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Clarification of Educational Courage and Testing it

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ABSTRACT

Objective: This study aimed to clarify the construct through its conceptualization and analysis based on qualitative study and validity test of heuristic definition in the form of a guide sentence.

Methods: The method of content analysis and data analysis with the Colaizzi approach and the Facet Theory approach based on the SSAF of the 3D symmetric rank scaling model were used. The statistical population includes students and graduates of 6 provinces from the three northern, middle, and southern regions of the country, and the sample includes 636 people (n=636), which was conducted through a multi-stage cluster random sampling method.

Results: The results led to the discovery of the true meaning of educational courage, including the five facets: purpose, action domain (covert action and overt action), repetition, and authenticity of the response. According to this heuristic definition, authentic educational courage can be defined as learner-optimal behavior- due to personality capacity- in confronting traumatic educational challenges (Perceived) to achieve a transcendent purpose (mastery learning).

Conclusions: The results of the research showed that authentic educational courage could be considered the best form of moral behavior in education and one of the important indicators of evaluating the quality of learners' performance based on their personality capacity when facing traumatic challenges.

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Introduction

Today, the role of human capital in economic growth and development has become more clear to economists and experts. A look at the current developments of the higher education system indicates that higher education should pay attention to the crisis of quantitative increase and financial constraints but also maintain and improve the quality. The purpose of fully establishing the quality management of educational services is to improve and increase the quality, and reaching this purpose becomes possible by applying scientific and comprehensive methods of evaluation (Feqhi Farahmand, 2012). In this regard, the quality of student's performance is at the top of educators' priorities because it is necessary to create change at the local, regional, national, and global levels (Farooq et al., 2011). This is a symptom of our current self-destructive education system, where learners learn through strict and authoritarian methods, and poor quality learning activity measured by tests is the only thing the education system prioritizes. Through better management and moving towards quality education, teaching learners much more efficiently is possible. Although it is very hard to believe for the majority of educators, we must say that this continuous drop in education is due to the fact that the traditional education system gives the message to almost all people that poor performance is also acceptable (Glasser, 2012).

Let's take a look at the main and fundamental components of Iran's educational system today. We will see that it is based on imitation, authoritarianism, and religious orientation, each of which is the result of one of the determining trends in the formation of the educational system in the past. The interaction of these components, in turn, has created the three components of concentration, quantification, and formalism as secondary components in the education system, the result of which is the ruling spirit of Iran's education system and transforms all the proposed purposes and programs (Irvani, 2014). Since optimal performance is closely related to all-round well-being and the higher the positive mood, the better the performance will be (Seligman, quoted by Angela Lee Duckworth, 2013), it can be predicted that [educational] well-being is hostage to vitality and optimal [educational] performance. Azad Disfani (2021) examined the relationship between educational performance and the self-perception of learners and concluded that there is a mutual relationship between these processes. Abdi and Zandi (2020) found that the variables of successful educational identity, educational vitality, and flourishing interact with the mediating role of

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educational self-efficacy in explaining students' educational performance. Also, national research studies conducted on students have mentioned educational enthusiasm as an indicator of educational quality, while statistics and research do not support the existence of desirable educational enthusiasm in the country's higher education system (Islami et al., 2016). Ozer et al. (2009) showed that educational procrastination covers 40-95% of educational environments (Savari, 2011), and Hemati et al. (2017) also stated: One of the controversial topics in higher education is scientific immorality (immoral behavior in science) among graduate students. According to the research results, it seems that the best way to solve the issues and problems raised in the field of education is to pay attention to the quality of education and training of learners by addressing moral issues, especially moral behavior. It is expected that the resolution of the existing ambiguity regarding the nature of optimal educational behavior as an active moral value in practice can be measured in a way that can lead the individual (both the learner and the teacher) and the educational system to reach to the ultimate purposes of the field of education, in the shortest time and in the best way. Examining the available data drew the researcher's attention to this issue as if the basic and important problem plaguing educational systems is not the lack of educational purposes, the indifference of experts in this field, or the lack of behavior of people in this field, but the main traumatic challenge that prevents the realization of the ultimate purposes of education, was the existence of ambiguity regarding what and nature of optimal educational behavior as a moral virtue and disagreement over the way to institutionalize this style of educational performance in the field of education and training. In other words, several things can be pointed out in expressing the various dimensions of issues that have attracted the attention and minds of researchers in the field of education and the higher education system of the country over the past years such as passivity, procrastination and educational burnout of students (Pourfalahati et al., 2019), the drop in graduates' capabilities and the decrease in the quality of human resources (Glasser, 2012; Fatemi Amin and Fooladiyan, 2009), The prevalence of educational immorality among postgraduate students and turning it into a challenging issue (Hemati et al., 2017), dissatisfaction with the expected level of achievement of educational purposes (Salsabili and Ghasemi, 2005, quoted by Farhadpour, 2002), the deep gap between the level of purposes of the educational system, educational laws and the level of performance of learners (Obama, 2018), multiplicity in the way to improve the quality of education and training of learners (Glasser, 2012),

[DOI: 10.22034/5.4.100]

a severe lack of empirical research on courage in the research literature [especially on educational courage] (Hannah et al., 2010).

The word courage has roots in Latin, and the word core means heart. It may not be a coincidence that ancient people considered the heart to be the home of emotions and wisdom. In today's English language, the word bravery is practically considered a synonym for the word courage. In the American Heritage Dictionary, courage is a state or quality of mind or spirit that enables a person to face danger through self-control, confidence, and clarity. Plato defined this term as the ability to remember what is worth valuing and what is worth fearing. According to John Locke, courage is the ability to fight against the dangers we fear and the injustices we feel. Pury and Woodard (2010), in their research on courage, in response to the fundamental question of whether courage is simply the manifestation of behavior that leads to praise and admiration or is it a process,] have examined the concept of courage from the perspective of other experts. He quoted Norton and Weiss (2009) defined courage as consistency or persistence in the face of fear; Pury and Woodard (2009) defined it as the deliberate pursuit of a worthy purpose despite the perception of personal threat and uncertain outcome and quoted Patterson and Seligman (2004) as emotional strengths that require the exercise of the will to perform the purposes in the face of conflict, external or internal. Finally, Rate et al. (2007), in a comprehensive study using a multi-method approach, defined courage as an intentional, self-directed action performed after mindful deliberation, initial arousal leading to a noble good or worthy end, despite, perhaps, the feeling of fear. Commonalities are key among the major conceptualizations of courage, risk, fear, purpose, and action (Hannah et al., 2010). According to Rate (2010), the common characteristics of courage show the convergence of data in the mixed method review of folk conceptualizations and point to seven main characteristics of courage, which include external conditions, cognitive processes, motivation towards excellence, emotion/excitement, will, behavioral responses, personality features/traits/ skills and abilities. Walton (1986) mentions three aspects of courage: Careful presence of mind and deliberate action, difficult, dangerous, and painful circumstances, and morally worthy intention under the possibility of personal harm and suffering. Klein and Napier (2003) have also pointed out five characteristics of candor, purpose, rigor, possibility of risk, and will (Rate et al., 2007). As inferred from the research literature, courage is significantly predicted by purpose value,

[DOI: 10.22034/5.4.100]

and the inclusion of purpose value is an important component in the definition of courage. In this study, according to the theoretical foundations, five general concepts of the purpose (with two levels of performance learning and mastery learning), covert cognitive action (with two levels without mindfulness of unrealistic evaluation and real mindfulness/evaluation), overt emotional-performance action (with two levels cowardly and brave level), repetition of response (with two levels of non-repetition of response and repetition of response) and authenticity of response (with two levels of inauthentic/lack of integrity of behavior and authentic/integrity of behavior) have been examined. The effort is to obtain good results for oneself and others, and purpose orientation indicates a coherent pattern of beliefs, documents, and individual emotions that shows the way of orientation towards success and the way of doing activities. There are two types of mastery learning purposes and performance learning purposes. Mastery learning purposes have a higher level and status compared to performance purposes and are original purposes. The purpose of mastery learning is the desire to acquire competence, the means of acquiring additional knowledge or mastering new skills, while the purpose of performance learning is the desire to receive favorable judgment from others or not to look bad and not to receive unfavorable judgments. Learners with mastery learning purposes tend to engage in activities that help them learn, so they have healthy perspectives on learning, effort, and failure. On the other hand, learners who have performance purposes stay away from highly challenging assignments and make minimal efforts to achieve desired results (Armrod, 2015). Covert cognitive action is an active and all-around realistic mindfulness evaluation of the current situation, accurate and correct evaluation of weaknesses and strengths, threats and opportunities on a mental scale, during continuous and dynamic monitoring. People's mental awareness of themselves and their situations (Pintrich et al., 2015) and full awareness of the limits of their personal and social rights and others (Pourfalahti, 2018) have a direct relationship with courage. Regarding emotional-performance action, it can be said that bravery is a key concept in describing and explaining courage as optimal behavior, and the brave person is able to separate the emotional and behavioral components of fear, resist the evasive-behavior reaction and face a completely scary situation in contrast to the discomforts of production. It is related to mental and physical reactions. Repetition of the response also indicates persistence and the ability to complete the work of activities and persistence in performing actions and behavior and continuous and persistent effort (Seligman, 2011). Perseverance requires intense

[DOI: 10.22034/5.4.100]

effort and continued interest in purposes, despite failures, lack of progress, and difficulties, and can be as important as other cognitive traits, such as intelligence, to achieve success in life. Regarding the authenticity of the response, we can refer to Tolman's opinion, who believes that the behavior should be studied at an integrated level, and breaking the behavior into separate reflections of the stimulus-response makes the meaning and purpose of that behavior dark and ambiguous (Armrod, 2015).

Beyond general and personal approaches to courage, the classification of forms of courage has also been theorized. These forms include social courage (Asch, 1955), moral courage (Deutsch, 1961 and Kidder, 2003), physical courage (Peterson and Seligman, 2004; Rachman, 1990; Suedfeld, 1997), psychological courage, and educational courage (Hanna et al., 2010). Scales have also been made to measure each form of courage. Schmidt and Koselka (2000) developed a short scale to measure general courage. Woodard (2004) developed a courage scale based on items that included differences and potentially stressful life events. Konter and Ng (2012) built a sports courage scale that recognizes courage in different sports fields and includes the basic factors of determination, mastery, and decisiveness based on self-confidence/ assertiveness, venturesome, and self-sacrifice behavior. Woodard and Pury (2007) developed a scale (Woodard-Puri Courage Scale-WPCS-23) to measure different types of courage. This scale consists of a four-factor construct: Work/employment courage, patriotic, religious, or belief-based courage, social-moral courage, independent courage, and family-based courage. GReitemeyer et al. (2007) also created a scale of civil courage that measures three factors of civil courage in the workplace, physical violence and racism (Pro´chniak, Piotr, 2017). Maybe it is possible to obtain a relatively comprehensive and complete definition for each of the forms of courage or to find a scale to measure it, but unfortunately, very little attention has been paid to educational courage. There is no comprehensive and complete definition for it. On the other hand, no tool can be found that has linked the measurement of activity in threatening natural environments to courage, so the claim of Hannah et al. (2010), who believe that there is a severe lack of empirical research on bravery in the research literature is proven once again. On the other hand, among all types of courage, dealing with educational courage in the form of conducting scientific research is very necessary because the results of the conducted research and the available statistics point to the existence of a deep

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gap between the level of the purposes of the educational system and the level of performance, especially in the field of education and training. Therefore, conducting qualitative studies and analyzing existing content around recognizing the nature of optimal qualitative behavior under the title of educational courage and determining its constituent components to improve the quality of learners' behavior through the appropriate use of available resources and facilities seems important and necessary. Therefore, in this research, the researcher is trying to provide a comprehensive definition of authentic educational courage by studying the research literature in depth, and since the present research is one of the first in the field of the research subject, it is necessary to do it to the best of his ability and facilities while examining related scientific texts and with the support of scientific research in this field, first found the best form of behavior in the situations facing the person (optimal behavior in the field of education) and then, based on the main premise of his research, to specify and define the construct of educational courage as the best form of the general qualitative behavior of learners in (perceived) traumatic educational situations.

Materials and Methods

The present research is of a hybrid type (qualitative and quantitative) with a sequential heuristic approach. In the qualitative part, the phenomenological approach of the descriptive type or the Colaizzi analytical-inferential approach has been used, and in order to validate the qualitative data, in addition to objective observations and extensive and continuous studies, the technique of triangulation of data sources and the technique of triangulation of theories (using different perspectives for data interpretation) has been used. In this research, the works of selected experts Alport, Seligman, Glasser, Bertalanfi, and Lazarus-Folkman were examined, which include 38 books in print (34 Persian books, four books in English, and five electronic books) and seven theses and 75 articles (54 Persian articles and 21 foreign articles) and six online resources and videos. The mentioned sources were carefully studied, and at the end of the study of each source and work, detailed notes were taken. Important sentences and information with a specific meaning related to the phenomenon under discussion, and from each sentence, a concept that expresses the meaning and essential part of the individual's thinking has been extracted, and then the compiled concepts are categorized based on similarities. In the next step, the results are linked together. It was placed in more general categories for a comprehensive description of the studied phenomenon. Finally, as

[DOI: 10.22034/5.4.100]

much as possible, a comprehensive description of the studied phenomenon was presented with a clear and unambiguous expression. To check validity, believability, transferability, and verifiability have been used.

In the quantitative part, a questionnaire was used to measure the level of authentic educational courage of the learners. In this way, based on the Facet Theory and the principles of constructing the guide sentence, first, the facets of the desired construct and their dual levels were prepared in the form of a guide sentence table based on the final summary obtained from the content of the qualitative section. The five facets of the construct were considered in two minimum and optimal limits of behavior. Taking into account all the impossible possibilities, with the opinion of the expert in the field of measurement and measurement (according to the formula $2^n=2^5=32$), 32 possible combinations, the necessary items were prepared by the researcher and all the situations whose existence in the real world is illogical and the background of the research did not support them (9 modes) were removed, and finally, 23 constructs or sentences from the remaining combinations were prepared and edited. After evaluating the validity of the expressions through a number of students and receiving feedback, initial corrections were made. After several scientific revisions, the final questionnaire was prepared to determine the scientific validity of the research construct. The statistical population was the students and graduates of different courses of the Ministry of Science, Research and Technology of the country (entered in 2011 to 2020), and the sample size was selected using the multi-stage cluster random sampling method. In this way, first, the ten regions of the country were divided into three northern, middle, and southern regions, and two provinces were selected from each region, and a total of 6 provinces were selected. By emphasizing the facet analysis method, based on the five facets included in the guide sentence and for each facet, 100 participants and at least 500 people were considered, and 636 participants responded to the items due to the design style of the questionnaire in Google Form (Avoiding unanswered questions). All items were responded to by the participants on a 5-point Likert scale (never, sometimes, half of the time, most of the time, and always).

[DOI: 10.22034/5.4.100]

Results

Research findings in the qualitative part

The main hypothesis of the research is to define the construct of authentic educational courage in the form of a guiding sentence based on the Facet Theory, which is based on the Set Theory (parent) and the Facet Theory (child) with the method of smallest space analysis (SSA) by expressing the relationship between 4 fundamental components. This definition includes situation, stimulus, responder, and response. Therefore, the main hypothesis of the research is to define the construct of authentic educational courage as optimal behavior (due to personal capacity) of the learner, in the face of a traumatic (perceived) educational challenge, until achieving a transcendent purpose (mastery learning) which is shown in Table (1) in the form of a guide sentence based on Facet Theory.

Table 1. The main hypothesis of the research in the form of a guide sentence based on the Facet Theory

When a student (Ali/Sara) achieves a purpose:													
a1. At a low level of significance (performance)	With one	The traumatic (perceived) educational challenge	is faced; following an involuntary reaction, action	b1. Without mindfulness (unrealistic evaluation)	and	C1: Cowardly	As	d1: Discontinuous (without perseverance) (2 or more times) (halfway)	and	e1: Inauthentic (no integrity) (hypocrisy/duplicity) (pretentious)	In the range	1- Never ۲- Sometimes ۳-Half of the time ۴- Most of the time ۵- Always	It manifests itself.
a2. At a high level of significance (mastery learning)				b2. Mindfulness realistic evaluation)		C2: Bravery		d2: Continuous (With perseverance) (how many times) (until completion)		e2: Authentic (Integrity) (unity/oneness) (Honestly)			
First facet: A: Purpose level		**situational stimulus**		**The second facet: B: covert action (cognitive)**		**The third facet: C: overt action**		**The fourth facet: D Repetition of response**		**The fifth facet: E The authenticity of the answer (thoughts, speech,**		**Response scope**	
				Response range									

The five main two-level facets of the research content set, respectively, facets A, B, C, D, and E, include:

[DOI: 10.22034/5.4.100]

A: First facet: the purpose facet (internal motivation: a high purpose in the overall view; the internal motivating factor that motivates and directs during the behavioral period) in two levels (a1: the first level of the first facet: a performance purpose with a low level of significance, a2: the second level of the first facet: mastery learning purpose with a high level of significance),

B: Second facet of covert (cognitive) action in two levels (b1: the first level of the second facet: no mindfulness/unrealistic evaluation/incomplete evaluation and b2: the second level of the second facet: mindfulness/active learner real evaluation),

C: Third facet: overt action (emotional-performance: management of emotions, especially fear, and action with passion or without it, in two ways, cowardly or bravery) on two levels (c1: the first level of the third facet: cowardly, and c2: the second level of the third facet: bravery),

D: Fourth facet: repetition of response in two levels (d1: first level of fourth facet: non-repetition of response/no persistence and d2: second level of fourth facet: repetition of response/with persistence),

E: Fifth facet: authenticity of response on two levels (e1: first level of the fifth facet: inauthentic/lack of integrity of behavior/pretentious behavior and e2: second level of the fifth facet: authentic/integrity of behavior/honest behavior). The concepts used in the definition of the construct and the guide sentence are described in Table (2).

Table 2. Description of the concepts used in the definition of the construct and guide sentence

To:	Referring to the type of behavior of the learner
Optimal behavior:	Moderate behavior depending on the educational situation and the challenge ahead; neither extreme behavior nor exaggeration (neither minimum nor maximum)
Authentic educational courageous behavior (optimal educational behavior)	Complicated behavior depends on learner experience (due to personality capacity) at an optimal level (with a strategic approach) and not a minimum (with a superficial approach) or a maximum (with an extreme depth approach) in facing a traumatic (perceived) educational challenge.
Covert action (cognitive):	During continuous and dynamic monitoring, active and realistic mindfulness evaluation of current conditions, accurate and correct evaluation of weaknesses and strengths, threats and opportunities on a mental scale.
Overt action (emotional performance):	Contrary to the usual physiological and mental reactions, Courageous action is in the form of managing emotions and the situation through the optimal application of coping strategies, along with vitality, energy, interest, passion, and enthusiasm.

[DOI: 10.22034/5.4.100]

Uncourageous educational behavior (minimal educational behavior)	Complicated behavior is related to the learner experience (caused by personality capacity) at a minimal level (with a superficial approach) in the face of a traumatic (perceived) educational challenge. This behavioral response continues without mindfulness and following the lack of management of the emotion of fear and discouragement until the learner's cognitive purpose is achieved at a low level of significance (just acting) and the learner acts pretentiously.
- Arising from:	Originated from...
Personality capacity:	The capacity is based on a talent that is revealed indirectly, but it is subject to a series of previous conditions, among which the degree of development and neurological and organ development (or vice versa, the degree of degradation), education and training, or learning and practice should be mentioned.
Learner:	Learner, student, whoever is busy searching for knowledge and learning it.
In facing:	Facing and confronting or, in other words, being exposed to...
Traumatic educational challenge (perceived):	The situational stimulus is the challenge or issue related to the external objective reality, difficult and complex, new and future-oriented, which is presented to the learner or the learner faces in the study situation (including the traumatic environmental factors, both physical and social, of the study situation) and the learner perceives it as traumatic.
To achieve:	On the way to achieve..., when a person tries to achieve his desired purpose, although he may not achieve the purpose despite his continuous efforts for a long time, he does not deviate from the path.
Transcendental purpose:	A high-ranking purpose in the learner's perspective among his reasons and purposes for being in the educational situation.
Mastery learning:	Learning to the level of mastery by doing the task, repeating the task, practicing the task, and acquiring skills in doing it and reaching the level of mastery in it.
Authentic educational courage:	It means a kind of courageous behavior in the educational situation, which is a process, over time and aimed at the future, along with maintaining the authenticity and integrity of the whole being of the learner during his entire activity.

The five facets of the construct were considered at the minimum and maximum limits of the behavior, and 32 possible combinations were created, among which nine situations that were unreasonable in the real world and did not support them in the research background were removed with the approval of the expert in the field of measurement. Table (3) shows all the possible combinations of the five facets.

[DOI: 10.22034/5.4.100]

Table 3. All possible combinations of the five facets considered

Q.N	Structure			
1	a_1e_1	$b_1c_1d_1$ 111	$a_1b_1c_1d_1e_1$	11111
2	a_1e_2		$a_1b_1c_1d_1e_2$	11112
3	a_2e_1		$a_2b_1c_1d_1e_1$	21111
4	a_2e_2		$a_2b_1c_1d_1e_2$	21112
5	a_1e_1	$b_1c_1d_2$ 112	$a_1b_1c_1d_2e_1$	11121
6	a_1e_2		$a_1b_1c_1d_2e_2$	11122
7	a_2e_1		$a_2b_1c_1d_2e_1$	21121
8	a_2e_2		$a_2b_1c_1d_2e_2$	21122
9	a_1e_1	$b_1c_2d_2$ 122	$a_1b_1c_2d_2e_1$	11221
10	a_1e_2		$a_1b_1c_2d_2e_2$	11222
11	a_2e_1		$a_2b_1c_2d_2e_1$	21221
12	a_2e_2		$a_2b_1c_2d_2e_2$	21222
13	a_1e_1	$b_1c_2d_1$ 121	$a_1b_1c_2d_1e_1$	11211
14	a_1e_2		$a_1b_1c_2d_1e_2$	11212
15	a_2e_1		$a_2b_1c_2d_1e_1$	21211
16	a_2e_2		$a_2b_1c_2d_1e_2$	21212
17	a_1e_1	$b_2c_1d_2$ 212	$a_1b_2c_1d_2e_1$	12121
18	a_1e_2		$a_1b_2c_1d_2e_2$	12122
19	a_2e_1		$a_2b_2c_1d_2e_1$	22121
20	a_2e_2		$a_2b_2c_1d_2e_2$	22122
21	a_1e_1	$b_2c_2d_1$ 221	$a_1b_2c_2d_1e_1$	12211
22	a_1e_2		$a_1b_2c_2d_1e_2$	12212
23	a_2e_1		$a_2b_2c_2d_1e_1$	22211
24	a_2e_2		$a_2b_2c_2d_1e_2$	22212
25	a_1e_1	$b_2c_1d_1$ 211	$a_1b_2c_1d_1e_1$	12111
26	a_1e_2		$a_1b_2c_1d_1e_2$	12112
27	a_2e_1		$a_2b_2c_1d_1e_1$	22111
28	a_2e_2		$a_2b_2c_1d_1e_2$	22112
29	a_1e_1	$b_2c_2d_2$ 222	$a_1b_2c_2d_2e_1$	12221
30	a_1e_2		$a_1b_2c_2d_2e_2$	12222
31	a_2e_1		$a_2b_2c_2d_2e_1$	22221
32	a_2e_2		$a_2b_2c_2d_2e_2$	22222

After removing the impossible combinations, 23 sentences were prepared and compiled, and after validity evaluation and several revisions, the final questionnaire on authentic educational courage was compiled.

Research findings in the quantitative part

636 people participated in this study; based on the results obtained from the demographic part of the questionnaire, 403 people (63.4%) were men, 233 people (36.6%) were women; 441 people (69.3%) were single, and 195 people (30.7%) are married; 170 people (26.7%) were graduates, and 466 people (73.3%) were students. The mean and the standard deviation of the age of the respondents was 25.98 ± 7.38 years, of which 393 people (61.8%) were in the age range of 21-30

[DOI: 10.22034/5.4.100]

due to the design style of the questionnaire in Google Form (Avoiding unanswered questions), there was no possibility of incomplete response, and no dropout occurred.

One of the main and important indicators of the fit of multi-dimensional stress scaling is that Strock (2000) presented the maximum amount of stress for a multi-dimensional scaling model based on the number of dimensions and the number of measured subjects, and in this study, according to the number of 23 structure, the value of stress in 1D, 2D, and 3D space is 0.471, 0.301 and 0.205, respectively. Table (4) shows the stress index values of the multi-dimensional scaling model in 1D, 2D, and 3D spaces.

Table 4. The values of the stress index of the multi-dimensional scaling model in 1D, 2D, and 3D spaces

State or statement number	Stress in 1D space	Stress in 2D space	Stress in 3D space
5	0.002	0.001	0.001
6	0.019	0.002	0.001
7	0.161	0.024	0.002
8	0.227	0.071	0.012
9	0.256	0.104	0.038
10	0.286	0.133	0.058
11	0.328	0.160	0.084
12	0.347	0.183	0.103
13	0.368	0.199	0.117
14	0.387	0.217	0.134
15	0.393	0.228	0.147
16	0.411	0.242	0.154
17	0.421	0.254	0.162
18	0.431	0.263	0.172
19	0.441	0.269	0.182
20	0.446	0.279	0.189
21	0.459	0.284	0.196
22	0.466	0.293	0.200
23	0.471	0.301	0.205

The stress value of the current model in 1D, 2D, and 3D space is 0.421, 0.101, and 0.0, respectively, which according to the stress table, is less than the maximum allowed stress in all three dimensions. In other words, statistically, both 1D, 2D, and 3D spaces can show the values obtained from the structure. Table (5) shows the coordinates of points in 3D space.

[DOI: 10.22034/5.4.100]

Table 5. The value of the coordinates of the points (structuple) in the 3D space

State or statement number	D1	D2	D3
1	-0.06473	-0.694636	0.0004479
2	-0.064473	-0.694636	-0.0004479
3	-0.155403	-0.729783	0.3959599
4	-0.080547	-0.440393	-0.085458
5	0.083082	-0.465432	-0.035364
6	0.083082	-0.465432	-0.035364
7	-0.02031	-0.195373	-0.168928
8	-0.02031	-0.195373	-0.168928
9	-0.02031	-0.195373	-0.168928
10	-0.028151	0.0331384	-0.040757
11	-0.028151	0.0331384	-0.040757
12	-0.100565	0.2555625	0.2055245
13	-0.111899	0.2511691	0.2549635
14	-0.111899	0.2511691	0.2549635
15	0.009585	0.2540.261	0.1069737
16	-0.218388	0.4702654	0.5645699
17	0.0467022	0.3516031	0.2734099
18	0.0467022	0.3516031	0.2734099
19	0.0467022	0.3516031	0.2734099
20	-0.212385	0.4725921	0.5383863
21	1.7345651	0.2294266	-0.385084
22	-0.668542	0.4291385	-1.338431
23	-0.144101	0.3419955	-0.674466

According to Table 5, the value of the residual sum of squares for this model is equal to zero, which shows the complete compliance of the 3D model with the experimental data obtained from the structure of this study, and shows that the model fits the data completely. Drawing the distance matrix of the points from each other in the 3D space also showed that the validity of each point is confirmed according to each facet. The membership of each point in each level of the dual levels of the five facets is presented in Table 6.

[DOI: 10.22034/5.4.100]

Table 6. The membership of each point in each level of the dual levels of the five facets

Levels of the first facet	Item number	Levels of the second facet	Item number	Levels of the third facet	Item number	Levels of the fourth facet	Item number	Levels of the fifth facet	Item number
1	1	1	1	1	1	1	1	1	1
1	2	1	2	1	2	1	2	1	3
1	5	1	3	1	3	1	3	1	5
1	6	1	4	1	4	1	4	1	7
1	9	1	5	1	5	1	13	1	9
1	10	1	6	1	6	1	14	1	11
1	13	1	7	1	7	1	15	1	13
1	14	1	8	1	8	1	16	1	15
1	17	2	9	1	9	1	17	1	17
1	18	2	10	1	10	1	18	1	19
1	21	2	11	1	11	1	19	1	21
1	22	2	12	1	12	1	20	2	2
2	3	2	13	1	17	2	5	2	4
2	4	2	14	1	18	2	6	2	6
2	7	2	15	1	19	2	7	2	8
2	8	2	16	1	20	2	8	2	10
2	11	2	17	2	13	2	9	2	12
2	12	2	18	2	14	2	10	2	14
2	15	2	19	2	15	2	11	2	16
2	16	2	20	2	16	2	12	2	18
2	19	2	21	2	21	2	21	2	20
2	20	2	22	2	22	2	22	2	22
2	23	2	23	2	23	2	23	2	23

According to the results of Table 6, it is possible to receive any point or state in the first facet, i.e. the purpose to which of the two levels of performance learning/mastery learning; in the second facet, covert (cognitive) action which of the two levels of without mindfulness (unrealistic evaluation)/mindfulness (realistic evaluation), the third facet means overt action (emotional-performance) to which of the cowardly/bravery levels; the fourth facet means the repetition of the response to which of the two non-repetition (without persistence)/repetition (with persistence) levels; the fifth facet means the authenticity of the response refers to which of the two non-authentic (pretentious, non-integrity)/authentic (honest, complete integrity) levels. Fig. (1) shows the map of points in 3D space with a line separating the surfaces.

[DOI: 10.22034/5.4.100]

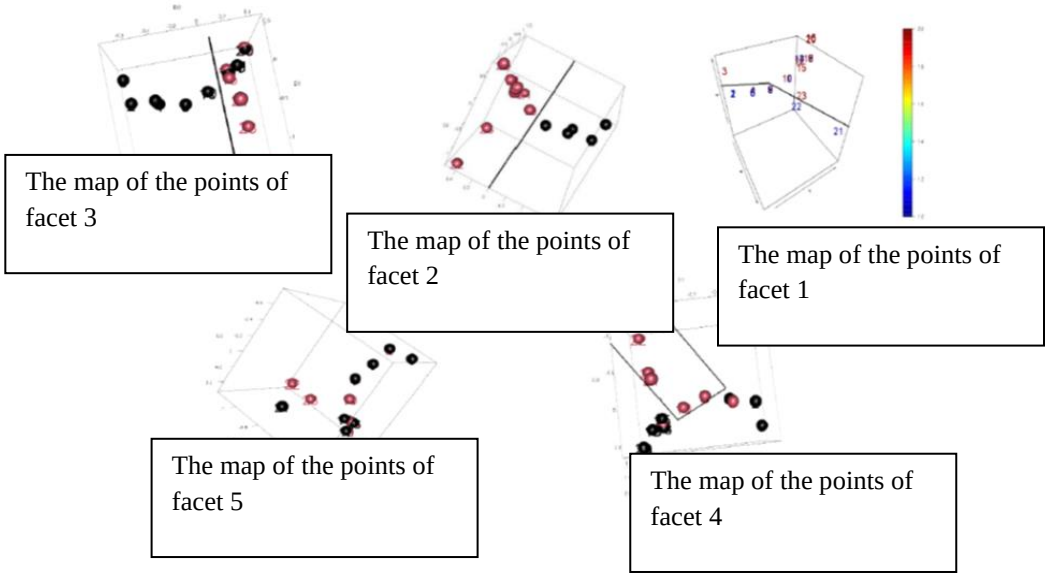

Fig. 1. The map of the points of the five facets in the 3D space with the line separating the surfaces

The map of the points of the five facets in the 3D space with the line separating the surfaces also indicates the confirmation of the points in the mentioned surfaces (Fig. 1). Therefore, quantitative data and findings supported by 3D maps under multi-dimensional scaling support all five facets in the findings of the qualitative section or heuristic definition.

Discussion

This research aimed to conceptualize and analyze the construct of authentic educational courage based on a qualitative study. For this purpose, a questionnaire was designed and implemented to measure this construct, which has five two-level facets, including the purpose (with two levels of performance learning and mastery learning), covert cognitive action (with two levels of without mindfulness/unrealistic and mindfulness evaluation /realistic evaluation), emotional-performance overt action (with two levels of cowardice and bravery), repetition of response (with two levels of non-repetition of response and repetition of response) and authenticity of response (with two levels of inauthentic/non-integrity of behavior and authentic/integrity of behavior), whose validity and reliability were measured and confirmed. In describing the findings of this study, it can be inferred that authentic educational courage means a kind of courageous behavior in the study situation, which is a process, over time and oriented towards the future, along with maintaining the authenticity and integrity of the learner's entire existence throughout his actions, and the meaning

[DOI: 10.22034/5.4.100]

is courageous behaviors of rare and occasional praise, or common and habitual bravery which may not occur temporarily, or without any feeling of fear and simply out of habit from the learner.

The map of points (structure) in the 3D space of the first facet (purpose) with the line separating the surfaces; the final map and the distance matrix of the structure show that the levels of the first facet are not completely distinguished from each other. The validity of structure nine belonging to the first level and four, eleven, and twelve from the second level does not support the division of structure into two levels. Of course, if structure ten is also considered to belong to the second level, structure eleven supports its belonging to the second level. Based on this, the empirical data supports considering this facet (with these two levels) in the definition of authentic educational courage in general, and if these conditions are fulfilled, that is, the mentioned structure is considered from the opposite level; they are equated with other structure which is usually on the opposite level, who in turn support the definition of authentic educational courage in their positions. Courageous behavior can be due to the authenticity of the purpose and other behavioral components. The findings of Rate et al. (2007), Rate (2010), and Seligman (2012), as well as the research of Pury, Starkey, and Olson (2023), support the inclusion of purpose value as an important component of courage is in line with the findings of the present study. Among the purposes of the field of education, the purpose of mastery of learning to perform authentic, courageous behavior is far more significant. Armrod (2015) and Pintrich and Shank (2015) have reported the superiority of the value of mastery purposes and its positive role in optimal educational performance while dividing dual purposes.

The map of the points (structure) of the second facet (covert cognitive action) in 3D space with a dividing line; in the final and 3D map, the structure of the second facet is fully valid. If structure nine is considered to belong to the first level of the second facet, empirical data supports this facet in defining authentic educational courage. According to the above findings, if this condition is fulfilled, structure eleven will be the same as structure five, which usually supports the definition of authentic educational courage in its position. Having mindfulness in educational situations causes positive changes in education and educational environments at an optimal level (Dortaj, 2020). Rate et al. (2007) consider mindfulness to be different from passive mindfulness, which enables a person to live fully in the present and unites a person with the world around him. In

[DOI: 10.22034/5.4.100]

Buddhism, the peak of human mental strength is defined as Nirvana/the highest state of consciousness. Mindfulness reduces mind wandering and improves cognitive performance (Mrazak, Franklin, Baird, Phillips, & Schooler, 2013). Emphasizing the findings of the research of Rate et al. (2007) was the active mindfulness/the accurate presence of the mind and distinguishing it from passive mindfulness; Glasser (2013) receiving a good feeling of doing quality work; Rate (2010) on the necessity of freely choosing actions in courageous behavior and bravery is defined as the willingness to act voluntarily by Woodard and Pury (2007), the necessity of responsible choice of thoughts and actions by the individual in qualitative behaviors (Glasser, 2013; Glasser and Glasser, 2016), the important role of the right choice in moral action (Hasani, 2013), the role of choosing a good action in having a good feeling (Glasser, 2012) and the motivational role of task selection (Pintrich and Shank, 2015) are all consistent with the present research findings.

The map of the points (structure) of the third facet (overt emotional-performance action) in 3D space with a dividing line; the final map and the matrix of the points' distances from each other show that if structure 12 is considered to belong to the second level of the third facet, the empirical data supports this facet in defining authentic educational courage, and if this condition is fulfilled, structure twelve with structure twenty-three equals that this structure usually supports the definition of authentic educational courage in its place. In the research results of Rate et al. (2007) and Dehkhoda (1962), the concept of courage is directly mentioned in the definition of bravery. Seligman (2012) and VIA Institute (2023) also refer to this concept as one of the main components of the concept of courage, especially in line with the results of the present research.

The map of the points (structure) of the fourth facet (repetition of the response) in the 3D space with the dividing line, the final map, and the distance matrix of the structure in the 3D space show that if the structure fourth from the second level and the structure twelve from the first level are considered, the empirical data supports this facet in defining authentic educational courage, and if these conditions are fulfilled, structure four will be the same as structure eight and structure twelve will be the same as structure twenty. These structures usually support the definition of authentic educational courage in their positions. The results of the research of Rate et al. (2007), Seligman (2012), Franklin (2012), Olson and Hergenhan (2011), Chang (2014), Alhadabi and Karpinski

[DOI: 10.22034/5.4.100]

(2020) emphasize the relationship between persistence and perseverance with the quality performance of an individual. If these conditions are fulfilled, structure four will be the same as structure eight, and structure twelve will be the same as structure twenty. These structures usually support the definition of authentic educational courage in their positions. The results of the research of Rate et al. (2007), Seligman (2012), Franklin (2012), Olson and Hergenhan (2011), Chang (2014), Alhadabi and Karpinski (2020) emphasize the relationship between persistence and perseverance with the quality performance of an individual.

The map of the points (structure) of the fifth facet (authenticity of the response) in the 3D space, separated by levels; if structures ten and eight are considered from the first level of the fifth facet, they support the validity of this facet in the guide sentence. Therefore, this facet also empirically supports the definition of authentic educational courage through structure, and if these conditions are fulfilled, structure ten is equal to structure nine, and structure eight is the same as structure seven. This structure also usually supports the definition of educational courage in their positions. Courageous behavior is considered a complex, multifactorial behavior with a different quality from simple and superficial behaviors. Glasser's explanations about the constituent components of general qualitative behaviors (Glasser, 2013; Glasser and Glasser, 2015), the existence of several personality strengths under the title of the virtue of courage by Seligman (2002, 2012, 2012), and VIA Institute (2023), confirm this finding. Also, courageous behavior is an integrated and purposeful behavior that is organized and guided under the open and dynamic system of personality. The explanations of Olson and Hergenhan (2013) about the characteristics of general behaviors, Glasser's (2014) statements about qualitative general behavior, and the underlying assumptions of Ludwig von's theory of open and dynamic systems (Newman and Newman, 2015) confirm this claim.

The present research has some differences compared to other previous researches, which can be mentioned: specifying the unique construct of authentic educational courage in a scientific way in the field of educational psychology; process and hierarchy of the mentioned definition; using the hybrid qualitative research method (descriptive phenomenological method of holistic view/Facet Theory) to cover and organize all structural facets (in the form of a guide sentence table as a road map), double-leveling each facet of the definition, and tripling the sub-components of the overt

[DOI: 10.22034/5.4.100]

actions of the response field; adding the key component of mindfulness evaluation (active learner realistic mindfulness evaluation) to the components in the previous definitions of courage based on the knowledge of measuring the learner (especially in educational situations), moving the component of vitality from the set of four dimensions of courage in Seligman's definition; and making it a member of the field of optimal overt action (bravery emotional-performance action), selection and application of the concept of challenge in its specific meaning in defining the original type of educational courage construct; selection and application of the concept of personality capacity in its specific meaning (the origin and support of optimal behavior), selection and application of the optimal model of multi-dimensional symmetric rank scaling and network analysis under the Lwmds algorithm, for the analysis and validation of the heuristic definition presented in the form of a guide sentence.

The process of this research, like other research, has been accompanied by limitations, the removal of the maximum limit of behavior (daring behavior) from the scope of the research, the lack of research on other dimensions of the cognitive process of the part of the covert action from the response range, the lack of research on the sub-components of the overt action (emotional-performance) from the response range, the lack of validity of the measurement of the mentioned structure to the separation of different categories of participants (including native, cultural, national, religious, sexual differences, development, etc.) can be mentioned.

For this purpose, it is suggested to future researchers study the maximum limit of behavior (daring behaviors), other dimensions of the cognitive process of the covert action part of the response range, and the sub-components of the overt action part (emotional performance) of the response range. Also, the use of a paper questionnaire and face-to-face communication with the participants to directly monitor the implementation process and measure the credibility of the aforementioned construct by different categories of participants (both native, cultural, national, religious, gender differences, growth, etc.) and designing quasi-real situations to objectively measure this construct and conducting cognitive interviews along with using questionnaires are other research suggestions.

[DOI: 10.22034/5.4.100]

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

In this research, moral points and considerations, including the principles of secrecy, confidentiality of personal information, preserving the privacy of samples, etc., were observed, and this research has a code of ethics with ID IR.IAU.QOM.REC.2021.033 from the ethics committee of the Faculty of Medical Sciences of the Islamic Azad University, Qom Branch.

Author contributions

A.P contributed to the study conception and design, material preparation, data collection and analysis. The author contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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