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Providing a paradigmatic model of effective accounting education based on psychological styles

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ABSTRACT

Amazing human progress in today's world is the result of learning. In their interactions, humans transfer experiences to each other through the learning process. Today, everyone is aware of the importance of education and therefore in most advanced countries of the world, investment in education is of great importance and the learning process is considered the main essence of the education system. Therefore, the aim of the current research is to design an effective educational model based on cognitive and learning styles in accounting education. This research is applied and descriptive in terms of purpose. The research method is qualitative. The statistical population of this research is 18 university experts in the fields of accounting, educational management and psychology, 11 of whom were selected using the snowball sampling method and the theoretical saturation point. The semi-structured interview data collection tool is derived from theoretical foundations.

Keywords:

effective educational model, cognitive styles, learning styles, accounting education, paradigmatic approach

1. Introduction

Today, because of their essential role in training human capital for the production and criticism of new knowledge and technology, job preparation, fostering critical thinking, providing strategies for social change and actively confronting global changes, universities are the key factor in sustainable social, economic, cultural and political development of societies. They are considered human. Therefore, at the same time as they enter international competition with different universities of the world, they are increasingly faced with various pressures such as the pressures of the labor market for the relationship with the industry and the demand of students, the pressures of the government against receiving public funds, the pressures of professional accreditation standards, the pressures of technology to use Online learning and scientific pressures are facing to maintain the international position in teaching. In this way, while higher education becomes a technological and international commodity, these pressures focus on the issues of education quality as a distinguishing indicator of universities. In Iran, the increase in accounting students and graduates is proof of increased investment and spending more financial resources in this regard. This increase in number is quite noticeable, especially in the undergraduate level, and with a small increase, qualitative evaluation becomes more important. The accounting education system is based on memorization and does not prepare students to face the complex business world that they will face after graduation; Therefore, the educational model of accounting is ineffective. Burston states that every country has its own political, social, economic and cultural characteristics, and it is very likely that the goals and information needs of the economic managers of each country are different from another country. As a result, each country should be encouraged to design and implement a system that suits its needs instead of imitating the structures and specifications of other countries' information systems. In this regard, checking the quality of education in accounting is extremely important.

Researches about cognitive learning styles have shown that if they are taught according to people's preferences in receiving and processing information, their academic progress will increase (Murray, 1980; Lovelace, 2002). Brown's findings show that "when learning styles are coordinated with consistent approaches in teaching, their performance motivation and progress increase" (Kang, 1999). Also, the learning style is different in different courses and disciplines; For example, the results of Kolb's research (2001); Quoted by Minakari, 2005; Hosseini Largani (1377); Rahmani Shams (1379) and Safari and Bazarafshan (1388) showed that there is a difference between learning styles in different courses and disciplines. Nojat (2011) and Lujan and DiCarlo (2006) showed in their research that the dominant style in students is the listening style. Cook, Salmonsen, Rowley and Davidson (2011), James, Demore and Thomas (2011), Murphy, Gary Sataraja and Bogert (2004), El Tantoy (2009), Dobson (2010), in their research showed that the dominant learning style Among learners of multiple (combined) style; This means that learners use several styles in their learning at the same time. Also, the learning style is different in different courses and disciplines. Also, Azadmenesh Azimian, Dighmi and Jahani Hashemi (2012); In a research, they showed that the highest average is related to reading and writing style. Ramadanpour, Bakhtiari, Sheikhi Kiasri and Farhadi (2014) showed that the dominant learning style of the students of the Faculty of Psychology and Educational Sciences was reading and writing style. Mohammadzadeh Qasr et al. (2014) showed that employees put listening style more than other styles as their first priority and their dominant style was identified as listening. Qadridoost and Danai Tousi (2015) showed that in the structure of Persian language textbooks, little attention is paid to writing skills and the teaching of speaking and listening skills is neglected. Hancock believes that accounting graduates should have the necessary efficiency in relation to soft skills including critical and analytical thinking, problem solving skills, questioning, and the ability to apply negotiation skills with business owners and strategic actions. Today, accounting educators are using methods such as case-based learning, role-playing based learning, or using simulation to deeply understand students and develop creativity and critical thinking skills (Qadri Doost, 2015).

In general, information is transmitted in many ways and many times it is lost due to lack of awareness or better alignment of these learning styles. If instructors teach exclusively in one style, students with different styles will feel uncomfortable and may not perform satisfactorily. In order to help the process

of identifying learning styles, researchers from different fields are working on several learning style inventories. Some theories are more related to the internal aspect of the person, while others are more related to external elements. Examples of these approaches are the studies conducted by Kolb (1985), Myers-Briggs (1970) and Felder-Solomon (1991) (Silva et al., 2007).

According to cognitive theories today, a person is successful in learning who has mastered the way of learning (Safari and Bazarafshan, 2008).Therefore, identifying the learning and cognitive style helps in effective education (Fleming, 2014). (Banta, 1999) believes that by knowing the method of processing information and evaluating the learning style of learners, it is possible to help them to take steps towards the high goals of education (Alai, Fathi Azar and Abdullahi Adli Ansar, 1392) what is certain regardless of learning styles and cognitive and presentation of a single model, the educational system will face many problems.

Until now, there have been limited studies in the world that are directly similar to the current study in terms of the discussed topic and have investigated learning and cognitive styles in accounting education. Weck and Nicklai (1997) used the MBTI instrument as part of an exploratory study to measure the preferences of 94 graduate, 152 undergraduate, and 98 accounting faculty members from 1991 to 1994 at Midwestern universities. This study considers potential changes in teaching methods according to the types identified. The authors came to the conclusion that students and instructors, knowing each other's teaching (learning) style, can bring valuable achievements such as productivity and quality in courses and careers. In Brazil, the study by Cornaccione Jr. (2004) distinguishes itself as one of the main Brazilian academic works examining this area. Cornaccione Jr. studied instructional technologies in accounting education and, according to the author, when students' learning styles are known, educators have a better chance of achieving their goals.

In Iran, studies in this area and in the field of accounting learning have not been done so far, so this study tries to provide an effective educational model based on cognitive and learning styles in accounting education.

2. Theoretical foundations and empirical background of the research

1-2 learning

Many ordinary people and even psychologists considered learning to be the transfer of information to the learner, and in their opinion, learning has taken place as soon as the learner has acquired the information, and the role of the teacher is to transfer information to the students. But with the progress of science and change in the human sciences, the concept of learning has also changed and improved. Nowadays, learning is referred to as changing behavior due to experience. In this sense, learning is a permanent thing that is different for different people, and during the process of learning, the whole personality of the person, the environment and the situation in which the person is placed are effective. Learning in this sense is closely related to what American philosopher John Dewey said about education. John Dewey was one of the philosophers who attached importance to acquiring knowledge through experience. Different definitions of learning have been provided, which can be mentioned below:

- Relatively permanent transformations that a person acquires as a result of experience, new ability and talent to respond.
- Learning is the process of creating a relatively stable change in a person's behavior or behavioral ability, which is the result of experience, and it cannot be attributed to temporary body conditions such as those caused by illness, fatigue, or drugs (Atkinson et al., 2019).

The second definition is almost more complete and comprehensive and more accepted. Several important concepts are mentioned in this definition, which include: relatively stable change, behavior change and behavioral ability and experience, these concepts indicate that any kind of change is not called learning.For example, temporary changes, such as having a lot of energy after consuming energizing substances, are not considered learning because they are temporary and do not remain stable, and the change must be made in the person's behavior and behavioral ability (thoughts, attitudes, and behavior) and if no change is made, it is not learning. has not taken Another important concept is experience. It means that learning should be the result of experience

and the change that occurs in a person should be the result of experience, not the result of maturing or aging and other cases. Azobel (1968) introduces the effective factors of research as follows (Afzal, 2016):

1) Cognitive factors and factors: which includes the cognitive structure and cognitive style of the learners as well as the mental ability of the learners and their individual differences in intellectual ability.
2) Emotional and social factors:

which includes motivational factors such as cognitive drive, reward and punishment, and values and attitudes, learner personality factors, and group and social factors that include classroom atmosphere, student intergroup relations, and teacher characteristics (Badele et al., 2016).

2-2 .learning conditions

According to Ganieh, learning is the product of two types of conditions:

1) Internal conditions
2) External conditions

The criterion for determining these conditions is the pervasive mind. That is, what should be pervasive in the mind during learning is the internal conditions. In fact, the internal conditions are a set of previously learned abilities that become effective through a set of transformation processes. For example, a child who learns to write the word book, this learning is based on his previous learning and is created with their help. In fact, the child has already learned how to write letters K, T, A and B.

The second category of learning conditions is external. That is, what is done during learning outside the pervasive mind, for example, by the teacher.

The occurrence of learning is inferred from the difference in human performance before and after being in a learning situation. Previously learned abilities form the necessary internal conditions for learning. These internal conditions are effected by a series of transformation processes. The second category of learning conditions is external to the learner. Consider a person who has all the previous abilities to multiply two numbers, there is no particular reason to suppose that the external conditions necessary for learning one of these are the same as those necessary for learning the other. Two different types of abilities are learned without the same conditions. They not only require different prior abilities, but also require different external conditions for learning. The learning of any new ability starts from a different point of previous learning and probably requires an external situation as well.(Saif et al., 2015)

2-3 Cognitive styles

These styles refer to how the learner understands, remembers, thinks, and solves problems.

Among the introduced learning styles (cognitive, emotional and physiological), the cognitive style based on Kolb's theory was chosen. Kolb has categorized cognitive styles in another way, which is rooted in Guilford and Piaget's theory. Guilford divides thinking into two categories, convergent and divergent, and Piaget, in the course of mental evolution, categorizes how to think in two ways: absorption and adaptation. In his division, Kolb has obtained four divergent, convergent, assimilative and adaptive styles as a result of combining four learning methods with the names of objective experience, reflective observation, abstract conceptualization and active experimentation (Kiahosseini, 2014).

2-4 cognitive and metacognitive strategies teaching techniques

Due to the great focus on the theoretical dimensions of metacognition that has dominated metacognition research since the 1960s, recently there has been a great focus on the educational application of metacognition. Many researchers have shifted their focus from theory to practice and from the laboratory to the classroom. For example, Burkowski and Musokrishna (1992) believe that metacognitive theory has considerable potential to help teachers. So that they try to establish a class that is focused on strategic learning that is both flexible and creative.In this connection, Paris and Winograd (1990) believe that students can increase their learning by becoming aware of their thinking when they read, write, and solve problems in school. Teachers can increase their awareness directly by informing their knowledge. Motivate students about effective problem solving strategies and discussion about cognitive and motivational features of thinking (Koch, 2018).

Metacognitive skills may be taught alone or in combination with other educational programs. The general belief is that metacognitive skills should be

taught in curricula as a series of separate educational programs, however, even some adolescents with mild mental retardation and most adolescents with moderate mental retardation need explicit metacognitive training.The main issue is whether metacognitive processes facilitate learning, many educational researchers and experts have answered this question positively (Jacobsen, 2019).

Increasing evidence shows that cognitive and metacognitive training programs are effective in improving student learning. These training programs cover a wide range of skill areas, including academic skills (such as reading and math), classroom behaviors (such as selective attention, task-related behavior).) emotional skills (including causal attributions), social and professional skills (interpersonal relationships, increasing the level of agreement) have been used. In this connection, several educational techniques have been introduced by researchers. including the action strategy of bilateral teaching, self-review, self-questioning, documentary retraining and self-learning. Here we will give a brief description of each of these six techniques based on the classification of head and head.Action strategy: It is a structured approach to education that is used for step-by-step teaching in solving academic problems, especially reading and math problems. Action strategy training programs include two major components, i.e. training plan and teaching activities. During educational planning, the teacher first analyzes the curriculum to determine the class of assignments to be used. After completing the plan, teaching activities that include the explicit teaching of task-specific cognitive strategies are used. Of course, this is possible after the teacher is sure that the students have mastered the prerequisite skills. Due to the fact that this strategy does not increase metacognitive control methods, according to the experts' suggestion, in order to maintain and generalize the strategy being taught, it is better for teachers to use the action strategy along with self-education (Sechini, 2021).

Two-way teaching: This method is a conversation between the teacher and the student and is done in order to understand the meaning of the text. The use of metacognitive skills in learning the text is cultivated while using this method. Especially when reading the text for the purpose of obtaining information, using this method increases understanding, comprehension and recall. Two-way teaching involves teaching the four strategies of summarizing, questioning, explaining, and predicting while reading a text. In this connection, the teacher first deals with the modeling of strategies and gradually his role during teaching is reduced and instead more responsibility is given to the students (Ormetzer, 2020).

Self-monitoring training: Self-monitoring is defined as a person's self-assessment of the achievement of a target behavior, which is usually followed by a personal report of the event. This method is also known as self-discipline, and usually in its implementation, the technique of self-restraint is used to change cognitive behavior. The success of this method is very evident in task-related behaviors (Tang, 2019).

Teaching self-questioning: This technique requires teaching students to generalize their questions while reading the text to increase understanding and comprehension, which is mostly used in the field of reading to learn or learn the text, and with their own questions such as: Why am I reading this paragraph? And what is the main information in this paragraph? It is accompanied (Shu, 2016)

Documentary retraining: is an intervention approach that aims to solve students' motivational problems in learning and analyzes the process of students' causal documents about their success and failure in academic assignments. Attribution retraining programs are designed to train students and change maladaptive motivational patterns in the context of attributing their problems to adaptive motivational patterns in the context of their problems, such as controllable factors such as insufficient effort or ineffective strategies. Document retraining programs will be most effective when combined with specific training in using appropriate strategies to complete assignments (Saha, 2019).

Self-study: Self-study is a set of methods developed to train students in gaining conscious personal control over the learning task and using self-talk for strategies in the problem-solving process. Its application has been expanded from teaching academic skills to a wide range of learning domains, including skills in cognitive and emotional domains. These methods were developed by "cognitive behavior change" researchers, and unlike traditional methods that emphasize observable behavior change, they seek to promote learning in unobservable thought processes. Self-learning is based on the theories of

Luria (1961) and Vygotsky (1962) quoted by Kell and Chan (1990), who claimed that language plays an essential role in overall cognitive development. In this connection, it is claimed that there are three stages through which children gain control over their behavior, first through adults' external speech, then children's own overt speech, and finally their covert speech. The last stage, or inner speech, has a mechanism that enables the child to perform cognitive operations (Riewrink, 2018).

5-2 Professional skills of accountants

The duties and functions of education have many subtleties and sensitivities. In order to establish an efficient educational system, it is inevitable to employ as many and better people as possible in the field of education and training and administration of schools. In an efficient educational system, there are various components and elements, including the program and teaching materials, learner, teacher, educational tools, space, equipment, budget and credits and so on. They interact with each other to make it possible to achieve the expected goals. But in the meantime, the "teacher" plays the most important role in providing suitable conditions for learning activities, and it is necessary to have the necessary qualifications to perform such a role in the educational system (Kiahosseini, 2014).

Today, active teaching methods that can strengthen students' activities and turn learning into a two-way flow are of special importance. The result of active teaching methods is effective and exploratory learning that students achieve with the guidance of teachers and coaches. Unfortunately, in most educational processes, there is a series of confused actions and the desired results and goals of learning are not achieved, and the class is a place of reproduction of knowledge and information, and the teacher tries to store all the information and concepts in the minds of the students. As a result, teaching and learning becomes the accumulation of information.It is obvious that the result of such a situation is only the strengthening of mental skills and creativity, innovation and the growth and development of talents are not desired, the teacher uses traditional and passive methods, the learners have a passive state, and concepts and lessons are presented to the students and knowledge Students do not participate in education, as a result, this learning will not be sustainable, and learners will not value it (Rahmanian et al., 2018). Considering these issues and problems, coaches and teachers are expected to have a new look at the process of education and its events, to bring about a huge transformation in the field of education. Skill in Persian culture means to be skilled in work, mastery, cleverness, agility and rough hand in work. But the professional skills of accountants in a conceptual sense are: Optimizing accountants' knowledge and awareness and various accounting skills is proportional to scientific progress and technological changes. In the international standard number 3 of accounting education, the scope of this standard for the professional qualification of accountants is given as follows (Mohammadi et al., 2019).

1) This international educational standard recommends the objectives of education for the professional skills of accountants applying to enter the accounting profession, which must be acquired at the end of the preliminary professional education. Professional skills include:
   a. Mind skills
   b. Interpersonal and communication skills
   c. Personal skills and
   d. Organizational skills based on which the professional accountant combines technical competence, values, ethics and professional attitude to demonstrate professional competence.
2) The addressees of this standard are member institutions of the International Federation of Accountants. These institutions are responsible for ensuring compliance with the requirements of this standard. In addition, this standard will be useful to educational organizations, employers, legislators, government officials and other stakeholders who support the education of accountants seeking to enter the profession.
3) This standard is specific to areas of competence and educational objectives that describe the professional skills required for accountants applying to enter the profession after completing the introductory professional training course. International Education Standard No. 2, entitled Pre-Vocational Education - Technical Skills (2021), and International Education Standard No. 4,

entitled Pre-Vocational Education - Professional Values, Ethics and Attitudes (2021), define the areas of competence and educational objectives related to their areas with They determine the focus on preliminary professional training. Together, these standards specify the areas of competence and learning objectives and determine the professional qualification requirements of accountants applying to enter the accounting profession after completing preliminary professional education.

4) Explanations and definitions of the main reforms of international education standards and the framework of international education standards for professional accountants and accountants applying to enter the accounting profession are presented in the glossary of terms of the IAESB International Accounting Education Standards Board

Research Methodology

The research method is of a qualitative type that is based on the grounded theory, the adoption of the grounded theory method is because this method makes it possible to build a new theory not based on the opinion of the researcher, but based on the data collected from the real environment and conditions. provides the real In this method, sampling continues until the researcher reaches theoretical saturation, that is, until it seems that no new data appears related to the category, the categories are sufficiently expanded and the relationships between the categories are established and confirmed. Therefore, 11 experts in the field of accounting and educational management and educational psychology were considered with the sampling method in the qualitative part of the interview in a targeted and snowball way. The purpose of qualitative data analysis is to explore common categories, constructs, concepts and dimensions; Discovering the relationships between these structures; Building a hypothetical theoretical model; and creating a basis for designing questionnaire items. In the systematic method of grounded theory, the steps of data analysis are performed through open coding, axial coding and selective coding, and it ends with the presentation of a logical paradigm or a visual image of the emerging theory. In this research, the diagram will be used as a method for integration. The categories will be revised several times, some rare concepts will be removed, and the consistency between theory and data will be checked. In this part of the research regarding the analysis of the data obtained from the interview, first by separating the interview text into elements with messages, open codes (concepts) are extracted, and in the next step, the concepts will be placed in the form of larger categories, in the second step, which is central coding. First, the main category is determined and then other categories are categorized in the form of causal factors, strategies, background factors, environmental conditions and consequences. Finally, in the stage of selective coding, the relationships between the obvious categories and the paradigmatic model of the theory arising from the data are provided.

4. findings

As mentioned before, the data collection tool at this stage of the research was face-to-face and in-depth interviews, in which the participants were asked about their observations, and the interviews were recorded so that by reviewing the conversations, a more detailed analysis and investigation was done. The views of the plan of the participants' views should be done. The interview protocol included nine main questions and a few questions regarding the introduction of experts, and sometimes due to the way the interviewees answered, some questions were removed in order to obtain clearer information. Theoretical sampling continued until the categories reached theoretical saturation; Theoretical saturation is a stage in which new data does not appear in relation to the category, the category finds a suitable scope and the relationships between the categories are established and confirmed. At the same time as the data was collected, their coding was also done. The interviews have continued until we have reached the theoretical saturation of the answers of the interviewees and the types of answers have not been repeated. In this research, the sample size is 18 elites. And in the 11th interview, saturation was reached.

1-4Coding procedure

In open coding, open sampling is done; That is, participants are selected as samples that provide the most opportunity to collect the most relevant data about the phenomenon under investigation; Basically,

in open sampling - as researchers - we are still not sure which concepts are appropriate from a theoretical point of view; Therefore, regardless of people's differences, we deal with it in an open manner and increase the number of interviews so that after each day's interviews and their analysis, we gradually come to the main list of questions and specific people who should be interviewed. Let's interview them specially, get them.

2-4 Labeling phenomena

In this method, we take an observed case, a sentence or a paragraph from an interview and divide it into parts and give a name to each of the events, ideas, or these events, a label that is either a sign of that phenomenon or a place. Now it may be asked how this is done? Our answer is that we raise questions about each of them, for example, how is this done? What does it represent? We compare events as we work and give a name to those that are similar. Otherwise we will have too many names which will cause confusion.

3-4 Discover categories

In the meantime, we may reach tens, even hundreds of conceptual labels. These concepts should be classified in such a way that similar phenomena are in the same group. When we have identified certain phenomena in the data, then we can group the concepts based on them. The process of classifying concepts that seem to be related to similar phenomena is called categorization. Axial coding is the second stage of phenomenological theory.Axial coding is a series of procedures with which, after open coding, by establishing links between categories, information is related to each other in new ways. This work is done using a paradigm called the central coding paradigm, which includes conditions, content, action / interaction strategies, and consequences. In axial coding, communicative and diverse sampling is required; The purpose of this sampling is to maximize the perceived differences. In axial coding, preliminary guesses are made about each of the categories and the relationship between them, and new questions are proposed to validate them; In addition, new comparisons should be made. Individuals should be selected that provide the greatest opportunity to collect data on variation along the dimensions of the categories and show what happens when change occurs.

4-4 Qualitative validity fitting methods

To ensure the validity of the first stage of the research that is, the accuracy of the findings from the perspective of the researcher, participants or readers of the research report.

- Adaptation by participants: Participants reviewed the axial coding paradigm and expressed their opinion about it; His views were applied in the axial coding paradigm;
- Participatory nature of the research: Simultaneously, the participants were helped in analyzing and interpreting the data;

4.5 Open coding

At this stage of the research, the concepts and key points obtained regarding the discussion of the effective educational model based on cognitive and learning styles in accounting education were listed in the interview process.

First, the concepts and key points obtained from these two main concepts from the process of studying the theoretical literature and the background of the researches conducted inside and outside the country were reviewed and listed. Phrases, concepts and objects extracted from the researches were done with detailed analysis, homogenization (choosing more correct words, removing common concepts) and 106 codes were obtained in this section. The obtained codes were prepared in the form of a checklist for conducting interviews, and by conducting interviews with experts, some of the obtained items were removed and modified.

During the open coding stage, the data were carefully examined, suitable expressions and concepts and related categories with specific dimensions and characteristics were determined and the pattern was examined. The main unit of analysis for open and axial coding was the concepts extracted from the interviews, the concepts were created by the researcher directly from the transcript of the interview and the items were obtained from the interviews.

4-6 axial coding

As mentioned, in the central coding section, the codes obtained in the free coding section are examined and studied, and related and similar codes are grouped together in larger categories. After preparing and adjusting the tables as part of the qualitative analysis

of the interview data, to complete the analysis based on free coding, the resulting concepts were grouped at a higher and more abstract level to achieve categories. Categorization is a process where concepts should be grouped. Because otherwise they will cause confusion. Therefore, once again, using the constant comparison of concepts with each other, each concept was compared with the concepts before or after it or with all existing concepts in order to extract general categories. Therefore, after comparing the extracted concepts, the related concepts were categorized in a general category and based on the titles in related theories or the concepts obtained from the research, general titles were considered for the categories.

Thus, after constant comparison of the answers obtained from the interview, similar answers were arranged and similar concepts were extracted from them. In addition, related items were merged and placed in 5 categories:

Category 1: causal factors

This category has seventeen codes, and finally, the codes "the need to pay attention to the difference in cognitive characteristics of professors, the need to pay attention to the skill characteristics of professors, the need to pay attention to the difference in students' learning" were selected.

Table 1. Codes of the first axial category

Main categories	Open codes	Repetition of codes
causal factors	Personality and academic characteristics of the professor	**3**
	Motivation and spending enough time to teach	**5**
	Simultaneous attention to practical and theoretical aspects of the field	**3**
	The necessity of thinking and studying about improving teaching methods	**3**
	Sufficient awareness and knowledge of teaching methods	**4**
	Familiarization with the principles and basics of accounting and the master's knowledge of how to transfer the content	**3**
	Mastery, understanding and implementation of accounting standards	**8**
	Students' attention to the way of logical thinking in the learning process	**3**
	Paying attention to the skills and educational capacity of students at different levels	**5**
	Attention to the academic level of the student	**8**
	Not all students are aware of the characteristics of their learning style	**9**
	Attention to the student's intelligence and scientific experiences	**4**
	The difference of learners based on personality theory, attitudes, emotional reactions, learning methods and styles, cognitive styles	**8**
	Attention to the student's intelligence and scientific experiences	**7**
	Characteristics, needs and interests of students	**5**
	Paying attention to the students' orientation in different grades	**6**

Category 2: contextual factors

This category contains seventeen codes. Finally, in this section, the codes of "students' individual differences in learning, environmental factors specific to each university, students' motivation and encouragement, and research-oriented culture of universities" were selected.

Table 2. Codes of the second core category

Main categories	Open codes	Repetition of codes
Background factors	Student participation in the learning process	2
	Biological preparations of the person	3
	Emotional and perceptual conditions of the person	3
	Functional differences of students during training	5
	Individual differences in learning	7

Main categories	Open codes	Repetition of codes
	Environmental factors of the learner	7
	The type of organizational culture in the university of study	2
	The type of process governing education	4
	Students not being aware of the characteristics of their learning style	5
	Giving students the opportunity to show their talent and ability	4
	Motivating students and creating an environment that encourages learning	6
	Encouraging students to think logically in the learning process	3
	Creating motivation and preparation for thinking in students	7
	Reaching the correct understanding and creating a solution with thinking	4
	Conducting applied research to evaluate teaching methods	5
	The necessity of thinking and studying about improving teaching methods	6
	Conducting interdisciplinary research and using the experiences of other countries	9

Category 3: Intervening factors

This category contains sixteen final codes. Finally, the codes of this section included "biological and individual factors, the type of thinking governing the university, existing laws and regulations, and the need to employ graduates in professions appropriate to their education" were selected.

Table 3. Codes of the third axial category

Main categories	Open codes	Repetition of codes
interfering factors	Emotional and perceptual conditions of the person	2
	Individual differences in learning	5
	Effective and timely evaluation of students	4
	Empowerment and promotion of professors	2
	Cooperation and coordination between professors of the group and qualitative assessment within the group	4
	Using teaching assistants in the classroom	5
	Coordination between teacher's teaching style and student's learning method	6
	Constructive, regular and timely feedback to students	9
	Educational rules and regulations	2
	Improving student evaluation and having appropriate criteria	4
	Amending the promotion regulations and creating incentives for the promotion of professors	5
	External evaluation and career of graduates	3
	Appropriate connection between university and profession	5
	Combining theoretical education with skill sections	6
	Creating connections between the profession and the university through professional associations	9
	Employing and employing students in professions that match their studies	9

Category 4: Strategies

This category includes twenty six codes. Finally, in this category, the codes of "adaptation of education to the individual characteristics of students, matching of learning and cognitive styles with the learning environment, awareness and nobility of professors to learning styles and equipping and awareness of professors to new educational methods" are selected.

Table 4. Codes of the fourth core category

Main categories	Open codes	Repetition of codes
Strategies	Using environmental factors optimally and in line with individual learning	
	Attention to individual differences	
	Various teaching methods	
	Identify learning styles	
	Providing an educational program tailored to the characteristics of the learners	
	Determining a suitable framework for gaining awareness and better understanding of how learning occurs in the accounting education process	
	Knowing the process of education and being aware of the new methods of its implementation	
	Knowing the learner and knowing the teacher and finally knowing the structural needs	
	Increasing awareness of learning methods for effective learning	
	Using paradigms of students' learning approaches	
	Use of cognitive information processing models	
	Identifying learners' abilities when facing organized and unorganized problems	
	Teachers' knowledge of how and types of learning styles	
	Knowledge of new teaching methods	
	Teaching critical thinking style	
	Understanding the relationships between ideas and using them in the decision-making process	
	Self-awareness of the existing cognitive system	
	Removing barriers to learning	
	Diversity in teaching methods according to the goals	
	Choosing teaching methods based on expectations and course content	
	Combined use of teaching methods	
	Choosing a teaching method based on the needs of the profession	
	Using the cooperative method of teaching	
	Using workshop and project methods	
	Transforming the classroom environment into an educational workshop	

Category 5: Consequences

This category includes nineteen codes. The final codes of this category are "desired learning and its application, convergence between profession and university, change of orientation from theory to theory-practical and efficiency of education system."

Table 5. Codes of the fifth axial category

Main categories	Open codes	Repetition of codes
Consequences	Classification of learning priorities	10
	Knowledge of existing cognitive systems	8
	Learning through specific experiences	8
	Learning by doing things	4
	Ability to do things	5
	Organized, appropriate and clear presentation of ideas	4
	Learning by doing things	11
	Learning through new experiences, games, role playing, etc	8
	Improving students' creativity	8
	Greater convergence of profession and university	9
	Creating a proper connection between the university and the profession	9
	Improving the level of knowledge and skills of students	7

Main categories	Open codes	Repetition of codes
	Expanding knowledge in the field of teaching methods	6
	Changing the thinking and attitude of professors	6
	Increasing educational effectiveness	5
	Change of orientation from limited knowledge to broad knowledge	4
	Identifying the differences between student groups and predicting the main jobs that students are interested in	5
	Considering students as social capital	6
	Efficiency and effectiveness of the educational system	6

Category 6: Axial factors

This category contains 12 codes. The core codes of this category include "amendment of laws, increase of technological capacities, capital circulation, development and facilitation of trade, technology, productivity and business environment".

In this step, similar and symmetrical categories were tried to be placed in the main themes. Based on the conceptual commonality that the categories had with each other, the themes were extracted in the form of more abstract concepts. After preparing and setting the table of initial concepts and categories as the first step of qualitative analysis of the information obtained from the interview, to complete this process, the resulting concepts were grouped at a higher and more abstract level to reach the main themes. After comparing the grouped categories, the categories related to each other were grouped into a general theme, and based on the titles in related theories or concepts arising from the research literature, general titles were considered for these themes.

Table 6. Sixth core category codes

Main categories	Open codes	Repetition of codes
Axial factors	Reducing the gap between professional expectations and university education and bringing theoretical knowledge and skills closer to the workplace	4
	Upgrading the educational system and updating the quality of education to meet the needs of the profession	2
	Adequate awareness and knowledge of teaching methods	6
	Attention to individual differences	5
	Internal motivation	4
	Professors should consider students' learning needs in the teaching process	5
	Improving the quality of accounting education as a general approach in teaching	9
	The teacher should adapt his communication and teaching methods as much as possible to the learning and thinking styles of the learners so that learning happens better and deeper	2
	Improving the quality of education through improving the quality of teaching methods	5
	Educational system support for students to learn skills	8
	Identifying learners' abilities when facing organized and unorganized problems	4
	Improving the quality of education in order to adapt to changes in technology	5

7-4 selective coding

The purpose of selective coding is to create a relationship between the generated categories (in the axial coding stage). This action is usually done based on the paradigm model and helps the theoretician to carry out the theorizing process easily. The basis of communication in coding is based on the expansion of one of the categories.

In the selective coding stage of the current research, the relationship of the main category with other categories was determined. At this stage, the main and secondary classes were connected with each other to produce theoretical concepts in order to provide an effective educational model based on cognitive and learning styles in accounting education. These actions allowed the researcher to integrate the concepts

obtained in the open and central coding stages and use them to provide a model for providing self-employment services. For this purpose, in the form of a qualitative research method, we identified the role of the extracted categories in the form of a paradigm model using the paradigm presented by Corbin and Strauss (2007).

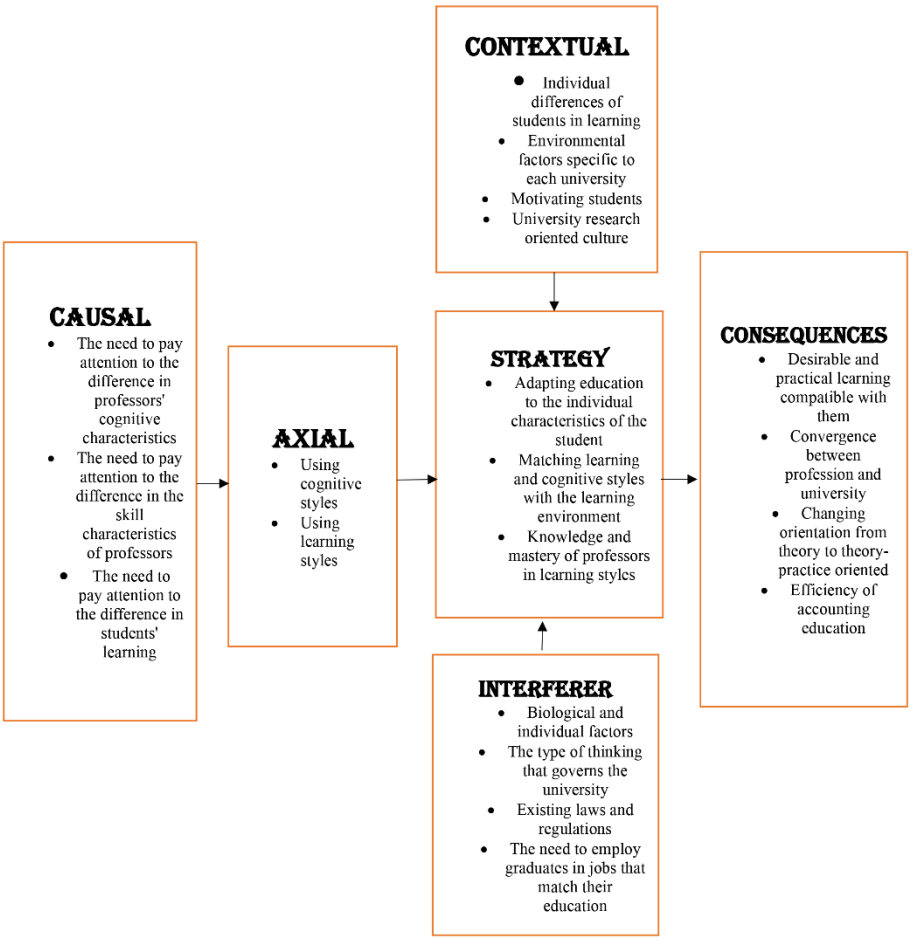

Diagram 1. Selective coding based on paradigmatic pattern

5. Discussion and conclusion

Due to the importance of the topic, during the last decade, the examination of the teaching abilities of academic staff members has been the focus of many researchers. The importance of this issue is that the fate of students depends on the professors and their level of competence in the field of teaching. Therefore, due to the attractiveness of the topic of exploring and explaining the expected competences of faculty members in academic environments, researchers have directed their studies in this direction.

Various studies have been conducted to determine the teaching competence criteria of professors, which have examined the views of students and faculty members. In the meantime, students' feedback on the quality of professors' teaching has been in the center of attention. Because this is both a justification of the performance and continuously improves the performance of professors in the education process. However, the mentioned studies have only addressed

aspects of the teaching competencies of academic staff members in academic environments. For example: in research, creating a favorable atmosphere for learning, actively involving learners, evaluating the knowledge, skills and attitudes of learners, facilitating the achievement of educational goals for learners, giving feedback to learners, knowing the level of competence and ability to teach oneself and cultivating self-leadership are important. The most important component of teaching competence is perceived by faculty members, which has a positive and meaningful effect on students' academic achievements. Table 1 briefly mentions some of these researches.

The need to pay attention to students' learning differences was the second most important component in this section. One of the important achievements of the research conducted on the topic of learning is self-regulated learning. Self-regulation in learning is one of the categories that deals with the role of the individual in the learning process. This structure was first proposed by Bandura in 1967. Self-regulation is important for the progress of socialization processes. Pintrich (1990), in a relatively comprehensive definition, defines this type of learning as an active and organized process in which learners choose goals for their learning and then try to improve cognition, motivation, and behavior. Regulate, control and monitor yourself. This process requires learners who independently design, monitor and evaluate their learning. Early research on self-regulation has a therapeutic nature, during which researchers taught their subjects to change behaviors such as aggression, addiction, and other behavioral problems. Researchers are now applying the principles of self-regulation to academic study and other forms of learning such as social and academic skills.Learning styles are among the variables that help learners in self-regulated learning. Individual differences in learning have long been the focus of education specialists. The idea that people's differences in learning are simply due to their differences in intelligence and ability was accepted in the world of education for a long time, but it changed later. Students have different learning styles, that is, they analyze and learn information in different ways. People's differences in learning partly depend on their intelligence and abilities; Therefore, factors such as personality traits, difficulty of tasks and differences in styles are also involved in this matter. In general, the term style refers to a person's dominant pattern in doing things. Learning style is a person's preferred method of learning.In 1974, David Kolb proposed his theory of learning styles in order to provide a better understanding of the different ways people learn. Styles, like abilities, are to a large extent the result of a person's interaction with the environment and can be developed and transformed. Therefore, styles are not fixed, but fluid; This means that different styles may be used in different situations. A person who acts in a certain style in one situation may act in a different style in another situation. Therefore, most people have a certain style and use it, but they are not confined within the framework of that style and are able to coordinate their different styles with different situations and tasks.

On the other hand, one of the important factors in people's preference for information processing and how to understand them is the dominance of the brain's hemispheres. Nederman, the father of brain mastery technology, came to the conclusion with his research and experiences that the brain is specialized not only from the physical aspect but also from the functional aspect. He believes that people do not use the hemispheres of the brain in the same way and with equal frequency. In fact, people use the dominant state of their brain to solve problems; For example, a person who solves a problem analytically or by looking at statistics and numbers and puts it in a logical formula or a sequential process is using his left hemisphere; On the contrary, if a person is looking for patterns and images that contain sensory effects and give an intuitive perception of a whole phenomenon, they use the right hemisphere of their brain. Through his research and experiences, Nederman proved that the brain is specific and unique from a physical point of view as well as the way it works, its specific states can be divided into four distinct parts, each with its own language, values and ways of knowing. , divided Each student has a unique combination of these preferences or intellectual preferences that lead to different behaviors. From this point of view, people in general either have the sovereignty and dominance of the left hemisphere of the brain, or the behaviors and signs of the superiority of the right hemisphere are observed in them. Research has shown that the left hemisphere tends to do separate and individual things more, and the right hemisphere tends to general and integrated things.

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