

Does religious orientation relate to school and english language achievement in secondary education?

Abstract

This study attempted to explore whether religious orientation relates significantly to school and English language achievement at grade four in secondary education in Iran where educational objectives are defined in terms of religion. To this end, a Shia Ithna Ashari Religious Orientation Scale (SIAROS) was administered to 453 pre-university or grade four senior high school (G4SHS) students and their responses were subjected to factor analysis. The results showed that eight factors underlie the scale. The students also took a schema-based cloze multiple choice item test (S-Test) which was developed on the reading passages of the English textbook they had covered during the school year. Correlating the students' GPAs as well as their scores on the S-Test with the SIAROS associated the domain and its factors neither with the students' school nor with English language achievement. The students' scores on Grade Three English Final Examination (G3FEE) held nationally, however, correlated significantly but *negatively* with the domain and its Social, Ceremonial and Sacrificial factors. The Inquisitive and Charitable factors did though correlate significantly and *positively* with the G3FEE. The results are discussed and suggestions are made for future research.

Keywords: Religious orientation, schema theory, secondary education, achievement

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Introduction

The educational objectives of secondary education in Iran are defined in terms of their relationship with Islam in general and its Holy Scripture (i.e., the *Quran*) in particular. They are categorized into six primary macro objectives (i.e., religious, moral, scientific and educational, cultural and artistic, political, and economic) and six secondary macro objectives (i.e., Persian language and literature and Arabic language, basic sciences of mathematics, physics, biology, chemistry and geology, social sciences, psychology, arts and aesthetics, sports and health). The primary and secondary macro objectives are also subcategorized into micro objectives or goals. As the third primary macro objective, the scientific and educational activities should, for example, be geared towards achieving four goals the first of which is to help the students "to learn Arabic at a level to understand some of the surahs [chapters] in the *Quran*, common supplications [such as Komail] and the supplications offered after salats [five obligatory prayers offered per day]". Similarly, the third goal of the secondary macro objective (i.e., basic sciences of mathematics, physics, biology, chemistry and geology) is to lead the students to realize that "nature is created by God and is one of His signs".

Iranian secondary education also requires offering foreign languages such as English as a school subject "within the optional framework of syllabus to stabilize and reinforce the Iranian-Islamic identity".² All primary and secondary macro objectives and their constituting goals form high school syllabus because they are in accordance with the law passed by the Iranian parliament in 1987. "The most 'sacred' mission of schools", according to the law, is "to educate the 'new' Muslim, to become "a virtuous believer, conscientious, and engaged in the service of the Islamic society"^{3,4}

As the primary and secondary objectives described above show, religion plays a key role in Iranian high schools. Surprisingly,

however, few scholars have attempted to find out whether there is any significant relationship between religious orientation and those objectives. The present study has, therefore, been designed to fill the gap. It investigates whether religionizing secondary education has helped secure school and English language achievement. Although the study was conducted within an Iranian context, it has international relevance and application. According to Beaman⁵ "Unfortunately, the study of religion has generally not occupied a central place in social science, and so we find ourselves in a world in which religion is playing a central role with a limited ability to draw on social scientific research and insights".

Although some psychological measures have recently been developed to measure religious orientation, their designers have largely approached religion from a top-down or macrostructural perspective. It is based on the assumption that when individuals come across the word "religion" in a text such as the present one it activates a specific type of mental information which has its roots in their personal experiences. It is commonly referred to as background knowledge or schema in education and cognitive psychology. Macrostructuralists believe that the readers' schema representing the word "religion" is fairly stable and stays fixed during their life time. For this very reason, they can read and understand whatever texts dealing with this particular schema.

Carrell,⁶ for example, argued that the readers will understand the schema brought up as the main input in a specific text if and only if, their schema is "compatible with the input information". Almost all scholars in various fields of knowledge agree with Carrell's view.⁷⁻⁹ The view referred to as Macrostructural Approach to Schema theory (MACAST)¹⁰⁻¹³ has, however, been put to validity analyses

The psychologists Allport and Ross,¹⁴ for example, adopted a MACAST perspective when they argued that individuals are

either intrinsically or extrinsically oriented in their religion. They maintained that while intrinsic believers go “to church to thank God, to acknowledge His glory, and to ask His guidance”, the extrinsic ones go there “for what they can get. Their interest in the church is to run it or exploit it rather than to serve it” (p. 434). To support their hypothesis Allport and Ross developed a Religious Orientation Scale (ROS) which consisted of 9 intrinsic items and 11 extrinsic ones.

Allport and Ross’ MACAST-based bipolar approach to religion was, however, rendered three dimensional by some scholars. Batson,¹⁵ for example, argued that “there are individuals who orient to religion as a quest. These persons view religion as an endless process of probing and questioning generated by the tensions, contradictions, and tragedies in their own lives and in society”, i.e., quest orientation. Batson and Ventis,¹⁶ therefore developed a number of items to measure it along with those of intrinsic and extrinsic orientations.

Some scholars have, however, challenged the MACAST-based view of religion from theoretical and psychometric perspectives.^{1, 7, 18–23} Reiss,²⁴ for example, argued that the model upon which various ROSs are developed is too simplistic because it basically reduces religious motivation to two or three categories without resorting to a strong theory. Khodadady¹⁰ agreed with Reiss and believed that instead of MACAST, the Microstructural Approach to Schema Theory (MICAST) must be followed because it provides researchers with a sound rationale through which reading comprehension of all texts including the ROSs can be not only explained but also measured psychometrically.

In contrast to the MICAST, the MACAST neither explains nor measures religious orientation because its followers either avoid to define it objectively or approach it idiosyncratically. Nowhere in their paper Allport and Ross,¹⁴ for example, offered any definition for religious orientation. Allport²⁵ himself, however, believed that “both prejudice and religion are subjective [emphasis added] formulations within the personal life. One of these formulations (the extrinsic) is entirely compatible with prejudice; the other (the intrinsic) rules out enmity, contempt and bigotry”. In other words, Allport and Ross and their followers believed that religious orientation is a universal and subjective construct which consists of only two reverse factors, i.e., intrinsic and extrinsic.

In order to find out whether Allport and Ross¹⁴ bipolar approach towards religious orientation stands empirical validation Brewczynski and MacDonald²⁶ translated the 21-item ROS into Polish and administered it to 303 Catholic Polish university students. The subjecting of their data to the structural equation modeling showed that their participants’ religion comprises not two but three factors called intrinsic, personal extrinsic and social extrinsic. Similarly, Khodadady and Golparvar²⁷ translated the ROS into Persian and administered it to 329 Muslim undergraduate university students in Mashhad, Iran, to find out whether religious orientation is either intrinsic or extrinsic.

The present researchers subjected Khodadady and Golparvar’s²⁷ data to Principal Axis Factoring (PAF) and rotated the extracted factors via Varimax with Kaiser Normalization (VKN). The adoption of factors with eigenvalues of 1 and higher and removing items which had acceptable loadings on more than one factor showed that out of 21 items, 14 loaded on *four* factors. Brewczynski and MacDonald²⁶ followed Byrne and Watkins²⁸ and traced the difference in the findings “to problems of bias and translatability of measures into other languages”. The present researchers, however, believe that the

MICAST explains the differences in terms of respondents’ schemata on the one hand and the schemata and items comprising the ROS on the other. While the MACAST adopts the ROS as a single schema, the MICAST treats each and every word constituting the ROS as a schema.

In their attempt to develop a religious orientation scale which addresses the Shia Ithna Ashari Islam as the main religion practiced by the majority of Iranians, Khodadady and Bagheri,^{29,30} for example, administered 21-Item ROS translated by Khodadady and Golparvar²⁷ to undergraduate university students and national and international pilgrims to Imam Reza shrine in Mashhad and asked them to comment on its content and add whatever items they thought was needed to reflect their religious orientation. Based on the respondents’ oral comments and written responses Khodadady and Bagheri³⁰ deleted one of the 21 items and added 14 new ones to the ROS and administered the 44-item ROS to 749 pilgrims to explore its validity. To differentiate the two scales from each other, the 44-item ROS is named Shia Ithna Ashari Religious Orientation Scale (SIAROS) in the present study.

A MICAST-based analysis of the 21-item ROS and 44-item SIAROS shows that the two scales differ from each other in terms of their constituting word types representing cognitive species. The three species “mosque”, “religion” and “religious”, for example, play a key role in the former because each of them occurs six times in the scale and thus has the highest token. In contrast, the species “religious”, “religion” and “life” are of the first, second and third highest importance in the latter because they have tokens of 12, 8, and 7, respectively. Although the species “religion” and “religious” are common to both scales, they contribute to different cognitive genera by combining with different species. They do, for example, relate to nine species which contribute to the SIAROS only, i.e., Eid Ghadir, Eid Qurban, Islam, Khoms, Komeil, Muharram, Qadr, Safar, and Zakat.

In addition to adopting schemata as the main constituents of scales,^{31,32} the MICAST emphasizes the fact that the designers of scales combine their own species as the smallest taxa of schemata with each other in given tokens to create genera linguistically and psychometrically referred to sentences or items. Then they combine the genera with each other logically or based on their personal ideology to create certain cognitive families commonly known as subscales or factors. The MICAST-based analysis of the 21-item Persian ROS, for example, shows that Allport and Ross¹⁴ and Feagin³³ employed 165 species to write 21 genera and then assigned 9 and 12 of these genera to intrinsic and extrinsic families, respectively. In other words the species as the smallest taxon of schema combine with each other to create broader taxa called genera, families, orders, classes, phyla, kingdoms and domain. They were originally established by Linnaeus.³⁴

The MICAST also highlights the premise that the designers’ ideological assignment of species represented by items to specific factors to represent their cognitive genera of a specific domain such as religious orientation measured by the ROS, rarely represents those of scale takers because the takers’ schemata differ from those of designers. The present researchers, therefore, believe that these premises do explain why Allport and Ross¹⁴ and Feagin’s³³ conceptualization of religious orientation as a cognitive domain consisting of 21 genera and two families changes to a domain of 12 genera and three families for Catholic students in Poland and 14 species and four genera for Shia Ithna Ashari Muslim students in Iran.

To explore the validity of premises brought up above Dastgahian and Khodadady³⁵ administered the 44-item SIAROS to 453 G4SHS students in Mashhad, Iran and subjected their responses to the PAF and VKN. The factor analysis of the data showed that instead of 44 items, the students' domain of Shia Ithna Ashari religious orientation consists of 38 items. They had loaded acceptably on eight factors representing social, inspirational, observant, sacrificial, humanitarian, theo-pacific, inquisitive and charitable genera, indicating that the validity of religious orientation as a cognitive domain depends on the scale through which it is measured, its designers and takers and the statistical methods and procedures adopted and followed in the process of validation. The present researchers believe that the validity of G4SHS students' Shia Ithna Ashari religious orientation can be improved if its constituting genera are chosen by removing the items which load acceptably on more than one factor (i.e., cross loading items).

Dastgahian and Khodadady³⁵ for example, wrote "if any sentence loaded acceptably on more than one factor, its highest positive loading was adopted as an evidence of its unique contribution to the factor upon which it had loaded and its lower cross loadings were removed from the list of sentences loading acceptably on other factors". King,³⁶ however, argued "items which cross-load are not desirable, as they have been designed as indicators of one particular capacity rather than many". King was, therefore, followed in this study and items having more than one acceptable loading on two or more factors were removed from the structure of the eight factors established by Dastgahian and Khodadady.

In addition to removing cross loading items from the structure of genera constituting the domain of Shia Ithna Ashari religious orientation measured by the SIAROS, this study was designed to address three research questions? 1) Do G4SHS students' revised Shia Ithna Ashari religious domain and its eight constituting genera stay reliable when the items with more than one acceptable loading on more than one factor are removed? 2) Do the domain and genera of Shia Ithna Ashari religious orientation correlate significantly with each other? And finally, 3) do the domain and families of Shia Ithna Ashari religious orientation correlate significantly with the school achievement measured by GPA and English language achievement measured by Grade Three Final English Examination on the one hand and S-Tests on the other?

Methodology

Participants

A total of 453, 362 female (79.9%) and 91 male (20.1%), G4SHS students participated voluntarily in this study. Their age ranged between 15 and 20 (mean=17.44, SD=.58). They had registered as full time students in four public schools majoring in sciences (n=222, 49.0%), mathematics (n=178, 39.3%), humanities (n=39, 8.6%) and vocational and technical branch (n=14, 3.1%). They spoke Persian (n=445, 98.2%), Turkish (n=6, 1.3%), Kurdish (n=1, .2%), and Lori (n=1, .2%) as their mother language. Among the participants, 147 agreed to take the S-Test described in the next section as well.

Instruments

Two instruments were employed in this study. The 44-item Shia Ithna Ashari Religious Orientation Scale (SIAROS) compiled and developed by Khodadady and Bagheri,³⁰ and Schema-Based Close Multiple-Choice Item Test (S-Test) developed by Khodadady and Ghergloo.³⁷ They provide objective measures of the participants'

religious orientation and English language achievement, respectively. Furthermore, some of these participants' GPAs as well as their scores on Grade Three Final English Examination were obtained from their schools to address the research questions raised in the study.

The Persian SIAROS consisted of 44 items (given in [Appendix](#)). The clause "it is necessary and important" was provided as a common condition for all the items one of which read "to participate in mourning ceremonies particularly in the months of Muharram and Safar". The students were required to rate the items on a five-point Likert scale, i.e., 1) disagree strongly, 2) disagree, 3) have any idea, 4) agree and 5) agree strongly. Dastgahian and Khodadady's³⁵ results showed that the SIAROS was a highly reliable measure of G4SHS students' religious orientation (i.e., $\alpha = .91$). Among the eight factors extracted from the scale, the first and second representing the families of Social and Inspirational religiousness proved to be the most reliable (i.e., $\alpha = .88$). The alpha reliability coefficients of the remaining six factors ranged from .81 (humanitarian) to .24 (Inquisitive). The inquisitive family had the lowest level of reliability due to its being non-religious as reflected by one of its three constituting genera (i.e., It is important and necessary to lead a moral life without attaching any importance to what religion one believes.). The genus correlates negatively but significantly with social ($r = -.156, p < .01$), inspirational ($r = -.196, p < .01$) and sacrificial ($r = -.122, p < .01$) families.

To have an objective measure of English language achievement, Khodadady and Ghergloo's³⁷ S-Test was employed. By resorting to the MICAST they had parsed, codified and statistically analyzed the species comprising the reading passages of the textbook "English 1 and 2, Pre-university Grade: Common Course for All Fields"³⁸ taught to G4SHS students nationally. Based on the analysis they developed 90 items on the passages. Unlike traditional Cloze Multiple Choice Items (MCIs) whose alternatives are chosen subjectively or intuitively, the alternatives of schema based close MCIs have semantic, syntactic and discursal relationships with the keyed response.^{10,12} The administration of the S-Test to 283 G4SHS students by Khodadady and Ghergloo showed that it was a reliable measure of content based English language achievement, i.e., $\alpha = .75$.

In addition to S-Test, the participants' scores on the written Grade Three Final English Examination (G3FEE) were obtained to explore the relationship between religious orientation and English language achievement further. It consists of fill-in-the-blank items, traditional MCIs, short answer and open-ended questions related to visual stimuli such as pictures and matching items. The G3FEE is marked by two teachers and the total score is reported out of 20. The cut off score of 10 and higher determine whether the test takers have learned the textbook taught during the school year and thus passed the English course successfully.

Procedures

Out of 453 G4SHS students who took part in Dastgahian and Khodadady's³⁵ study and completed the SIAROS, 147 had registered in senior high schools in which the second author of this study taught "English 1 and 2, Pre-university Grade: Common Course for All Fields" (Birjandi, Sarab & Samimi, 2012) as the course book. After taking the SIAROS, she related the objectives of the study to these students and asked them to take the S-Test voluntarily as well. Upon securing their agreement, she administered it in one session two weeks after they filled out the SIAROS.

In order to study the linguistic and cognitive structure of SIAROS and "English 1 and 2, Pre-university Grade: Common Course for All

Fields³⁸ Khodadady's³⁹ 125 codes were employed and all the species tokens constituting the two texts were parsed and codified. The four-digit codes quantify language as a domain which consists of three kingdoms. The first left digit of the codes assigns a given species to 1) semantic, 2) syntactic or 3) parasyntactic kingdom if it stands for a cognitive, linguistic or para-linguistic concept such as "religion", "it", and "*Quran*", respectively.

The second left digit of each code represents the genera of each kingdom. The semantic kingdom, for example consists of adjective, adverb, noun and verb families to which the digits 11, 12, 13 and 14 refer, respectively. Finally, the third and fourth digits together specify the genera of each species. The adjective family of semantic kingdom (i.e., 11), for example consists of various genera. The digits 10, 30, 50 and 70 in the codes 1110, 1130, 1140, 1150 and 1170 assigned to "underlying", "everyday", "deprived", "religious" and "happy" showed that they were agentive, complex, dative, derivational and simple adjectives, respectively.

Data analysis

Since factor analysis is preferable to principal components analysis,⁴⁰ PAF and VKN were employed to extract the factors underlying the SIAROS. The eigenvalues of one and higher were used to determine the number of factors underlying the SIAROS.

Following Tabachnick and Fidell⁴¹ the magnitude of .32 was adopted as the minimum acceptable loading on the factors and items loading acceptably on more than one factor were all removed from their structure. King³⁶ was also followed and Cronbach's Alpha was employed to determine the reliability of the SIAROS, its underlying factors and S-Test. Based on Pallant's⁴² suggestion Pearson correlations were also used to address the relationship between the domains and genera measured by the SIAROS and S-Test. The IBM SPSS Statistics 23.0 was utilized to run all statistical analyses.

Results

The removal of cross-loading items from among 38 items which had loaded acceptably on eight factors in Dastgahian and Khodadady's³⁵ study reduced the number of items to 26 (Table 1). The subjection of the scale and its underlying factors to reliability analysis answered the *first* research question and showed that not only the 26-item SIAROS represents a highly reliable cognitive domain of Shia Ithna Ashari religious orientation (i.e., $\alpha=.88$), but also two of its constituting factors do the same for the Inspirational and Ceremonial families (i.e., .82 and .80, respectively). The remaining families enjoy "moderate"⁴³ (Salvucci, Walter, Conley, Fink, & Saba, 1997, p. 115) reliability because their alpha coefficients fall between .53 (Charitable) and .79 (Social).

Table 1 Factor Loadings (L) of Genera (G) and Reliability Coefficients (α) of Families (F) Constituting the Domain (D) of Shia Ithna Ashari Religious Orientation (n=453)

| Taxa | It is necessary and important ... | α | L |
|------|--|----------|------|
| F | Social | 0.79 | |
| G1 | To consider mosques as the most important places where good social relationships are formed. | | .557 |
| G2 | To become a member of mosque to establish oneself in the community. | | .543 |
| G3 | To spend periods of time in private religious thought and meditation. | | .531 |
| G4 | To give priority to everyday congregations. | | .522 |
| G5 | To attach more importance to religious trips than to tourism. | | .484 |
| G6 | To observe Ghul and attend Friday prayer. | | .448 |
| G7 | To try to carry the <i>Quran</i> under all conditions. | | .428 |
| F | Ceremonial | 0.80 | |
| G1 | To actively attend the mourning ceremonies held for the Prophet's household. | | .784 |
| G2 | To participate in mourning ceremonies particularly in the months of Muharram and Safar. | | .654 |
| G3 | To attend the ceremony of the Night of Qadr. | | .628 |
| G4 | To participate in ceremonies celebrating the birthdays of the Prophet and his household. | | .608 |
| F | Inspirational | 0.82 | |
| G1 | To keep the account of one's wealth and possessions and pay its Zakat and Khums. | | .630 |
| G2 | To believe that both men and women should observe Hijab. | | .518 |
| G3 | To believe in the effect of alms-giving in shielding against catastrophes and problems. | | .509 |
| G4 | To consume Halal food when travelling to different countries. | | .488 |
| F | Sacrificial | 0.68 | |
| G1 | To sacrifice an animal on Eid Qurban and other occasions. | | .642 |
| G2 | To consume sacrificed meat for its religious effect. | | .545 |
| F | Humanitarian | 0.78 | |
| G1 | To support the deprived as a religious duty. | | .803 |
| G2 | To visit patients as a religious duty. | | .645 |
| F | Theo-pacific | 0.56 | |
| G1 | To accept that religion offers comfort when sorrows and misfortune strike. | | .540 |
| G2 | To pray to gain relief and protection (from spiritual problems). | | .536 |
| G3 | To pray in order to secure a happy and peaceful life. | | .481 |
| F | Inquisitive | 0.58 | |
| G1 | To obtain information on other religions besides Islam. | | .553 |
| G2 | To do a research before accepting Islam. | | .498 |
| F | Charitable | 0.53 | |
| G1 | To do charitable work like supporting the orphans. | | .684 |
| G2 | To allocate some money to help charitable organizations. | | .473 |
| D | Shia Ithna Ashari Domain | 0.88 | |

The correlations obtained between the SIAROS and its underlying factors answered the second research question. The eight factors underlying the scale represent families which are all significantly related to the domain of Shia Ithna Ashari religious orientation (Table 2). The Inquisitive family, however, had the lowest significant correlation with the domain (i.e., $r=.15, p<.01$) which is even lower

than its correlation with the Charitable family (i.e., $r=.21, p<.01$), indicating that inquisitive G4SHS students are more interested in helping people than practicing Shia Ithna Ashari school of Islam because they are in the process of obtaining “information on other religions besides Islam” and doing “research before accepting” it.

Table 2 Correlations between Shia Ithna Ashari Religious Orientation Domain (SIAROD) and its Constituting Families (n=453).

| No | Families | SIAROD | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----|---------------|--------|-------|-------|-------|-------|-------|-------|-------|
| 1 | Social | .84** | | | | | | | |
| 2 | Ceremonial | .72** | .58** | | | | | | |
| 3 | Inspirational | .74** | .53** | .42** | | | | | |
| 4 | Sacrificial | .66** | .51** | .46** | .43** | | | | |
| 5 | Humanitarian | .57** | .35** | .29** | .38** | .35** | | | |
| 6 | Theo-pacific | .45** | .24** | .22** | .21** | .24** | .18** | | |
| 7 | Inquisitive | .15** | -.02 | -.07 | .06 | -.06 | .09 | .06 | |
| 8 | Charitable | .45** | .24** | .19** | .25** | .16** | .40** | .20** | .21** |

Note. ** $p<.01$ (2-tailed)

Neither the Shia Ithna Ashari religious orientation nor its Social, Ceremonial, Inspirational, Sacrificial, Humanitarian, Theo-pacific, and Inquisitive genera, however, correlated significantly with G4SHS students' GPA, providing a negative answer to the *third* research question raised in the study. Only did the Charitable genus show significant relationship with the GPA ($r=.168, p<.05$), indicating that the more charitable G4SHS students are, the higher they achieve in their school.

In sharp contrast to GPA, the English language achievement

measured by G3FEE correlated significantly but negatively with Shia Ithna Ashari religious orientation ($r=-.178, p<.01$) (Table 3). (The relationship, however, disappears when the scores of 147 students on G3FEE are correlated with the SIAROS, indicating the importance of having a larger sample in correlational studies). Similarly, Social ($r=-.290, p<.01$), Ceremonial ($r=-.238, p<.01$) and Sacrificial ($r=-.197, p<.01$) families correlated significantly but negatively with G3FEE while Inquisitive ($r=.107, p<.01$) and Charitable ($r=.133, p<.01$) families correlated positively with G3FEE rendering the answer to the *fourth* question positive as well.

Table 3 Correlations between SIAROD and its Families with GPA, G3FEE and S-Test

| Domain/Genus | GPA (n=147) | G3FEE (n=453) | G3FEE (n=147) | S-Test (n=147) |
|---------------|-------------|---------------|---------------|----------------|
| SIAROD | -.051 | -.178** | -.138 | .062 |
| Social | -.102 | -.290** | -.178* | -.024 |
| Ceremonial | -.094 | -.238** | -.210* | .087 |
| Inspirational | .041 | -.026 | -.039 | .121 |
| Sacrificial | -.117 | -.197** | -.174* | -.046 |
| Humanitarian | -.025 | -.093 | -.029 | .034 |
| Theo-pacific | -.034 | .046 | -.065 | .072 |
| Inquisitive | .036 | .107* | .090 | .020 |
| Charitable | .168* | .133** | .140 | .034 |

SIAROD, shia ithna ashari religious orientation domain; G6FEE, Grade 3 final english examination; S-Test, schema-based cloze multiple choice item test; * $p <.05$, 2-tailed. ** $p <.01$, 2-tailed

Contrary to G3FEE whose relationship with Shia Ithna Ashari religious orientation is significant but reverse, S-Test does not relate to the domain. Neither do any of the eight families constituting G4SHS students' Ithna Ashari religious orientation bear on their English language achievement when it is measured by S-Test. These results answer the fifth research question negatively and show that the S-Tests are different from G3FEE because they are influenced neither by the domain nor by the genera of religious orientation measured by the SIAROS.

Discussion

The cognitive domain of religious orientation has been macrostructurally treated as a schema by almost all psychologists.^{20,33,44,45} Based on their own *personal* understanding and interpretation a number of psychologists have authoritatively divided the domain into two opposing extremes (i.e., intrinsic and extrinsic orientations) consisting of certain genera. Allport and Ross,¹⁴ for example, wrote nine and eleven genera to distinguish intrinsically

oriented Americans from the extrinsically oriented ones, respectively. Then they investigated the behaviour of these two idiosyncratically established religious groups towards ethnic groups.

The findings of this study, however, challenge Allport and Ross¹⁴ macrostructural treatment of religion as a universal schema on the one hand and the grouping of certain idiosyncratically developed genera as constituents of universal religious orientations on the other. They support Khodadady's³² microstructural approach of cognitive domains as the broadest concept readers of scales such as ROS create for themselves when they read the genera composed by the designers of scales. He argued that by resorting to their background knowledge of the species comprising the genera, the readers themselves subsume them under various families. Thus the readers' domain of religious orientation depends on the species through which they change some or all of the designers' genera into their own and then subsume them under certain families represented by factors extracted from their responses.

The 44-sentence SIAROS, for example, contained Allport and Ross¹⁴ seven intrinsic genera (see items 1, 2, 4, 5, 7, 8 and 9 in Appendix). If their claim regarding the universality of intrinsic orientation were valid, then all of its constituting genera would load acceptably and exclusively on a single factor. The results of this study, however, show that six of these species did not load on any of the eight factors extracted from G4SHS students' responses. On the contrary, some of the intrinsic species contributed to genera other than intrinsic orientation, Item four representing the intrinsic species "to spend periods of time in private religious thought and meditation", for example, contributed to the students' Social family (Table 1).

Similarly, the 44-sentence SIAROS contained 11 extrinsic items developed by Allport and Ross¹⁴ of which seven did not load acceptably and exclusively on any of the eight factors extracted in the study (i.e., items 13, 14, 15, 16, 17, 19 and 20 in Appendix). Interestingly, however, Allport and Ross' extrinsic species "to consider mosques as the most important places where good social relationships are formed" and Feagin's³³ extrinsic species "to become a member of mosque to establish oneself in the community" had the first and highest exclusive and acceptable loadings (.557 and .543, respectively) on G4SHS students' Social family (Table 1).

The social family of Shia Ithna Ashari religious orientation is not extrinsic because it comprises seven genera most of which require not only Allport and Ross¹⁴ intrinsic genus "spending periods of time in private religious thought and meditation" but also Shia-specific genera of "giving priority to everyday congregations", "attaching more importance to religious trips than to tourism" "observing Ghul and attending Friday prayer" and "trying to carry the *Quran* under all conditions". These practices have little, if any, to do with Christianity and may regularly be carried out by individuals who are either sincere practicing Muslims, i.e., intrinsically oriented, or insincere Muslim-looking hypocrites, i.e., extrinsically oriented.

Similarly, two extrinsic genera developed by Allport and Ross,¹⁴ i.e., "to pray to gain relief and protection [from spiritual problems]" and "to pray in order to secure a happy and peaceful life" loaded acceptably and exclusively on a single factor called Theo-pacific by Khodadady and Bagheri.³⁰ The factor represents a distinct genus in Islam because its constituting items partially relate to *Quranic* teachings. Q 2:155, for example, states that "And certainly, We shall test you with something of fear, hunger, loss of wealth, lives and fruits, but give glad tidings to As-Sabirun (the patient)". And Q 2:156 tells

them how to avoid grief in the case of calamities by saying "Truly! To Allah we belong and truly, to Him we shall return" (translated from Arabic by Al-Hilali and Khan⁴⁶).

G4SHS students' subsumption of Allport and Ross¹⁴ two extrinsic species under the distinct Theo-pacific family provides empirical evidence to support Khodadady's³¹ argument that the comprehension of the species comprising specific genera and relating them to their personal life allows scale takers to subsume them under families which are unique and valid just to those takers. In other words, not only the species comprising the genera but also the genera comprising the families of cognitive domains such as Shia Ithna Ashari religious orientation are not necessarily "compatible with the input information" of scale designers as Carrell,⁶ claimed but dynamic and scale taker-specific because they differ in their religious genera, families and domain.

The findings of this study also show that not only Shia Ithna Ashari religious orientation but also three of its constituting families have reverse associations with G4SHS students' English language achievement when it is measured by G3FEE, indicating that they achieve less in the language if they orient themselves to Shia Ithna Ashari Islam ($r = -.178, p < .01$) and its Social ($r = -.290, p < .01$), Ceremonial ($r = -.238, p < .01$) and Sacrificial ($r = -.197, p < .01$) families. In other words, the social, ceremonial and sacrificial families of students' religious orientation are in conflict with what the Iranian educational system evaluates traditionally as English language achievement.

G3FEE is a traditional measure of English language achievement because it does partly depend on formative evaluation conducted not only by the teachers but also unqualified evaluators such as students themselves and parents! As cited by Ardakani, Riyahinezhad and Razaqi,⁴⁷ according to article 45 of by-laws approved for evaluation in senior high school "formative evaluation is based on the students' participation in various teaching-learning activities, written, oral and practical tests, individual and collective assignments, listed observation of behaviours, the number of activities as well as degree of exhibited attempt, innovation and invention. The score for these evaluations in the courses offered are reported in two semesters".

G3FEE, however, associated significantly with the Inquisitive ($r = .107, p < .05$) and Charitable ($r = .133, p < .01$) families of Shia Ithna Ashari religious orientation. The positive and significant associations of these two religious families with traditionally assessed English language achievement are similar to, though weaker than, those of nine out of 11 families Khodadady and Dastgahian⁴⁸ established for the cognitive domain of English teacher effectiveness at G4SHSs, i.e., Qualified, Social, Proficient, Humanistic, Organized, Pragmatic, Systematic, Exam-Wise, and Lenient (Table 4). The domain was first defined operationally and measured by Khodadady, Fakhrabadi and Azar's⁴⁹ 102-item English Language Teachers' Attributes Scale (ELTAS). However, most of these families have little, if any, to do with the material taught as English language.

The Lenient family of G4SHS students' English language teacher effectiveness, for example, correlates significantly with G3FEE ($r = .178, p < .01$) as does the Charitable family of the students' Shia Ithna Ashari religious orientation ($r = .133, p < .01$), indicating that the more lenient the teachers are in their evaluation and the more charitable G4SHS students are in their religious orientation, the more the students achieve in their English language. The Lenient family of teacher effectiveness, however, has nothing to do with learning the

English language because a lenient teacher "... ignores cheating", "... designs simple and easy tests", and "... gives good grades and does not take it hard".

Similar to the Lenient family of teacher effectiveness, the Charitable family of Shia Ithna Ashari religious orientation is largely other-than-self oriented. This is because it correlates the highest with the Humanistic genus of Shia Ithna Ashari religious orientation ($r=.404, p<.01$) requiring "supporting the deprived as a *religious* [emphasis added] duty" and "visiting patients as a *religious* [emphasis] duty". The Humanistic genus does not, however, relate significantly to G3FEE while the Charitable genus does ($r=.133, p<.01$) because the two constituting genera of the latter are not necessarily religious, i.e., "doing charitable work like supporting the orphans" and "allocating some money to help charitable organizations". In other words, the students might be allocating some money to help promote the charitable activities of their own schools and thus influence their English teachers indirectly to give good grades and take it easy.

In contrast to the G3FEE which consisted of five unseen paragraphs, nine multiple choice and three true-false items, Khodadady and Ghergloo's³⁷ S-Test addresses more than ten percent of "English 1 and 2, Pre-university Grade: Common Course for All Fields"³⁸ taught to G4SHS student during the school year (Table 5). Out of 5166 species tokens comprising the eight reading passages of textbook, for example, 1023 (20%) constitute the S-Test. Similarly, out of 305 genera forming the passages 59 (19%) contribute to the test, allowing its designers to develop 90 close multiple choice items. In other words S-Test is superior to G3FEE because its items are four times more than those of G3FEE. As Little, Planck and Nesselroade⁵⁰ stated, "all other things being equal, more items lead to better construct representations".

Since Khodadady and Ghergloo's³⁷ S-Test was developed on a fairly representative sample of paragraphs chosen from seven out of eight reading passages taught as different cognitive domains to G4SHS students and thus enjoyed theoretical as well as construct validity it correlated neither with the Shia Ithna Ashari religious orientation nor with any of its constituting families. These findings show that while traditional measures of English language achievement such as G3FEE render students' domain of religious orientation as well as its social, ceremonial and sacrificial families *negative*, S-Tests render the domain and all of its eight genera *irrelevant* to English language achievement. Further research is though needed to explore whether the domain and genera of Shia Ithna Ashari religious orientation relate significantly to the achievement of other school subjects such as science and mathematics.

The findings of this study have several religious and educational implications. First, it calls for developing a religious orientation scale which taps into religious families other than or besides Social, Ceremonial, Inspirational, Sacrificial, Humanitarian, Theo-pacific, Inquisitive and Charitable factors because they have little, if any, to do with secondary education as reflected in students GPAs. Although Inquisitive family does have educational values (i.e., "obtaining information on other religions besides Islam" and "doing a research before accepting Islam"), its significant correlation with the domain of Shia Ithna Ashari religious orientation ($r=.145, p<.01$) is the lowest among the eight families, indicating that Shia Ithna Ashari school of Islam as measured by the SIAROS pays the lowest attention to educational activities.

Secondly, the Inquisitive family of Shia Ithna Ashari religious orientation is more of a social nature than a religious domain because

its correlation with the Charitable family ($r=.207, p<.01$) is stronger than that of the domain measured by the SIAROS ($r=.145, p<.01$). This may imply that in order for the students to be educationally successful they have to spend money for "supporting the orphans", "helping charitable organizations", and being provided with a number of services such as learning foreign languages. Parents, according to Alikhah⁵¹, pay from five to 20 million (approximately 1000 to 4000 USD in 2017) per year for various services in not only private but also state schools these days. Thus by rendering examinations such as G3FEE dependent on money, "schools are gradually stabilizing social inequality in Iran".

And finally, the MICAST-based analysis of the English textbook taught at G4SHS consists of eight cognitive domains represented by its reading passages. The same analysis of Khodadady and Ghergloo's³⁷ S-Test showed that it needs revision because it measures G4SHS students' understating of seven rather than eight passages representing the same number of cognitive domains. Correlating the S-Test with the SIAROS and its underlying factors showed that the seven cognitive domains brought up by the textbook bear no significant relationship with the domain and families of Shia Ithna Ashari religious orientation. Future research must show whether a revised S-Test containing all the domains brought up in the textbook still supports the irrelevance of religious orientation to the content represented by the texts the students officially learn at G4SHSs via the English language.

Limitations

The number of male participants was noticeably fewer than that of female students. Replicating the study with an almost equal number of students from both sexes may provide a more objective index of the relationship between religious orientation and school as well as English language achievement.

Conclusion

The SIAROS employed in this study measures religiosity rather than religious orientation because the former "is usually reserved in reference to involvement in organized religion"⁵². By adhering to their social and ceremonial families of religiosity pre-university students, for example, achieve social safety and security but lose their freedom of learning the English language whose achievement is largely measured by unqualified but socially influential agents such as parents, school principals and educational policy makers. Although objective measures of achievement such as S-Tests help the students achieve freedom, these measures have little, if any, role to play in educational decision making in many countries including Iran.

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Conflicts of interest

The authors declare there is no conflict of interest.

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