

## Economic, Social, Cultural, Emotional, and Sensory Capitals in Academic Achievement

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### Abstract

Capitals' contribution to educational achievement and their role in one's success or failure within classrooms are paramount, which is why they have been often discussed in the realm of the sociology of education. Adding the newly-developed concept of sensory capital as a complement to the existing capitals, the present study seeks to statistically find the potential relationships these capitals may have with each other and their possible influences on educational achievement. To accomplish this, first, a questionnaire was designed and validated to quantify the amount of sensory capital. Then, along with emotional, social, cultural, and economic capital questionnaires, it was given to 410 participants whose language scores were used as an indicator of educational achievement. Structural equation modeling (SEM) was run, the results of which indicated positive relationships among all types of capital and a significant role in language achievement score, with economic capital having the highest and social capital having the lowest contribution. Therefore, capitals can be concluded to both have a significant relationship with each other and a determining role in educational achievement that should be taken into account when it comes to dealing with educational success in academic environments.

**Keywords:** capital, sensory capital, Bourdieu, educational sociology

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## 1. Introduction

Among the nearest and dearest to parents, teachers, and educators' hearts is enabling students to achieve higher grades in their lessons, because despite the endless efforts educators have been putting into eliminating or at least diluting the role of grade point averages or even substituting them with other criteria, we can still see that the benchmark by which students' eligibility is assessed are the scores they obtain. This, therefore, indicates the importance of recognizing the contributing factors affecting educational achievement, out of which various studies have emerged claiming that personal, family, and academic causal factors (Diaz, 2003) can play a significant part. From another perspective, social and psychological factors have been taken into account, among which psychological influencers such as motivation (Winne & Nesbit, 2010), sense of identity (Lounsbury et al., 2005), growth mindset (Claro et al., 2016) have been more paid attention to than sociological ones. Nevertheless, there have been some attempts regarding considering the latter, including the effects of social class (Aronowitz, 2004; Choppin, 1968), home condition (Lerman, 2000), and peer relations on academic achievement (Stefanek et al., 2017; Wentzel, 2017). Another social factor that has been greatly worked on in the realm of education is the concept of capital (e.g., Gunn, 2005; Reay, 2004). Though initially was introduced as a mere reflection of monetary practices, capital is no longer restricted to this objective notion, and various scholars, most notably Bourdieu (1986), expanded the concept to symbolic, psychological, social, cultural, and emotional practices to show its potentiality to be introduced as any kind of abstract or concrete asset one might possess. As an example, to Bourdieu (1999), education is an ideationally grounded field in which different forms of capital are, in one way or another, considered the currency of the modus operandi. This means that capital is a search for recognition, which provides a position in a given field, which is in this case, education (Grenfell, 2009).

Within this framework, then, the concept of sensory capital was first proposed by Pishghadam et al. (2018) and then theoretically elaborated more by Pishghadam, Ebrahimi, et al. (2019) and Pishghadam, Shakebaee, et al. (2019) to reattract the attentions to the very notion of senses and their importance in life, in general, and in education, in particular. In these studies, they could successfully place sensory capital at the center of other proposed forms of capitals, and theoretically discussed the potential effects and relationships these capitals might have on or with each other, respectively. Their argument seems to be in the right place since senses and

the emotions they induce have long been of great importance in various aspects of life because the cultivation of our senses from childhood to adulthood plays a significant role in processing the totality of a given experience (Comenius, 1967; Shanker & Greenspan, 2005). The existence of senses is indeed central to the way we connect to ourselves, others, and the encompassing context and our living environment. Our bodies, therefore, as the center of various experiences, senses, emotions, and feelings, are always affected accordingly and are under constant reconstruction and change throughout life.

Getting back to the main realm of this study, we may need to examine the role of senses in education. It is claimed that whatever we know is greatly mediated and learned through our senses, and each of our senses, be it singular or in different combinations, brings us a route to learn (Kátai et al., 2008). The probable explanation in this vein can be found in what Montessori (1912, as cited in Borek & Thompson, 2003) has put forward saying that, having sensory learning experiences is a necessity in developing formal operations, such as the movement from concrete to abstract thinking. Unfortunately, though, the importance of mere accumulating knowledge and accentuating what is being learned than who is being taught have been too widespread in reality that the importance of sense has been entirely cut off from consideration in class.

Recent studies, however, have again tried to shed light on the role senses play in our perception and learning, one of which is the series of studies within the sensationalism doctrine, namely emotioncy. Proposed by Pishghadam et al. (2013), emotioncy holds the view that individuals experience various levels of emotions through their senses. This means that different senses we have, such as hearing, seeing, or touching, can contribute to the development of different emotions, which can consequently affect people's perception of the world around them (Pishghadam, Shayesteh, et al., 2016). Here, senses, as channels through which perceive and act accordingly, are considered as a form of capital people possess, which means the "amount of sensory access one has to something might change one's emotions and put them at different levels of understanding of the world" (Pishghadam, Shakebaee, et al., 2019, p. 273).

Since capitals are the properties people possess and use to manipulate the world around them, sensory capital, like other forms of capital that are unequally distributed, can be perceived as the unequal sense-related assets people own. The

present study, therefore, tries to shed more light on this newly developed concept by trying to quantify the amount of capitals people own, their internal relationships with each other and with this new kind of capital, and their possible effects on educational achievement.

## 2. Literature Review

In what Marx (1867) proposed as class theory, different social classes are attached to the relations of production, because the dispersion of economic goods is decided by the mode of their production, meaning that development could be achieved by such modes, which is an assortment of forces of production, their relations, and social classes (Bottomore et al., 1991). Such modes of class relations, hence, could cause bourgeoisies' domination and proletariats' subordination, and that was the time when the class struggle surfaced as a capitalist social form (Starosta, 2015; Weingart, 1969). This objectively structured stance of production relations seems to be at the center of Marxist class theory, and as an attempt to change such understanding of economic conditions, Bourdieu (1986) tabled his theory of social class concerning the idea of Marx's (1867) capital. To Bourdieu (1986), Marx's conceptualization of capital is merely economic, or in better words, a form of a financial asset. What he suggested instead was the idea of having other forms of capital, something beyond tangible money and material possessions (Jonsson & Lindbergh, 2013), because to him, structures and functions of a social world cannot be adequately described unless capital is introduced in all of its forms. From Bourdieu's (1986) perspective, capital can be described as the "accumulated labor" (p. 15), which has the ability to put agents as allocators of the social energy in the form of living labor. He held up the view that his suggested forms of capital, namely cultural, social, and symbolic, are convertible to economic capital, though, contrariwise, changing economic capital into other forms of capital is more complicated and time-consuming (Greve & Salaff, 2003). In fact, Bourdieu (1989) advised against giving priority to economic capital, believing that being attached to the rules of the economic capital is a social construction that is culturally grounded. Therefore, unlike Marx (1867), he did not limit the idea of capital merely to an economic form, but he expanded it to noneconomic, disinterested forms. In practical terms, pecuniary practices could not be comprehensively defined unless they were concomitant with non-pecuniary practices, such as cultural or artistic practices (Bourdieu, 1986).

The cultural capital theoretical framework proposed by Bourdieu (1986) is

defined as the relationships among class, power, and culture, which focuses on why and how the given social status of a society affects the educational achievement and occupational levels (Luke, 2018). In what Bourdieu put forward as the view of class relations and power, the meaning systems are taken as the key to keeping any domination system and to changing class advantages from one generation to another (Rowlands, 2018). In this vein, we can define cultural capital as a kind of competence in the dominant cultural codes and various practices by means of which the social background inequalities are moved to distinguishing educational degrees, which consequently cause unequal social and economic returns. According to Bourdieu (1986, 1999), there are different forms of cultural capital. One is the embodied state of cultural capital, which, according to him, is the state to put value and understand the cultural goods using deliberate inculcation. The second form of cultural capital is what Bourdieu (1999) called objectified cultural capital, which includes cultural goods and media. In what he believes in this vein, children of higher social strata are born into a home environment where there is more likely that the societally valued knowledge of highbrow culture and different cultural cues be displayed (Bourdieu et al., 1977). Therefore, it can be mentioned that dissimilarities in cultural capital can partly clarify the association between the parents' socioeconomic positions and their children. This is usually interpreted as the idea that the dominant class members are endowed with the most valuable cultural capital and have the best opportunity to be successful in school, which means most members of the lower classes are left with little amount of hope to achieve social mobility (Alanen et al., 2015). For the latter group, there are fewer economic and symbolic returns for their educational investment compared to those of higher social status. As a result, to get to their highbrow classmates, such students need to over-perform to tackle the obstacles (Michael, 2017). It is also important to note that students from lowbrow are aware that students from their class are not much likely to accomplish educational achievements and may select themselves out of some situations.

Among the most central assumption cultural capital theory underpins is that educational institutions can be considered as the primary agents at which a miniature version of a given society, namely a class-based version, is reproduced through hegemonic economic, cultural capital, and of the dominant social class (Webb et al., 2017). Schools are, therefore, believed as socially biased places that

have students from dominant social classes as the favorite (Lareau, 1987). All in all, it can be said that Bourdieu's conception of cultural capital theory scrutinizes the interaction between culture and education, which consequently leads to the social reproduction of inequality. Expansive research (e.g., Ho, 2009; Reay, 2000) in this vein has demonstrated that student's achievement is a multilayer production consisting of their family backgrounds and parents' involvement, and school ambiance that can affect academic preparation.

While cultural capital comprises tangible properties such as educational degrees, social capital is more involved with commitments that come with social relationships (Julien, 2015) because it inextricably interwoven to the social structures, or in better words, it is the available resource operating in the social relations (Kwon & Adler, 2014). The premise social capital holds is rather straightforward; it is a form of social investment with expected comebacks (Lin, 1991). The amount of social capital one possesses is substantially related to their expansion of connections one person, which can consequently affect different types of capital (Grenfell, 2008). This can also lead to the production or reproduction of inequality through connecting to people with various power positions (Pishghadam & Khajavy, 2013). Social capital can also be viewed as an exercise where individuals in the domineering class use mutual credence to bolster the group whose capital forms are more varied (Lin, 1999). This means that people involve themselves in interactions and use four elements of information, influence, social interactions, and reinforcement to produce profits (Lin, 1991).

In his theory, Bourdieu (1987) tried to get rid of dualities and expanded a conceptual framework that emphasized how the embodied agent shapes and is shaped by the society in a more integrated way. His analysis of embodiment as 'practical sense', in particular, delineated emotions in experiences that enculturated social actors expose (Probyn, 2004). Therefore, it is believed that his non-dualistic view on capital can raise awareness regarding research on the role of emotions in education. Although Bourdieu has never expressly talked about the notion of cultural capital in his social works, several educational sociologists, such as Nowotny (1981), have made use of his theories to highlight the role of emotional involvement and its implemented role in different social relationships, like parenthood (Reay, 2000) or childcare (Colley, 2006). Emotional capital, as the name suggests, is a form of social capital, which can be seen as social and cultural resources, which can be achieved through affective relations, specifically those

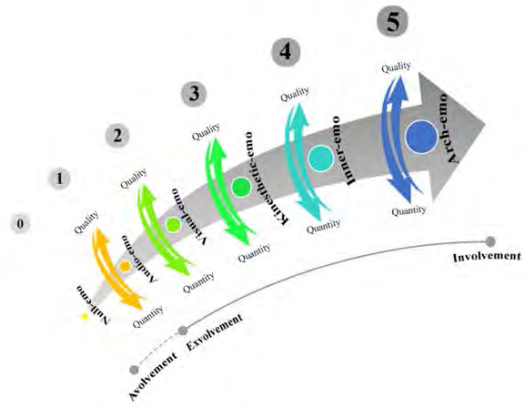
within the family (Reay, 2004). Allatt (1993) construed emotional capital as “emotionally valued assets, skills, love and affection, the expenditure of time, attention, care and concern” (p. 143), which means that emotional capital can be seen as emotional resources which are incarnated as support, patience, and commitment, which according to Reay (2004), is more in the realm of women than man.

In spite of the fact that senses, emotions, and affect are correspondent, there are some nuance differences about them, which are essential to be distinguished. One such difference is related to socio-cultural perspectives. Here, while emotions relate individuals and the society to be through “ongoing relational practices” (Burkitt, 1997, p. 42), affect is first known in the body and then is renamed and re-experienced by employing the social and cultural relations. Viewing such marked differences and the effects of emotion in education and learning from a different perspective, the paper tries to expand the potential role of the newly developed concept of sensory capital (Pishghadam, Ebrahimi, et al., 2019) might have on education.

### **2.1. Sensory Capital**

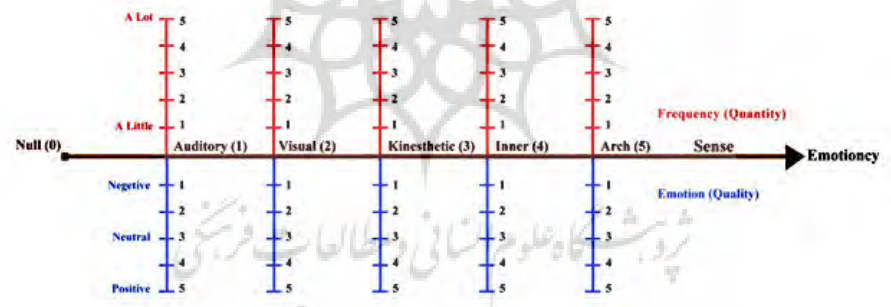
Senses and emotions are closely intertwined; in fact, emotions are claimed to be responses to sensory experiences (Pishghadam & Shayesteh, 2016). Fundamentally, sensory experiences induce emotions about a single concept (Thomson et al., 2010). Founded on the mutually interactive nature of emotions and senses, their impact on cognition and learning, and on the basis of developmental individual-differences (DIR) studies, Pishghadam et al. (2013) proposed the idea of emotioncy, which is defined as the emotion levels held by individuals for different concepts emphasizing the fact that “senses can be hierarchically intertwined with emotions to shape cognition” (Pishghadam et al., 2016, p. 2). Emotioncy, therefore, can be conceptualized as sense-induced emotions, or in better terms, an umbrella term where senses, emotions, and cognition are taken into consideration (Pishghadam, 2016a). To lay the foundations, Pishghadam (2016b) illustrated the concept on a matrix (Figures 1 and 2).

Figure1 Emotioncy Levels



Note. Adapted from “Emotioncy, Extroversion, and Anxiety in Willingness to Communicate in English,” by R. Pishghadam, 2016a, the 5<sup>th</sup> International Conference on Language, Education, and Innovation.p.2.

Figure 2 A Metric for Measuring Emotioncy



Note. Adapted from “Emotioncy, Extroversion, and Anxiety in Willingness to Communicate in English,” by R. Pishghadam, 2016a, the 5<sup>th</sup> International Conference on Language, Education, and Innovation, p.3.

What can be clearly seen here is that learners are categorized into three types of involved (those with no prior experiences), evolved (those with some limited levels of experiences), and involved (those who have reached the full levels of experiences). To explain more, he classified these types into kinds (Table 1).



**Table 1**  
*Emotioncy Categorization*

Emotioncy		
Types	Kinds	Experience
Avolvement	Null	When an individual has not heard about, seen, or experienced an object or a concept.
	Audio	When an individual has merely heard of a word/concept
	Visual	When an individual has both heard about and seen the item.
Exvolvement	Kinesthetic	When an individual has touched, worked, or played with the real object.
	Inner	When an individual has directly experienced the word/ concept.
	Arch	When an individual has done research to get additional information.

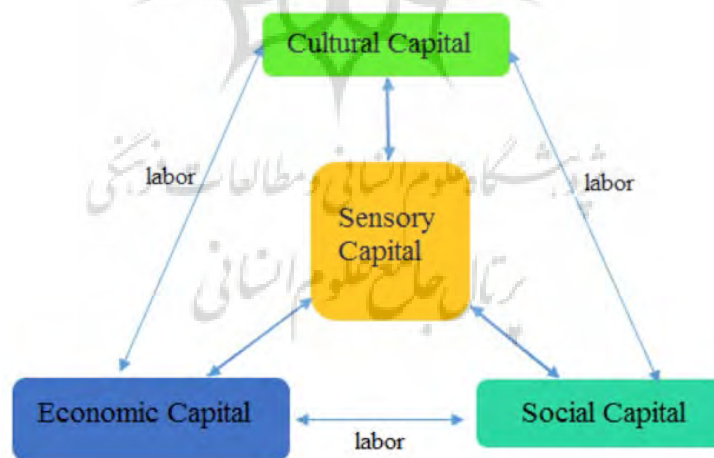
Adapted from “Conceptualizing Sensory Relativism in Light of Emotioncy: A Movement Beyond Linguistic Relativism,” by Pishghadam, Jajarmi, et al. 2016, *International Journal of Society, Culture and Language*, p. 4.

Within the framework of emotioncy, Pishghadam, Jajarmi, et al. (2016) suggested the idea of sensory relativism, which is of the view that senses are able to create various degrees of emotions that can relativize our perception of the world. This idea was further endorsed by the results of a study which indicated people’s reaction might vary within a given society based on various sensory channels through which they receive information (Pishghadam et al., 2018). Therefore, senses can have an influential role with respect to cultural and social practices. That is why *sensory capital* could be taken as a tool that can represent different levels of emotions that are induced by other forms of capital, like economic, social, and cultural capitals (Pishghadam, Ebrahimi, et al., 2019). Sensory capital can, therefore, be delineated as the extent of sensory access one has toward a concept, which has the ability to change their level of emotions and provide them with a different level of understanding of the world. This means that senses, by which we receive information, can be considered as our assets, or our capitals, which can change our perception and understanding. Putting this idea in emotioncy terms, it

can be seen that depending on whether one is avolved (null), exvolved (auditory, visual, and kinesthetic) or involved (inner and arch) in a subject, their perception of the reality might be molded differently. We believe that sensory capital is not a fixed concept, and like other forms of capital, it has the potential to be changed. This means that under the influence of envolvers, when people interact, their amount sensory capital can be altered (Figure 3).

We also think that sensory capital has a bilateral relationship with other forms of capital, which means that it can utilize other forms of capital, and at the same time, it has the ability to influence them. Differently put, different amounts of economic, emotional, social, and cultural capitals can provide different levels of accessibility to different channels of receiving information through senses, which can consequently construct a sensory gap. Let us illustrate this idea with an example. Consider an individual with specific economic capital who has the ability to attend museums or art galleries and compare this person with someone who does not possess such amount of economic capital and has never attended any of these places. This is in accordance with Bourdieu's (1986) transformations of capitals into each other.

**Figure 3**  
*The Relationship Between Different Types of Capital*



*Note.* Adapted from "Sensory Capital in Education: A Missing Piece?," by Pishghadam, Shakeebae, et al., 2019, p. 276.

As can be depicted sensory capital is centralized in this model to underline its bilateral relationships with other forms of capital. Table 2 provides examples on transformations between capitals.

**Table 2**  
*Examples of Capitals and Their Transformation*

Capital	Example
Cultural capital	Pictures, books, machines, instruments, etc.
Social capital	Membership in a group
Economic capital	Deposits in a bank
Cultural → social	The individuals might write a book and their academic status quo rises
Social → economic	The individuals might get a salary promotion due to their position
Cultural → economic	The individuals might sell their written book
Cultural → sensory	The individuals visit a special historical place and their senses change
Social → sensory	The individuals meet a special person, and their senses become different
economic → sensory	The individuals use their money to buy caviar, and their feelings change

*Note.* Adapted from “Sensory Capital in Education: A Missing Piece?,” by Pishghadam, Shakeebae, et al., 2019, p. 276.

Based on the above-mentioned literature, we hypothesize that this newly-developed capital, like other forms of capital, can play a role in educational achievement and success. In particular, we try to examine the existing and potential relations between various capitals, namely economic, social, cultural, emotional, and their contribution to sensory capital and also the possible relationships they may have with the obtained language scores.

### 3. Methodology

#### 2.1. Participants

The sample initially consisted of 542 participants, who were reduced to 410 after omitting the participants with missing data, 251 of whom were females (61.2%) and 159 were males (38.7%) aged 18 to 32 ( $M= 20.54$ ,  $SD=.09$ ). They were all university undergraduate students from different fields of study in Mashhad, Iran, coming from different socioeconomic backgrounds. The selection was based on convenience sampling and accessibility, and the participation was completely voluntary.

## 2.2. Instruments

The instruments used in the present study included:

### 2.2.1. Social and Cultural Capital Questionnaire (SCCQ)

Designed and validated by Pishghadam et al. (2011), SCCQ includes a five-factor model of social and cultural capitals, namely *social competence*, *social solidarity*, and *extraversion* as the sub-scales of social capital and *literacy and cultural competence* as the sub-scales of cultural capital. This questionnaire comprises of 42 items (13 items of which measure participants' level of cultural capital and 29 items measure their social capital) using a five-point Likert-type scale ranging from (1) *Not at all* to (5) *very much*. The given reliability in that study is reported 0.88 (See Appendix A for the sample of questions.).

### 2.2.2. Emotional Capital Questionnaire (ECQ)

Designed and validated by Piri et al. (2018), ECQ includes *self-awareness*, *self-regulation*, *motivation*, *social awareness*, and *social skills*, each of which included some sub-components. Self-awareness contains *emotional awareness*, *self-assessment*, and *self-confidence*. Self-regulation contains *self-control*, *trustworthiness*, *conscientiousness*, *adaptability*, *achievement orientation*, and *initiative*. Social awareness contains *empathy*, *organizational awareness*, and *service orientation*. Finally, social skills contain: *developing others*, *leadership*, *influence*, *communication*, *change catalyst*, *conflict management*, *building bonds*, and *teamwork and collaboration*. Among these components, motivation is the one that has no sub-components. ECQ comprises 40 items that measure participants' level of emotional capital using a five-point Likert scale ranging from (1) *very little* to (5) *very well*. The given reliability in that study is reported 0.81 (See Appendix B for the sample of questions).

### 2.2.3. Sensory Capital Questionnaire (SCQ)

This newly-developed questionnaire is designed based on the concept of sensory capital put forward by Pishghadam, Shakebaee, et al. (2019) and aims to measure the sensory capital levels in educational settings. It consists of five subscales, including instructors, classes, classmates, books and pamphlets, and educational tools, each of which were divided into two sections, namely form (content) and function. Based on the theoretical framework of sensory capital, namely emotioncy, the questions were designed in a way to indicate the three aspects of sense, emotion,

and frequency (Figure 1b). To calculate the scores, the emotioncy formula (Pishghadam, 2016a) was used. In this formula,  $\text{Emotioncy} = s(f + e)$ , where,  $s$  = sense,  $f$  = frequency,  $e$  = emotion. In order to conduct statistical analysis, the calculated scores were entered into SPSS software (version 24). The reliability and validity of this questionnaire are examined in the following sections (See Appendix C for the sample of questions.).

#### *2.2.4. Economic Capital Questionnaire (EcCQ)*

This questionnaire tries to classify participants' economic capital. Based on the Marxian stratum model of class, society is separated into a hierarchy of working-class, middle class, and upper class, which is quite a stable sociocultural background (Maron et al., 2016), and different factors have been proposed to characterize such social status structure which includes education, career, sex, marital status, access to goods and rate of consumption, availability of services and household, and neighborhood or community level (Hollingshead, 1975; Krieger et al., 1997; Pishghadam et al., 2018). Using this, participants' family income, their parents' professions, and the whereabouts of their home location and neighborhood were used as the criteria by which the participants were clustered. To explain more, families living in more affluent neighborhoods; with more prestigious jobs (such as medical doctors and university professors); with higher levels of education (masters, Ph.D., and above) whose total income was above 50 million Rials (the currency of Iran) were labeled as the upper class; those families who were living in less affluent neighborhoods, with masters or bachelor's degrees, who were employees or self-employed whose total income was between 30 to 50 million Rials were labeled as the middle class; and finally, those families who were living in poor neighborhoods, who were workers or had no jobs with a lower academic background (diploma degree and below) and their family income was below 30 million Rials were labeled as the working class. These pieces of information were then codified to categorize participants into three groups of low, mid, and high class.

### **2.3. Procedure**

The Persian (as the first language of the participants) versions of these questionnaires were administered to participants for a better understanding and to increase the accuracy of the data and the return rate. Completing all these

questionnaires took around 30 minutes, and participation was entirely voluntary. The collected information was then entered into SPSS (version 24) for conducting statistical analyses. Moreover, in order to substantiate the construct validity of the scale and to confirm the latent factors, Confirmatory Factor Analysis (CFA) was run utilizing Amos (Version 20). Demographic information (including gender and age) and the language scores of the General English Course at university (as an indicator of academic achievement) were also obtained from the participants.

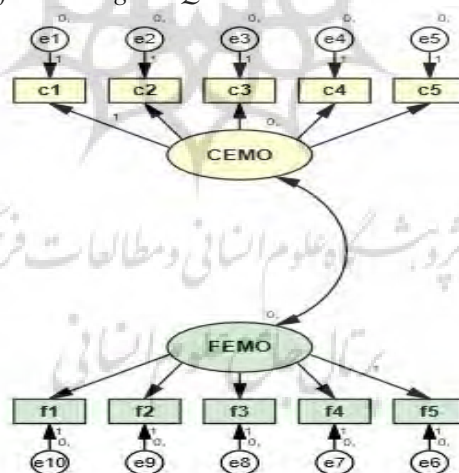
#### 4. Results

##### 4.1. Validating the Sensory Capital Questionnaire (SCQ)

In order to check the validity of the questionnaire, Confirmatory Factor Analysis (CFA) was used, based on which, the association between each sub-factor of the proposed model was analyzed. Figure 4 is an indication of the model we proposed for the newly-designed questionnaire.

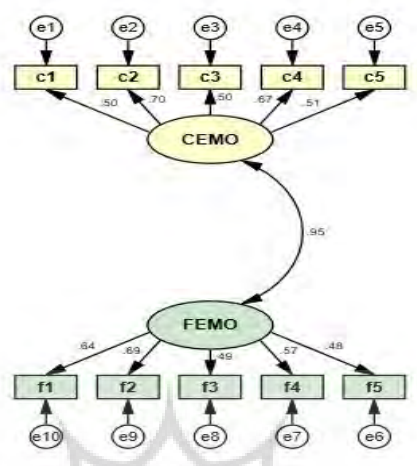
**Figure 4**

*The Proposed Model of the Designed Questionnaire*



As the proposed model indicates, the designed questionnaire has two sub-constructs namely, C-emo (5 items) and F-emo (5 items). To check the model fit, the goodness-of-fit indices were used. The model with all factor loadings can be seen in Figure 5.

**Figure 5**  
*CFA Model of the Designed Questionnaire*



The goodness-of-fit indices are tabulated in Table 3. In this study,  $\chi^2/df$ , GFI, CFI, and RMSEA were used. To have a fit model,  $\chi^2/df$  should be less than 3, GFI and CFI should be above .90, and RMSEA should be less than .08 (Blunch, 2012).

**Table 3**  
*The Goodness of fit Indices*

	$\chi^2/df$	GFI	CFI	RMSEA
Acceptable fit	<3	>.90	>.90	<.08
Model	2.36	.91	.97	.07

As Table 3 shows, all the goodness-of-fit indices are within the acceptable range. Therefore, the scale enjoyed perfect validity. As Figure 5 shows, there is a high positive significant relationship between two sub-constructs of the questionnaire. Table 4 summarizes the information obtained from Cronbach's alpha analyses.

**Table 4**  
*Results of Cronbach's Alpha Indexes After Validation*

SCALE	NUMBER OF ITEMS	CRONBACH'S ALPHA
C-EMO	5	.70
F-EMO	5	.69
OVERALL	10	.81

As can be seen, the utilized questionnaire gained acceptable indexes of Cronbach's alpha in all two subscales. Moreover, the reliability of the whole questionnaire was .81.

#### 4.2. Confirmatory Factor Analysis Among Different Capitals

Table 6 summarizes the information obtained from Cronbach's Alpha analyses.

**Table 6**  
*Results of Cronbach's Alpha*

Scale	Number of items	Cronbach's alpha
Cultural Capital	13	.82
Emotional Capital	40	.91
Social Capital	29	.89
Sensory Capital	10	.81

As can be seen, the utilized scales gained acceptable indices of Cronbach's Alpha ranging from .81 to .91.

Descriptive statistics of variables of the study (economic capital, cultural capital, emotional capital, social capital, sensory capital, and language score) are presented in Table 7.

**Table 7**  
*Descriptive Statistics of the Variables*

	N	Minimum	Maximum	Mean	SD
Economic Capital	410	1.00	20.00	5.26	3.43
Cultural Capital	410	1.68	5.00	3.35	.66



	N	Minimum	Maximum	Mean	SD
Emotional Capital	410	1.23	4.52	3.11	.51
Social Capital	410	1.43	4.78	3.23	.61
Sensory Capital	410	2.00	33.90	15.06	5.61
Language Score	410	10.00	20.00	16.77	2.31

Results of correlations between variables and language scores are presented in Table 8. As can be seen in Table 3, among different variables, Economic Capital has the highest correlation ( $r = .39, p < .05$ ) and Social capital ( $r = .17, p < .05$ ) has the lowest correlation with language score.

**Table 8**  
*Results of Pearson Correlation*

	Economic Capital	Cultural Capital	Emotional Capital	Social Capital	Sensory Capital	Language Score
Economic Capital	1.00					
Cultural Capital	.26**	1.00				
Emotional Capital	.34**	.39**	1.00			
Social Capital	.23**	.25**	.52**	1.00		
Sensory Capital	.39**	.36**	.29**	.25**	1.00	
Language Score	.39**	.28**	.27**	.17*	.31**	1.00

\*\*Correlation is significant at the level of 0.01

\*Correlation is significant at the level of 0.05

In order to have a better understanding of the relationship between variables, path analysis was employed in which only single indicators are employed for each

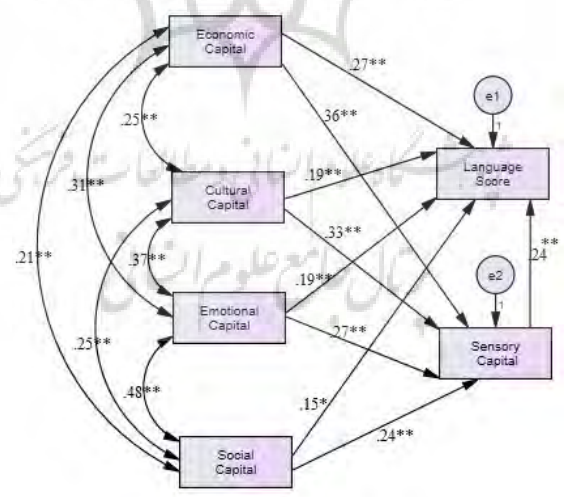
of the variables in the causal model. Figure 6 indicates the interrelationship among different variables. A number of fit indices were examined to evaluate the model fit for the different proposed models. Table 9 shows the goodness of fit indices for different proposed models of the interrelationship between variables.

**Table 9**  
*The Goodness-of-fit indices*

	<i>X<sup>2</sup>/df</i>	GFI	CFI	NFI	RMSEA
Acceptable fit	<3	>.90	>.90		<.08
Proposed Model 1	3.12	.88	.85	.86	.07
Proposed Model 2	3.07	.89	.84	.91	.08
Last Model	1.89	.94	.97	.95	.05

As the results revealed, all the fit indices, NFI (.95), CFI (.97), GFI (.94), the chi-square/*df* ratio (1.89), and RMSEA (.057), lie within the acceptable fit thresholds based on Schreiber et al. (2006). Hence, it can be concluded that the last proposed model had a perfect fit with the empirical data.

**Figure 6**  
*Interrelationship Among Variables*



As indicated in Figure 6, language score is predicted positively and significantly

by different variables: economic capital ( $\beta = .27, p < .05$ ), cultural capital ( $\beta = .19, p < .05$ ), emotional capital ( $\beta = .19, p < .05$ ), social capital ( $\beta = .15, p < .05$ ), and sensory capital ( $\beta = .24, p < .05$ ). Moreover, results of Path analysis showed that sensory capital is predicted by four variables: economic capital ( $\beta = .36, p < .05$ ), cultural capital ( $\beta = .33, p < .05$ ), emotional capital ( $\beta = .27, p < .05$ ), and social capital ( $\beta = .24, p < .05$ ).

## 5. Discussion

In this study, a model of language achievement based on three existing forms of capital, namely economic, socio-cultural, and emotional capitals and one recently-suggested capital, namely sensory capital is proposed. The existing and potential interrelationships among the capitals as well as their contribution to language achievement are tested in this model through SEM, all of which showed a good fit to the data. The importance of the obtained results from the SEM analysis is twofold: first, we could be able to quantitatively illustrate the centrality of sensory capital and its ability to affect and be affected by other forms of capital. Also, we could show that participants' sensory, social, cultural, and emotional capitals can predict their language achievement, as an indicator of educational attainment. The obtained relationships; therefore, can be partially justified as in what follows:

The existing relationship between social capitals and other capitals can be justified through the strength and direction of ties that are made in social networks (Monkman et al., 2005). The amount of horizontal and vertical ties that are developed is an indication of potential access one might have to other social entities, which is higher in those with higher cultural and economic capitals. This also can affect individuals' levels of senses, because through their established connections, they meet new people, who can affect their way of conceptualizing the world by affecting on their senses, and the more they establish connections, the more they are prone to be affected. Social capital, which is typically interpreted as a sense of belonging to a group, concession with the groups' norms, and members' interaction (Zhao et al., 2012) can be considered as a contributing determinant to participants' language success. The obtained results, in this vein, are in conformity with the findings of Horvat et al. (2003) who claim that students who have more extensive access to network resources may obtain better scores. They were also of

the view that there are some contributing factors regarding the development of social capital, such as the structure of family and its size, and parents' communication with teachers, other students, and school personnel. The results are also in line with the study conducted by Pishghadam and Zabihi (2011), claiming that the parents' literacy and educational level, specifically mothers, is an essential factor in children's academic achievement.

Participants' cultural capital is also linked to other forms of capital, mostly due to the quality and quantity of the existing cultural involvement (Jeannotte, 2003). The positively significant relationship between cultural and social capital, for example, is due to the contributing effect of cultural capital on developing social bonding through fortifying the ties among individuals by utilizing "ideologies, values, and social differences, social solidarity, social integration, and sustainable communities" (Hyypä, 2010, p. 44). Cultural capital can also affect individuals' senses, because the bigger share of cultural capital one owns the stronger it affects the senses one might develop regarding a cultural concept, say, visiting a museum. Moreover, cultural capital a necessary factor in shaping educational success. Studies, such as Clemente (2007), Merenluoto (2009), Pishghadam et al. (2011), and Seo (2010) have generally found that parents' cultural involvement significantly impacts the academic performance, which means that students with more educated and more culturally-involved parents performed higher than the average (Wößmann, 2005). These studies, therefore, confirmed the importance of students' dispositions to involve in cultural activities and the effect of such involvement in educational success in general, and language achievement, in particular. These studies hold the view that participants' social-class can affect the way they see the importance of learning another language, which can consequently influence their levels of motivation and ultimate accomplishment.

Economic capital, too, affects and is affected by other forms of capital. Economic capital can directly affect the level of access to goods, and it can provide individuals with financial resources, so that they can buy those items, which can consequently affect their senses regarding those items. Regarding the relationship between economic capital and academic achievement, we can say that according to Baoyan and Minggang's (2015) model, economic capital affects parents' educational expectation, which consequently affects participants' academic performance.

The obtained results regarding the relationship between emotional capital and

language achievement showed this form of capital and its sub-components, which includes motivation, empathy, self-regulation, and self-awareness can affect educational behavior. This may be partly due to the effect these sub-components have on learners' commitment, creativity, enthusiasm (McClelland, 1987). The obtained results in this part are in line with, or in Reay's (2004) conceptualization of emotional capital, which she called heuristic device, and its positive relationship with educational success and the emotional wellbeing within a given family.

## 6. Conclusion

Sensory capital, as quantitatively explored for the first time in the present study, too, showed to have a significant contributory factor. As Pishghadam, Shakeebae, et al. (2019) have argued, sensory capital employs the concept of emotioncy to build the foundation of sensory capital and explicates how senses work as the central point of economic, cultural, and social capitals. It also highlights the bilateral relationships that exist sensory capital and Bourdieu's (1986) capitals. This means that, due to their economic, cultural, and social status, individuals develop and maintain different levels of emotioncy (Pishghadam et al., 2018; Pishghadam & Shayesteh, 2016), and vice versa. From an educational point of view, then, the obtained results can endorse the claim of sensory capital regarding enriching learners' educational experience and development (Pishghadam, Ebrahimi, et al., 2019). On that ground, educators should be trained to build up learners' levels of emotioncy by increasing their learners' emotions by employing different resources and techniques such as emotionalization (Pishghadam Jajarmi, et al., 2016). This means that, in order to take all the learners' emotioncy backgrounds into account, those materials and tools that are used in the education systems are expected to be localized to tackle the existing prejudices against those neglected classes within every society.

### **Disclosure statement**

No potential conflict of interest was reported by the authors.

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### Appendices

#### Appendix A

##### Social and Cultural Capital Questionnaire (SCCQ) Sample

- 1- My parents used to have a regular connection with my school.
- 2- I feel I have strong ties with my peers.
- 3- I see my friends weekly.
- 4- I enjoy reading literature.
- 5- I know all famous music composers.

#### Appendix B

##### Emotional Capital Questionnaire (ECQ) Sample

- 1 My family members help each other identify their strengths and weaknesses.
- 2 My friends help me in controlling my behavior and emotions.
- 3 The educational system has been successful in creating my motivation to study.
- 4 Religious regulations have made me help my fellows as much as possible.

#### Appendix C

##### Sensory Capital Questionnaire (SCQ) Sample

Regarding the concepts taught in the classes:

I have no prior experience.

I have heard about them.

I have seen and heard about them.

I have seen and heard about and touched them.

I have full experience.

I have done research on them.

My feelings about them:

Extremely negative

Negative

Neutral

Positive

Extremely positive

My frequency of exposure about them:

Never

Rarely

Sometimes

Often

Always

