose domain of motivation consisted of three genera, i.e., Intrinsic, Extrinsic and Communicative, BSs' motivation comprises eight, i.e., Intrinsic, Self-Satisfying, Other-Satisfying, Communicative, Self-Enhancing, Extrinsic, Socializing, and Self-Encouraging. The correlational analysis of genera constituting BSs' motivation domain showed that they differed from each other in terms of relationships they held with each other. The difference in the number as well as structure of genera comprising NSs and BSs' domain of motivation is discussed in terms of microstructural approach of schema theory and suggestions are made for future research.

Keywords Motivations Underlying English Language Learning Scale (MUELLS), Schema theory, Factor analysis

1. Introduction

In order to develop reliable and valid measures of reading comprehension ability, Khodadady (1997) reviewed the literature in applied linguistics and concluded that all available testing methods suffered from one common deficiency, i.e., lack of a sound theory to explain the process. He did, for example, study multiple choice item tests (MCITs) measuring reading comprehension ability and announced that multiple choice items (MCIs) designed by specialized organizations such as Educational Testing Service (ETS) lacked construct validity. Khodadady (1999a) focused on the Test of English as a Foreign Language (TOEFL) in particular and showed that the passages upon which its reading comprehension MCIs were developed were written by test designers themselves. Criticizing the practice, he argued that the TOEFL must be designed on authentic texts, i.e., the passages which are written for being read, not for testing reading comprehension ability.

In addition to the necessity of writing artificial passages, developing well functioning MCIs has proved to be the most challenging because their distracters are "the most difficult part of the test item to write" (Haladyna, 1994, p. 36) and thus their primary limitation (Payne, 1984). According to Khodadady (1999a), the MCIs are basically written on the

basis of intuition. This is because instead of specifying and elaborating on the sources from which item writers can choose their alternatives, almost all textbooks dealing with testing and measurement confine themselves to providing some guidelines dealing with the mechanics of language. Farhady, Jafarpoor and Birjandi (1994), for example, suggested that "all distracters should be of similar length and level of difficulty" (p. 96). Khodadady (1997) and Khodadady and Herriman (2000), therefore, suggested schema theory as the most powerful rationale by use of which plausible and attractive MCIs can be written.

According to Khodadady (1999a) schema theory has been applied to testing reading comprehension ability either as a macro structure or as a micro structure. The first adopts texts as its unit of reference while the second focuses on the words constituting the texts. The earlier modules of International English Language Testing System (IELTS) were, for example, developed on texts written in fields such as humanities and engineering as macro structures whose understanding depended supposedly on the students' background knowledge gained in these fields independently of other fields. The application of macro structures to the measurement of reading comprehension ability was, however, questioned seriously when studies after studies showed that students familiar with a field such as engineering did better on tests developed on texts dealing not only with their own fields but also on the texts tapping into other fields such as humanities (e.g., Clapham, 1996; Moy, 1975; Shoham, Peretz & Vorhaus, 1987).

Khodadady (2001) questioned the validity of a macro

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schema for its being fixed or “a conventional knowledge structure that exists in memory” (Yule, 2006, p. 132). This is because it approaches reading comprehension ability as an interpretation process “guided by the principle that every input is mapped against existing schema and that all aspects of that schema must be compatible with the input information” (Carrell, 1983). Khodadady argued that a schema is as much conventional as it is personal. Instead of viewing it as a fixed entity or map as Yule (2006) and Carrell (1983) did, respectively, Khodadady approached schemata as dynamic concepts which involve personal experiences, feelings, and attitudes of individuals as they activate them within a certain place and time to understand texts or produce those of their own. The very difference in the understanding of a given text by different individuals attests to the individuals' personal contributions to what they read, not because of a single macro schema but due to the schemata which comprise the text. Khodadady (2001) defined a schema as a

any concept realized in a word or phrase, syntactic or semantic, closed or open, syntagmatic or paradigmatic, which can stand by itself or combine with other concepts to produce an idiosyncratic image in the mind of a given person. This image has a direct relationship with the person's experiences with the concept gained through its application with other semantically and syntactically related concepts. Schemata are idiosyncratic because individuals differ from each other in terms of their experiences” (p. 111).

The microstructural approach towards understanding texts helps researchers focus on their constituting words as dynamic schemata which combine with each other to shape their readers' comprehension and thus question the existence of a subjective macro structure whose contribution to the measurement of reading comprehension ability has not been empirically documented in any study so far (Khodadady, 2001). In contrast to its macrostructural counterpart, the microstructural approach not only explains the process of MCI development (Khodadady, 1999) but also addresses the texts upon which the items should be developed (Khodadady & Herriman, 2000). The latter characteristic, i.e., the selection of texts for measuring a given construct, applies to both language testing and the development and validation of scales such as the Motivations Underlying English Language Learning Scale (MUELLS) explored in the present study.

The characteristics or attributes of English language teachers have, for example, been extensively studied recently. Suwandee (1995) reviewed the literature and selected 39 characteristics from 14 studies. Moafian and Pishghadam (2008) added eight to these characteristics to develop their own 47-item “Characteristics of Successful Iranian EFL Teachers Questionnaire”. Feizbakhsh (2010) employed the questionnaire in order to find out whether teacher success was related to their emotional intelligence (EQ). Her results “revealed that there is no significant relationship between teachers' success and EQ at high schools” (p. iii). Neither did her 1461 participants' English scores correlate significantly

with the questionnaire and its 12 underlying factors.

Khodadady, Fakhrabadi and Azar (2012) closely scrutinized Moafian and Pishghadam's (2008) questionnaire and questioned its validity on the basis of microstructural approach to schema theory. Instead of dealing specifically with the “English language” as the very EFL abbreviation in its title, i.e., “Characteristics of Successful Iranian EFL Teachers Questionnaire”, indicates, three of its items, i.e., 1, 13 and 35, for example, deal with teaching “subject matter” implying teaching courses such as biology and chemistry. Its first item, for example, reads, my EFL teacher “has a good knowledge of subject matter”. Furthermore, there are items dealing neither with the components of English language such as grammar and vocabulary nor with the skills of listening, reading and writing. These schema-based observations did help Khodadady and his associates develop their 102-statement English Language Teachers' Attribute Scale (ELTAS) as a comprehensive measure of “teacher effectiveness” domain.

In addition to highlighting the necessity of including relevant schemata representing pertinent concepts such as grammar and vocabulary to measure what the ELTAS was designed to assess, the microstructural approach of schema theory necessitates setting the concepts comprising a given domain such as “teacher effectiveness” within a hierarchical system in which both the designers of scales and their takers play an active role. While the designers specify the schemata, the concepts expressed by words, and species, the concept expressed in a statement, the takers of the scales determine under what categories the species must be subsumed as they relate them to their own personal experiences. The categorization of the species under semantically broader concepts called genera in schema theory or their loadings on specific latent variables in factor analysis will take place if, and only if, the takers understand, apply, analyze, synthesize and evaluate the species by choosing one of the alternatives presented on the scale. In Khodadady and Dastgahian's (2015) words, the validity of any scale depends on its schemata (words) and species (statements) because these are the schemata and species which determine the genera (factors), and domain (the construct a scale measures) under investigation.

As mentioned before, Khodadady et al (2012) designed the ELTAS on the basis of their own personal experiences as English teachers as well as the characteristics they found in the literature along with those used in various schools and universities to determine the schemata and species of a domain known as teacher effectiveness. The scale consists of 639 schemata and 102 species to be related to EFL learners' classes within the fixed five choices the learners should make, i.e., disagree completely, disagree, have no idea, agree and completely agree. Khodadady et al did not, however, assign the species to any logical categories a priori as it is done by the advocates of macro structural approach. They argue that the validity of categories into which the species may fall, i.e., genera, should be established by the scale takers themselves as they relate the designers' schemata to

their own personal experiences within the context of specific species presented in the scales. Their argument is supported by research findings.

When Khodadady et al (2012), for example, administered the ELTAS to 1328 female grade three senior high school (G3SHS) students in Mashhad, Iran, and applied the Principal Axis Factoring (PAF) and Varimax with Kaiser Normalization (VKN) to their data, 94 statements loaded on eight factors, i.e., Qualified, Social, Stimulating, Organized, Proficient, Humanistic, Self-Confident, and Lenient. In other words, the domain of teacher effectiveness for female G3SHS students proved to consist of eight genera, 94 species, and 579 schemata. Their responses also showed that eight species and 60 schemata brought up in the ELTAS were irrelevant as far as their EFL teachers were concerned, providing further support for Khodadady's (2013) argument that schemata are individualistic in that the concepts they represent differ from individuals to individuals.

While a macro structural approach can be followed in physical sciences, it has a small role, if any, to play in social sciences. The advocates of this approach treat domains such as teacher effectiveness as a physical domain such as distance. As the domain of distance is subdivided into kilometers, meters and centimeters constituting the genera, species and schemata of distance, respectively, they believe they can do the same for psychological domains. The self-determination theory introduced by Deci and Ryan (1985), for example, divides the domain of motivation into two genera, intrinsic and extrinsic. According to Vallerand (1997), the theory and its two macro structurally postulated genera have been explored in over 800 publications to date.

Instead of starting with the macrostructural domain of motivation as postulated by scholars such as Deci and Ryan (1985), Khodadady and Ashrafborji (2013) [henceforth K&A], however, started with schemata involved in motivation and asked their learners to tell them why they learned English. They collected the answers and matched them with those available in the literature to develop their 25-statement Motivations Underlying English Language Learning Scale (MUELLS) to explore whether they would cluster together as distinct genera contributing collectively to a single domain. By administering the MUELLS to normal EFL learners they established three genera: Intrinsic, Extrinsic and Communicative. Since schemata, species and genera play a very important role in the microstructural analysis of domains, they will be discussed from two perspective, i.e., linguistically and cognitively. They will then be related to the domain of EFL motivation as measured by the MUELLS.

1.1. Linguistic Schemata, Species, Genera and Domains of MUELLS

Gardner (1983) offered eight criteria in order to determine whether an identified capacity qualifies as an intelligence, i.e., 1) potential isolation by brain damage, 2) the existence of idiot savants, prodigies, and other exceptional individuals, 3) having an identifiable core operation or set of operations,

4) having a distinct and identifiable developmental history, 5) an evolutionary history and evolutionary plausibility, 6) being empirically supported by tests, 7) being supported by psychometric findings, and 8) displaying susceptibility to encoding in a symbol system. The eighth criterion applies not only to intelligence but also to whatever concepts human beings can conceive of. King (2008), for example, offers "languages" as one of symbol systems in which intelligences must be encoded.

Following Khodadady (2013), it is argued that "language" per se is a macro schema which is too abstract to be captured by any test as the attempts to establish the validity of assumed "fields" have failed in studies dealing with the IELTS (e.g., Clapham, 1996). These are the schemata used by listeners, speakers, readers and writers which form languages. In other words, there are as many languages as there are topics such as intelligences. Shearer (1994), for example, designed the Multiple Intelligences Developmental Assessment Scales (MIDAS) and validated the eight intelligences identified by Gardner (1983), i.e., Interpersonal, Intrapersonal, Kinesthetic, Linguistic, Logical-Mathematical, Musical, Naturalist and Spatial. The very acceptance of eight instead of one intelligence implies that what each scale of the MIDAS measures as an intelligence is different from other scales. This difference must of necessity show itself in language.

The microstructural approach to schema theory provides the only sound rationale through which the existence of different languages used for different intelligences or other constructs such as motivation can be explained and validated via psychological measures. As concepts are expressed via cognitive schemata and then subsumed under species and genera of a specific cognitive domain, the words representing these concepts on given scales such as the MUELLS can be assigned to their species, genera and domains linguistically. Khodadady (2013) and Khodadady and Lagzian (2013) provided the present researcher with 122 codes through which the schemata comprising the MUELLS were analyzed linguistically.

Table 1 presents the linguistic schema genera and domains of the MUELLS. As can be seen, the scale has its own unique language which can be described in 237 schema tokens categorized under the broad semantic, syntactic and parasyntactic domains. The domains in turn consist of their genera. The semantic domain of the MUELLS, for example, comprises 19 adjective, three adverb, 33 noun and 54 verb genera tokens. Within a hierarchical system, the adjective genus of the MUELLS comprises five species of adjective schema types, i.e., agentive (speaking), dative (educated and satisfied), derivational (international, knowledgeable, negative, prestigious and social), simple (foreign, good, able, familiar and native) and superlative (closest). Future research must show whether the same types of adjective species have been used in other measures of motivation or they differ from each other in terms of their linguistic species.

Table 1. The linguistic schema genera and domains of the MUELLS

Domains		Tokens		Types	
		Frequency	Percent	Frequency	Percent
Semantic	Adjectives	19	8.0	16	13.7
	Adverbs	3	1.3	3	2.6
	Nouns	33	13.9	22	18.8
	Verbs	54	22.8	37	31.6
	Total	109	46	78	66.7
Syntactic	Conjunctions	12	5.1	5	4.3
	Determiners	22	9.3	5	4.3
	Prepositions	12	5.1	8	6.8
	Pronouns	48	20.3	9	7.7
	Syntactic verbs	10	4.2	5	4.3
Total	104	43.9	32	27.4	
Parasyntactic	Abbreviations	4	1.7	2	1.7
	Names	10	4.2	1	.9
	Para-adverbs	3	1.3	2	1.7
	Particles	7	3.0	1	.9
	Total	24	10.1	7	6.0
Total		237	100.0	116	100.0

Table 2. Schema tokens and types comprising 22 news articles (adapted from Khodadady, 2008)

Domain	Genera	Tokens		Types	
		Frequency	Percent	Frequency	Percent
Semantic	Nouns	3777	21.4	1156	35.9
	Verbs	2236	12.7	745	23.2
	Adjectives	1165	6.6	450	14
	Adverbs	179	1	118	3.7
Syntactic	Determiners	2256	12.8	59	1.8
	Prepositions	2472	14	49	1.5
	Pronouns	814	4.6	43	1.3
	Conjunctions	1188	6.7	39	1.2
	Auxiliaries	1133	6.4	12	0.4
Parasyntactic	Names	1399	7.9	343	10.7
	Numerals	181	1	74	2.3
	Para-adverbs	536	3	72	2.2
	Abbreviations	283	1.6	58	1.8
Total		17619		3218	

As it can be seen in Table 1 above, the highest number of schema tokens and types are verbs in genus, i.e., 54 and 37, respectively. In purely psychometric terms of analysis, these results show that the language used in the MUELLS is different from the language used in texts such as the textbook *Reading Media Texts: Iran-America Relations* (Khodadady, 1999b). Khodadady (2008) linguistically analyzed the 22 news articles comprising the textbook and reported the results presented in Table 2. As can be seen, in sharp contrast to the language of MUELLS, the majority of schema genera forming news articles are nouns. While 745 verb tokens

present actions and states brought up in news, 1156 nouns represent what the news was about.

1.2. Cognitive Schemata Constituting the MUELLS

One hundred sixteen concepts comprise the MUELLS which measures motivations underlying English language learning. They are semantic, syntactic and parasyntactic in domain. While analyzing each of the schemata comprising the linguistically established semantic, syntactic and parasyntactic domains is of value for a better understanding of the scale, the present researchers have confined

themselves to the cognitive analysis of just semantic schemata as Khodadady and Lagzian (2013) did in their study of a dentistry textbook. (The syntactic and parasyntactic schemata of the scale will be presented and discussed in a separate paper to limit the scope of the present.)

The very large number of verb schema types ($n=37$), compared to adjectives ($n=16$), adverbs ($n=3$) and nouns ($n=22$), shows that MUELLS is basically a state and action orientated scale of motivation. They bring up “being short of”, “becoming”, “being”, “broadening”, “climbing”, “communicating”, “considering”, “disappointing”, “encouraging”, “enjoying”, “expecting”, “failing”, “feeling”, “finding”, “getting”, “giving”, “having”, “hearing”, “helping”, “increasing”, “involving”, “knowing”, “learning”, “living”, “loving”, “making”, “overcoming”, “preferring”, “recognizing”, “seeing”, “speaking”, “studying”, “thinking” and “understanding”. Although these concepts have meanings of their own in isolation, they need to be employed with other concepts within 25 species in order to contribute to the domain of motivation as measured by the MUELLS.

The state verb “being short of”, for example, appears in species 3, “I feel I am short of something if I don't know a foreign language”. Along with species 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16, it forms the *Intrinsic* genus of MUELLS as established by 493 female learners of English in K&A's study. The present study was designed to test whether the same genus will be established by blind students (BSs) who learn English as part of their curriculum in junior and senior high schools where only BSs are admitted. Based on the microstructural approach of schema theory it is hypothesized that the genera forming BSs' MUELLS will differ in number and species due to their inability to interact with others visually.

2. Methodology

2.1. Participants

A total of 120, 58 female (48.3%) and 62 male (51.7%), blind students participated voluntarily in this study. Their age ranged from 12 to 21 (mean = 16.63, SD = 2.14). The majority of participants were born in Mashhad ($n = 80$, 66.7%) and the rest were from Bajestan, Bardaskan, Birjand, Bojnourd, Chenaran, Dargaz, Esfarayen, Gonabad, Jajarm, Kashmar, Khaff, Mashad, Neishaboar, Qaen, Qoochan, Taibad, Torbat Heidariyeh, Torbat Jam and Zahedan. Seventy seven (64.2%) were living in Mashhad and the rest were staying in the dormitory. They had registered at grades two ($n = 22$, 18.3%) and three ($n = 22$, 18.3%) junior high school and grades one, ($n = 28$, 23.3%), two ($n = 19$, 15.8%) and three ($n = 29$, 24.2%) senior high schools established as two specific centers for BSs in Mashhad. They were speaking Persian ($n = 116$, 96.7%), Turkish ($n = 2$, 1.7%) and Arabic ($n = 2$, 1.7%) as their mother language. Twenty participants had travelled abroad and visited Iraq, Saudi

Arabia, Syria, Turkey and Turkmenistan.

2.2. Instrumentation

Two instruments were employed in this study: a Demographic Scale and Motivations Underlying English Language Learning Scale.

2.2.1. Demographic Scale

Following K&A a Demographic Scale (DS) was developed to collect the participants' biodata. It contained seven open ended questions and multiple choice items related to their city of birth, age, gender, educational grade, travelling abroad, countries visited and mother language.

2.2.2. Motivations Underlying English Language Learning Scale

The Persian Motivations Underlying English Language Learning Scale (MUELLS) developed and validated by K&A was employed in this study. They collected 25 reasons expressed by the EFL learners out of which 20 matched with those reported by Benson (1991), Detaramani and Chan (1999), Dornyei and Csizer (2002), Margolis (2009), Moinvaziri (2008), Mori (2004), Mori and Gobel (2006), Noels, Pelletier, and Vallerand (2003), Schneider (2001), and Takahashi (2005). The remaining five statements were, however, expressed by K&A's EFL learners.

Each Persian statement on the MUELLS is brought up as the stem of a multiple choice item expressing a specific reason for learning EFL and requiring choosing an alternative from among seven common to all statements (Khodadady, 1999a). The first statement, for example, reads: “I think others expect me to know English”. Students have to decide whether they completely disagree, disagree, disagree somewhat, have no idea, agree somewhat, agree, or completely agree with the statement.

K&A administered the MUELLS to 493 female EFL learners in a semi-private English language institute in Mashhad, Iran. Based on Khodadady and Hashemi's (2011) suggestion they subjected the learners' responses to PAF and rotated the extracted factors with VKN to study the factorial structure of the MUELLS. Their results showed that three factors called Intrinsic, Extrinsic and Communicative underlie the normal EFL learners' motivation. They explained 51% of variance in the MUELLS and had the alpha reliability coefficients of .91, .82 and .80, respectively. The MUELLS itself was also highly reliable ($\alpha = .92$).

2.3. Procedures

A copy of the printed DS and MUELLS was submitted to the authorities of the junior as well as senior high school registering BSs only. Upon securing the official approval of school authorities and the students' agreement to participate in the study voluntarily, the second researcher attended all the classes in person and filled out the demographic scale and MUELLS by reading out the questions to the respondents one by one. Not only was each statement read as many times

as necessary but also enough time was given to each student to think and answer the questions. Based on the oral responses given by each participant, the researcher filled out DS and MUELLS. The data were collected in the academic year 2013-2014.

2.4. Data Analysis

The descriptive statistics of the 25 statements comprising the MUELLS was first calculated to determine how well they had functioned. For exploring the factorial structure of the scale the PAF was employed and the factors extracted were rotated via VKN. Following Tabachnick and Fidell (2001) the magnitude of .32 was adopted as the minimum acceptable loading of an item on a specific factor. According to these scholars, the minimum magnitude shows that the item shares ten percent of variance with the other items loading acceptably on the factor. If a statement loaded acceptably on two or more factors, its highest loading on a single factor was used to remove it from the list of other factors upon which it had lower but acceptable loadings as well. The initial eigenvalues of one and higher as well as the highest loadings on a single factor were adopted as the only criteria to determine what latent variables underlie the reasons for which BSs study English. The reliability of the MUELLS and its factors were estimated through Cronbach's

Alpha. The MUELLS as well as its factors were then correlated with each other to explore their go-togetherness. The descriptive, factorial and correlational analyses were all conducted via IBM SPSS Statistics 20 to test the hypotheses below.

- H1. The number of genera constituting BSs' MUELL will be different from that of normal students (NSs).
- H2. The genera underlying the BSs' MUELL will relate to each other differently.

3. Results

Table 3 presents the descriptive statistics of items comprising the MUELLS as well as the percentage of BSs who have disagreed (DA), had no idea (NI) and agreed (AG) with the species expressed in the 25 statements (Ss) comprising the scale. As can be seen, the mean score of the statements ranges from 5.87 (S6), "when I overcome the problems involved in learning English, it encourages me to learn more", to 2.03 (S20), "I can get reward from my parents/family." These mean scores have been obtained because the highest percentage of students have agreed (86%) and disagreed (88%) with statements six and 20, respectively.

Table 3. Descriptive statistics of the items comprising the MUELLS

Item	N	M	SD	Skew	Kurtosis	Disagree%	No Idea %	Agree %
1	120	5.28	1.506	-1.066	1.026	11	8	81
2	120	5.53	1.624	-1.102	.517	13	7	81
3	120	4.35	1.832	-.290	-.862	31	16	53
4	120	5.48	1.512	-1.029	.795	11	7	83
5	120	5.38	1.661	-.953	.289	13	13	74
6	120	5.87	1.263	-.940	.233	5	9	86
7	120	5.18	1.561	-.823	.352	13	15	72
8	120	5.63	1.461	-.835	.188	8	15	78
9	120	4.74	1.606	-.534	.073	14	31	55
10	120	5.34	1.756	-1.029	.318	15	7	78
11	120	5.74	1.464	-1.159	1.259	5	13	83
12	120	5.37	1.390	-1.104	1.677	9	8	83
13	120	5.43	1.383	-.917	1.192	5	17	78
14	120	5.21	1.577	-.652	-.186	15	14	71
15	120	5.29	1.547	-.875	.483	11	14	75
16	120	5.07	1.654	-.686	.007	14	18	68
17	120	5.71	1.446	-.985	.273	12	4	84
18	120	5.38	1.691	-.919	.178	12	15	73
19	120	4.11	2.041	-.071	-1.242	40	17	43
20	120	2.03	1.414	1.392	1.716	88	7	6
21	120	3.16	1.936	.620	-.676	64	13	23
22	120	3.63	2.012	.025	-1.358	49	12	39
23	120	5.08	1.761	-.795	-.138	18	11	72
24	120	3.88	2.038	.082	-1.196	46	16	38
25	120	3.89	2.061	.113	-1.247	49	14	37

The responses which BSs have, for example, given to statements six and 20 are very similar to those of NSs. Similar to BSs (86%), in response to statement six the highest percentage of the NSs (93%) have agreed that when they overcome the problems involved in learning English, it encourages them to learn more. Similarly, among the 25 items comprising the MUELLS, statement 20, “I can get reward from my parents/ family”, has elicited the highest percentage of disagreement from both NSs (82%) and BSs (88%).

BSs and NSs do, however, differ in terms of their degree of agreement with the statements other than six and 20. The second highest percentage of BSs (84%), for example, have agreed that they are learning English because it is an international language (S17). The highest percentage of NSs (93%) have, however, agreed not only with statement six, “overcoming the problems involved in learning English encourages them to learn more”, but also with statement eight, “speaking English gives me a very good feeling”.

Before analyzing the factorial structure of the MUELLS, the Kaiser–Meyer–Olkin (KMO) statistics was checked for sample adequacy as shown in Table 4. Because the obtained statistics is in 70s (.72) it indicates the data collected in this study are “middling” (Kaiser, 1974 as cited in DiLalla & Dollinger 2006, p. 250) and thus a common-factor model (Kaiser, 1970, 1974) can be followed. The KMO statistics obtained in this study is, however, much lower than that of K&A. This is because only 120 BSs had registered in the two centers in Mashhad. Four hundred and ninety three female learners of English did, nonetheless, take part in K&A’s study.

As it can also be seen in Table 2 above, Bartlett’s Test of Sphericity is significant ($\chi^2 = 766.133$, $df = 300$, $p < .001$), showing that the sample intercorrelation matrix did not come from a population in which it is an identity matrix and therefore factor analysis could be run on the data. Similar to the KMO statistic, the value obtained for the test of sphericity in this study is much lower than that of K&A’s ($\chi^2 = 6863.905$, $df = 300$, $p < .001$). The lower value obtained in this study does, however, enjoy the highest level of significance possible though it is estimated on a relatively smaller sample.

Table 5 presents the initial and extraction communalities of items comprising the MUELLS. As can be seen, the extraction communalities range from .287 (item 25), “I have to study English; otherwise, I cannot find a suitable job”,

to .579 (item 13), “It broadens my world view”. In the case of NSs, however, the communalities ranged between .21 (item 20), “I can get reward from my parents/family” and .71 (item 12), “It gives me a feeling of success”, indicating that the factors underlying the BSs and NSs’ motivation will be different.

Table 6 presents the percentage of rotation variance explained by the factors underlying 120 BSs’ reasons for learning English. As can be seen, the eight factors explain 42.925% of variance in the scale. The three factors extracted from NSs’ responses by K&A, however, explained 51% of variance in the scale. These results imply that as the number of factors extracted from statements comprising the MUELLS increases, the percentage of variance they explain in the scale decreases. This observation is not, however, supported in studies recruiting more participants (see the results reported by Khoadady, Fakhrabadi and Azar, 2012 and Khodadady and Dastgahian, 2015).

Table 7 presents the rotated factor matrix of MUELLS. As can be seen, 19 statements have loaded acceptably, i.e., .32 and higher, on only one factor, i.e., 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 17, 19, 20, 22, 24, and 25. Among these items six statements have, however, cross loaded on another factor as well, i.e., 3, 12, 16, 18, 21, and 23. The highest loadings of these items on a single factor were treated as their main contributions to that factor, and their cross-loadings on the other factor were considered noncontributory. Item 3, for example, loaded acceptably on factor 2 (.413) and factor 4 (.308). Since the loading on factor 2 was higher than the one on factor 4, item 3 was deleted from the list of items which constitute factor 4. These results thus *confirm* the first hypothesis that the number of genera constituting BSs’ MUELL will be different from that of NSs.

Table 8 presents the descriptive statistics as well as the reliability estimates of the factors underlying the MUELLS. As can be seen, the BSs’ mean score on the MUELLS is 121.77 whereas that of the NSs in K&A’s study was 130.08 (p. 5), indicating that the former in state schools are less motivated than the latter learning English in semi-private institutes. An analysis of standard deviations obtained on the scale for the BSs (17.79) and NSs (26.08) also show that the MUELLS could distinguish highly motivated NSs from the less motivated ones better than it did for BSs. It must, however, be mentioned that the number of NSs in K&A’s study (493) was four times more than the BSs (120).

Table 4. KMO and Bartlett’s Test

		This study	K&A
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.719	.944
Bartlett’s Test of Sphericity	Approx. Chi-Square	766.133	6863.905
	df	300	300
	Sig.	.000	.000

Table 5. Initial and extraction communalities of items comprising the MUELLS

Item	Initial	Extraction	Item	Initial	Extraction	Item	Initial	Extraction
1	.428	.483	10	.451	.489	19	.268	.332
2	.425	.413	11	.505	.478	20	.272	.366
3	.418	.438	12	.448	.466	21	.328	.314
4	.428	.418	13	.330	.579	22	.388	.370
5	.355	.351	14	.275	.431	23	.349	.403
6	.299	.570	15	.415	.441	24	.311	.472
7	.407	.368	16	.547	.549	25	.269	.287
8	.486	.512	17	.306	.363			
9	.448	.375	18	.390	.464			

Table 6. Total and communicative (C) variance (V) explained by factors

F	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of V	CV%	Total	% of V	CV%	Total	% of V	CV %
1	5.363	21.451	21.451	4.810	19.242	19.242	2.648	10.593	10.593
2	1.795	7.181	28.632	1.197	4.789	24.030	1.973	7.893	18.485
3	1.629	6.516	35.147	1.027	4.106	28.137	1.211	4.845	23.331
4	1.439	5.755	40.902	.873	3.491	31.628	1.146	4.582	27.913
5	1.383	5.530	46.432	.827	3.310	34.938	1.131	4.524	32.438
6	1.322	5.290	51.722	.752	3.007	37.945	.970	3.878	36.316
7	1.172	4.689	56.411	.684	2.736	40.681	.837	3.348	39.664
8	1.117	4.469	60.880	.562	2.246	42.927	.816	3.264	42.927

Table 7. Rotated Factor Matrix^a

Items	Factors							
	1	2	3	4	5	6	7	8
1	.018	.043	.620	.133	.066	.067	.168	.204
2	.114	.562	.144	.123	.163	.120	.048	.071
3	.298	.413	-.094	.308	.134	.217	-.099	.020
4	.248	.317	.263	.261	.178	.055	-.184	.224
5	.194	.022	.082	.548	.004	-.020	.041	.058
6	.164	.120	.107	.060	.041	-.001	.018	.716
7	.541	.186	.019	-.024	.025	.060	.164	.092
8	.654	.174	.130	.019	-.075	-.022	.144	.098
9	.540	-.095	-.048	.180	.196	-.035	-.016	.011
10	.428	.253	-.018	.297	.215	-.188	-.164	.214
11	.253	.581	.204	.173	-.051	-.042	.021	.015
12	.465	.343	.233	.189	-.172	.024	-.022	-.108
13	.296	.082	.602	-.128	.178	-.071	-.209	-.158
14	.157	.048	.018	.079	.063	-.008	.627	-.008
15	.610	.184	.108	.123	.032	.086	.001	.016
16	.563	.084	.169	.357	.041	.013	.181	.187
17	.075	.561	-.034	-.120	.047	.024	.114	.104
18	.133	.368	.019	.386	.295	-.181	.127	-.159
19	.192	.120	.059	.111	-.012	.497	-.133	.008
20	-.176	-.141	-.019	-.151	.002	.539	.032	-.024
21	.054	.308	.036	.003	.154	.435	.034	.029
22	.190	.134	.134	.063	.480	.227	-.031	.104
23	.055	.302	.398	.299	-.101	.123	.136	.130
24	-.061	.028	.014	.018	.671	.007	.129	-.010
25	.079	.194	.087	-.043	.290	-.134	.361	.044

Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 9 iterations.

Table 8. Descriptive statistics and reliability estimates of the factors underlying the MUELLS (N = 120)

No	No of Items	Name	Mean	SD	Skewness	Kurtosis	Alpha
1	7	Intrinsic	36.62	7.294	-1.249	2.956	0.79
2	5	Self-Satisfying	26.82	5.306	-1.074	1.757	0.69
3	3	Other-Satisfying	15.79	3.368	-.966	1.577	0.54
4	2	Communicative	10.76	2.631	-.636	-.230	0.37
5	2	Self-Enhancing	7.52	3.310	.108	-.779	0.50
6	3	Extrinsic	9.30	3.714	.341	-.132	0.42
7	2	Socializing	9.10	2.923	-.143	-.592	0.42
8	1	Self-Encouraging	5.87	1.263	-.940	.233	-
	25	MUELLS	121.77	17.757	-.629	1.344	0.81

Table 9. Correlations between the MUELLS and its underlying factors (N = 120)

Scale and Factors	1	2	3	4	5	6	7	8
MUELLS	.789**	.777**	.559**	.543**	.468**	.373**	.407**	.355**
Intrinsic	1	.507**	.331**	.387**	.162	.095	.223*	.274**
Self-Satisfying	.507**	1	.354**	.413**	.232*	.246**	.177	.252**
Other-Satisfying	.331**	.354**	1	.224*	.148	.136	.144	.199*
Communicative	.387**	.413**	.224*	1	.195*	-.030	.209*	.076
Self-Enhancing	.162	.232*	.148	.195*	1	.191*	.241**	.119
Extrinsic	.095	.246**	.136	-.030	.191*	1	-.056	.050
Socializing	.223*	.177	.144	.209*	.241**	-.056	1	.090
Self-Encouraging	.274**	.252**	.199*	.076	.119	.050	.090	1

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

The MUELLS provides a less reliable measure of BSs' motivations in schools ($\alpha = .81$), than it does for NSs ($\alpha = .92$) in semi-private language institutes. The same holds true for the factors underlying the scale for both groups. As the first LV underlying the NSs' MUELLS, the *Intrinsic* factor, for example, enjoys a very high level of reliability ($\alpha = .91$) while the reliability of the same factor for BSs is relatively lower ($\alpha = .79$). The low reliability estimates obtained in this study are, however, justified for two reasons. First, the number of BSs was less than NSs. Secondly, the items loading on NSs' first factor were far more in number than those of the BSs, i.e., 16 vs. 7.

Table 9 presents the correlations between the MUELLS and its underlying factors. As can be seen, among the 28 coefficients obtained between the eight factors underlying the scale, 16 are significant. These results confirm the second hypothesis that *the genera underlying the BSs' MUELL will relate to each other differently*. Among the factors, the *Intrinsic* and *Self-Satisfying* correlate the highest with each other ($r = .51$, $p < .01$). The second and third highest correlations among the factors belong to that of *Self-Satisfying* and *Communicative* ($r = .41$, $p < .01$) and *Intrinsic* and *Communicative* ($r = .39$, $p < .01$) factors, respectively. These results show that the BSs in schools in Mashhad learn the English language for eight genera among which three show the strongest relationship with each other,

i.e., to satisfy themselves, pursue knowledge, and communicate with foreigners.

4. Discussions

The results obtained in this study show that compared to the three genera categorizing the reasons for which NSs learn English, i.e., *Intrinsic*, *Extrinsic* and *Communicative* factors, those of BSs consist of eight, i.e., *Self-Satisfying*, *Self-Assuring*, *Other-Satisfying*, *Communicative*, *Self-Enhancing*, *Extrinsic*, *Socializing*, and *Self-Encouraging*. These findings support the microstructural approach of schema theory postulating the dependence of motivation domain and its constituting genera on the schemata of the individuals who take the MUELLS as they relate its schemata to their personal lives within its 25 species.

The genera comprising the domain of motivation for English language learning differs from NSs to BSs because of their constituting species. Out of 16 species comprising NSs' *Intrinsic* genus, for example, eight loaded acceptably on the same genus, i.e., 7, 8, 9, 10, 12, 15, and 16. Speaking English gives intrinsically motivated BSs very good feelings including satisfaction and success. They liken learning English to a mountain top they love to climb to, enjoy

watching natives speak English and consider its being learned necessary. BSs' Intrinsic genus correlates the highest with their second genus, *Self-Satisfying* ($r = .51, p < .01$), indicating that the more intrinsically oriented the BSs are in their English learning, the more self-satisfied they become.

As the second factor underlying BSs' MUELLS, the *Self-Satisfying* genus consists of five species, i.e., 2, 3, 4, 11, and 17. While the first four species contributed to the NSs' Intrinsic genus, the last forms a part of their *Communicative* genus in K&A's study. The *Self-Satisfying* BSs learn English because it is an international language which helps them not only become more knowledgeable but also get a prestigious job. These students feel they are short of something if they don't know a foreign language and prefer to be recognized as a person who does speak a foreign language.

Species 1, 13 and 23 comprise the third factor underlying BSs' MUELLS, called *Other-Satisfying* Genus in this study. While the first two species loaded on NSs' Intrinsic genus, the last contributed to their Extrinsic genus in K&A's study. *Other-Satisfying* BSs think that others expect them to know English. They also believe that learning English broadens their world view and increases their social status and respect. The *Other-Satisfying* Genus correlates the highest with *Self-Satisfying* genus ($r = .35, p < .01$), indicating that the more other-satisfying BSs are in their learning English the more self-satisfying they become in orientation.

As the fourth factor underlying BSs' MUELLS, the *Communicative* genus consists of species 5 and 18 contributing to NSs' Intrinsic and Communicative genera, respectively. BSs become communicatively motivated when they enjoy being familiar with English speaking societies and how they live. They learn English because it helps them communicate with foreigners and understand their culture. *Communicative* genus is followed by BSs because they become first and foremost *Self-Satisfying* in their learning English ($r = .41, p < .01$). Then they resort to the same genus to make their English learning *Intrinsic* ($r = .387, p < .01$) and *Other-Satisfying* ($r = .224, p < .05$).

Similar to the *Communicative* genus, two species form the fifth factor of BSs' MUELLS, i.e., 22 and 24, called *Self-Enhancing* Genus in this study. These two species contributed to NSs' Extrinsic genus in K&A's study. *Self-Enhancing* BSs think that they will be considered as a poorly educated person if they don't know English. And it will have a negative impact on their life if they don't learn the language. The genus enjoys its strongest relationship with the *Socializing* genus ($r = .241, p < .01$) to be discussed shortly. It does not, however, show any significant relationship with *Intrinsic* ($r = .162, ns$) *Other-Satisfying* ($r = .148, ns$), and *Self-Encouraging* ($r = .119, ns$) genera.

Out of seven species constituting NSs' *Extrinsic* genus in K&A's study, three constitute BSs' Extrinsic factor, i.e., species 19, 20 and 21. BSs follow the *Extrinsic* genus assuming that they can get reward from their parents/family when they learn English, feel superior to others by being able to speak English and disappoint those closest to them if they fail to learn English. Contrary to the present researchers'

expectations, BSs' *Extrinsic* genus relates significantly to *Self-Satisfying* ($r = .246, p < .01$) and *Self-Enhancing* ($r = .191, p < .05$) genera. However, it shows no significant relationship with *Other-Satisfying* ($r = .136, ns$), *Intrinsic* ($r = .095, ns$), *Self-Encouraging* ($r = .050, ns$), *Communicative* ($r = -.030, ns$) and *Socializing* ($r = -.056, ns$) genera, emphasizing the uniqueness of BSs' *Extrinsic* genus.

While BSs' *Extrinsic* genus proves to be more self oriented, i.e., *Self-Satisfying* and *Self-Enhancing*, than other oriented, i.e., *Other-satisfying*, *Communicative* and *Socializing*, NSs' *Extrinsic* genus of religious orientations relates to self-oriented genera in the opposite direction. Khodadady and Bagheri (2012), for example, validated the 33-item Persian ROS with 536 normal undergraduate and graduate university students and extracted seven factors, i.e., Inspirational, Intrinsic, Social, Concessional, Theo-pacific, Humanitarian and Sacrificial, from their responses via PAF and VKN. As a subgenus of extrinsic factor, their *Social* genus correlated significantly with the *Intrinsic* genus ($r = .56, p < .01$) [p. 244]. The administration of the ROS to blind students may help explore these relationships further.

Species 14 and 25 loading acceptably on NSs' Intrinsic and Extrinsic genera, respectively, loaded acceptably on the seventh factor called *Socializing* in this study. Socializing BSs learn English in order to make friends with foreigners. They believe that they have to study English; otherwise, they cannot find a suitable job. *Socializing* genus seems to be more of an idealized concept than a realistic objective. This is because the two species loading on this genus seem to be logically unrelated to each other. The composition of the genus might, however, explain the interesting patterns of its convergent and divergent validities.

The convergent validity of the *Socializing* Genus is established by its significant relationship with *Self-Enhancing* ($r = .241, p < .01$), *Intrinsic* ($r = .223, p < .05$), and *Communicative* ($r = .209, p < .05$) genera, supporting its idealized nature through which BSs hope to make friends with foreigners and find a suitable job as Khodadady and Navari's (2012) study show similar orientation pursued in establishing foreign language identity. However, the divergent validity of *Socializing* Genus makes it irrelevant to *Self-Satisfying* ($r = .177, ns$), *Other-Satisfying* ($r = .144, ns$), *Self-Encouraging* ($r = .090, ns$) and *Extrinsic* ($r = -.056, ns$) genera.

Khodadady and Navari (2012) developed a 30-species Foreign Language Identity Scale (FLIS) and administered it to 470 female participants enrolled in English courses offered at advanced levels in private institutes. Similar to this study, they applied PAF and VKN to their data and extracted six genera called idealized society, idealized communication, idealized means, idealized opportunities, global connection, and global self-expression. By analyzing the relationships among the six genera they concluded.

With the exception of the last, the first five factors revealed strong interrelationships among themselves and thus showed that female Iranians in Mashhad learn English by creating an identity in an idealized society in which they

can acquire the means to communicate best and find the opportunity they lack, reveal and improve the personality they possess, get better jobs and connect to the rest of the world. The foreign language identity, however, seems to disappear when the learners go abroad and study at universities (p. 30).

One of the 16 species constituting NSs' *Intrinsic* genus loaded acceptably on BSs' last genus, i.e., 6, called *Self-Encouraging* genus. It is the only genus which consists of one species highlighting BSs' view of learning English as a problem whose overcoming encourages them more and more. The *Self-Encouraging* genus of the MUELLS is not the only factor upon which just one species loads acceptably. Research findings show that most psychological measures share the same feature.

Khodadady and Moosavi (2014), for example, administered the Persian version of 24-species Spiritual Intelligence Self-Report Inventory (SISRI) designed by King (2008) to 344 G3SHS students and extracted seven genera by employing PAF and VKN, i.e., Purposive, Transcending, Contemplative, Meta-conscious, Theo-meditative, Theorizing, and Visionary. Among these factors, four consist of just one species, i.e., Contemplative, Theo-meditative, Theorizing, and Visionary. One-species genera do bring up factors whose constituting schemata need more research in order to be expanded. Future research should, for example show whether new species could be collected from interviewing BSs themselves and whether any of these new species would load on the *Self-Encouraging* genus.

However, in spite of being single species in structure the *Self-Encouraging* genus enjoys convergent and divergent validity. It correlates significantly with *Intrinsic* ($r = .274, p < .01$), *Self-Satisfying* ($r = .252, p < .01$) and *Other-Satisfying* ($r = .199, p < .05$) genera, indicating that the more self-encouraging the BSs are, the more intrinsic, self satisfying and other-satisfying orientations they seek in their English language learning. The *Self-Encouraging* genus does not correlate significantly with *Self-Enhancing* ($r = .119, ns$), *Socializing* ($r = .090, ns$), *Communicative* ($r = .076, ns$) and *Extrinsic* ($r = .050, ns$) genera to establish its divergent validity. Future research must show whether the genera underlying the MUELLS relate significantly to English language achievement and proficiency.

5. Conclusions

The validation of MUELLS with BSs shows that they differ from NSs not only physically but also motivationally. While NSs' domain of motivation consists of three genera, it increases to eight for BSs filling a gap in the literature focusing primarily on NSs. Motivational theories, according to Ardasheva, Tong and Tretter (2012), "seek to explain why people do what they do" (p. 2). This study, however, confined motivation to the domain of foreign language and showed that although the BSs must learn English as part of their school curriculum in Iran they commit themselves to it

because they want to get intrinsically and extrinsically motivated, satisfy themselves and others, communicate and socialize with English speakers and enhance as well as encourage themselves as valuable members of their community.

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