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Teaching method and the effect on the cognitive and affective development of accounting students

Método de ensino e o efeito no desenvolvimento cognitivo e afetivo de estudantes de contabilidade

Método de enseñanza y el efecto sobre el desarrollo cognitivo y afectivo de los estudiantes de contabilidad

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Abstract: In the search for quality education, teachers pursue strategies that stimulate learning and motivate and assist in the students' development. In this regard, this study proposes to analyze if the use of the role-play teaching technique as a complementary tool for class and exercise solving, is able to influence the level of cognitive and affective development of accounting students, assisting in the construction of knowledge. To achieve this objective, a quasi-experiment was carried out with students from the 4th semester of the Accounting degree of a Federal Institution, assessing both the cognitive and the affective development achieved, based on Bloom's taxonomy. The results show that the use of role-play provided a deeper level of learning, in addition to contributing to motivation, plus stimulating communication and reflection in students.

Keywords: role-play; teaching method; quasi-experiment.

Resumo: Na busca por uma educação de qualidade, os professores buscam estratégias que estimulem o aprendizado, motivem e ajudem no desenvolvimento dos alunos. Nesse sentido, este estudo se propõe a analisar se o uso da técnica de ensino de dramatização (role-play) como ferramenta complementar para a resolução de exercícios de aula é capaz de influenciar o nível de desenvolvimento cognitivo e afetivo dos estudantes de contabilidade, auxiliando na construção do conhecimento. Para atingir esse objetivo, foi realizado um quase-experimento com alunos do 4º semestre do curso de Contabilidade de uma Instituição Federal, avaliando o desenvolvimento cognitivo e o afetivo alcançado, com base na taxonomia de Bloom. Os resultados mostram que o uso da dramatização proporcionou um nível mais profundo de aprendizado, além de contribuir para a motivação, e estimular a comunicação e a reflexão nos alunos.

Palavras-chaves: role-play; método de ensino; quase-experimento.

Resumen: En la búsqueda de una educación de calidad, los maestros persiguen estrategias que estimulan el aprendizaje y motivan y ayudan en el desarrollo de los estudiantes. En este sentido, este estudio propone analizar si el uso de la técnica de enseñanza del juego de roles como herramienta complementaria para la resolución de clases y ejercicios puede influir en el nivel de desarrollo cognitivo y afectivo de los estudiantes de contabilidad, ayudando en la construcción del conocimiento. Para lograr este objetivo, se realizó un cuasiexperimento con estudiantes del cuarto semestre del grado de Contabilidad de una institución federal, evaluando tanto el desarrollo cognitivo como afectivo logrado, basado en la taxonomía de Bloom. Los resultados muestran que el uso del juego de roles proporcionó un nivel más profundo de aprendizaje, además de contribuir a la motivación, además de estimular la comunicación y la reflexión en los estudiantes.

Palabras clave: juego de roles; método de enseñanza; cuasiexperimento.

1 Introduction

Subjects naturally have the potential to learn but need stimulation and motivation as each individual learns in different ways and speeds (Zeferino; Passeri, 2007). According to the authors, it is the teacher's responsibility to be up-to-date and find strategies to help the learning process, acting as a mediator between the student and the construction of knowledge.

The education system depends significantly on the teacher, so it is important to know and discuss the methodological aspects of teaching (Silva, 2006). Teaching is not about the transfer of knowledge, but rather to provide possibilities for its production, therefore it is necessary to align fundamental knowledge with educational practice (Freire, 1996).

This knowledge needed by the teachers is composed of their life experiences, professional history, training, and practice acquired throughout the profession (Tardif, 2014). According to the author, professional knowledge is embedded in the multiplicity of the work itself, in which the teacher must act in situations where he/she needs to act differently, mobilizing different theories, methodologies and skills.

Studies show concern for the quality of teaching and demonstrate that the use of a teaching methodology is a determining factor to facilitate learning, as students are more willing and dedicated when motivated by a methodology that arouses their interest (Morozini; Cambuzzi; Longo, 2007). In addition, according to Brasil (2021), the use of active methodologies allows students to create alternative routes to adapt knowledge.

Teaching techniques, as well as ways of assessing learning, are considered one of the main deficiencies of higher education due to the excessive use of lecture style classes that require little student participation (Bordenave; Pereira, 2015). As to the assessments, there is a lack of methods that give an integral concept of the student. There is also the presence of teacher subjectivity where the teacher can put the assessment at risk by attributing his/her influence on the test results (Bordenave; Pereira, 2015).

In this regard, Bloom's taxonomy is indicated as it is a measuring tool that allows learning to be assessed by objectively analyzing the student's cognitive development (Ferraz; Belhot, 2010). Consequently, it is possible to assess what is being taught (topic) and how knowledge is being acquired, i.e., what level of development is being achieved (Vidal, 2017).

Therefore, this study aims to analyze the influence of the role-play technique on the teaching and learning process, addressing the following research question: **is the use of role-play able to influence the level of cognitive and affective development of accounting students?**

To answer this question, the general objective of this study is to assess the cognitive and affective development of students, before and after the application of role-play, with the intention of determining if the use of the experimental technique was able to influence the development achieved through the traditional method, in light of Bloom's taxonomy.

This research sought to contribute to the teaching and learning process offered in higher education accounting courses by presenting a technique that can be applied to the course, pointing out its ability to influence cognitive performance (learning) and student satisfaction.

2 Theoretical reference

A theory arises to explain and interpret a certain area of knowledge; thus, the theories aimed at analyzing learning discuss and interpret knowledge about the topic of learning, looking to explain what it is, how it is, and how it works (Moreira, 2011).

2.1 Genetic epistemology

Genetic epistemology is a cognitive theory developed by Jean Piaget, a training biologist, who a year after completing his PhD, went to work in a psychoanalysis clinic, specifically in a psychology laboratory (Lefrançois, 2016). There, Piaget carried out intelligence tests, which, according to the author, awakened his interest in thought processes. His scientific concern was to analyze knowledge capacity and how it was developed in the subject. In this respect, Piaget began his research through child and youth development (Padua, 2009).

By analyzing the origin of intelligence in children through mental aspects, Piaget sought to show how mental activity is constructed (Piaget, 1955). According to Piletti, Rossato (2018), Piaget wanted to understand the changes that occurred in the states of knowledge through the development of the mind.

Within the process of the mind, Piaget (1986) considered intelligence as the result of an adaptation between the organism and the environment, seeking progressively to reach a balance. Intelligence is considered as an assimilation of information, organized into structures that "consist of organizing the real, in act or thought, and not simply in copying it" (Piaget, 1970, p. 17).

Therefore, cognitive development occurs through the existing action in intelligence, which changes through mental structures built on the subject (Piletti; Rossato, 2018). These structures allow us to follow how the organism is able to adapt to new perceived forms through the environment (Piaget, 1986).

In this regard, assimilation is a process in which the subject incorporates the external world into cognitive structures through schemas (Piletti; Rossato, 2018). According to Rosa (1996), these schemas are mental structures that assimilate or accommodate the sequences of actions, functioning as a set of definitions deemed as a system of rational concepts (Piaget, 1955).

According to Piaget (1969), there is no knowledge that is constituted as a copy of the real, because the subject resorts to a process of assimilation in which he/she uses a previous structure that already exists in a schema. Therefore, to know means to perceive and transform a phenomenon, to understand its functions, and, above all, to assimilate it into a system of transformation that assigns meanings (Piaget, 1969). Thus, accommodation is a result of a transformation of the subject through the environment (Piaget, 1986).

In order to have accommodation, there needs to be a change in information and in behavior, i.e., progress in development (Lefrançois, 2016). According to Becker (1992), knowledge is not something finished, but constituted by the subject with the interaction with the physical and social environment. Thus, learning has meaning only if it occurs through the movement of the structures of consciousness. In the authors opinion, "education must be a process of knowledge construction" and not an ideology of transmission (Becker, 1992, p. 10).

From the constructivist perspective, the subject expected to be formed is reflexive, capable of "analyzing society, evaluating relationships, equating problems, and proposing changes" (Moretto, 2003, p. 97). Therefore, their training must include the acquisition of cognitive, affective, and psychomotor skills, so that from their education emerges a professional-citizen (Demo, 2005).

Training based on citizenship is a way to create a more enlightened and inclusive society. The educational environment needs to be attentive, not only to the learning processes, but also to the development of skills, abilities, and attitudes that strengthen critical thinking (Gomes, 2022). According to the author, this format allows subjects in training to act and actively contribute to society.

2.2 Learning assessment

The term assessment has been used throughout history in a dominant way as a synonym for "taking tests, taking exams, giving grades" (Haydt, 2011). But this conception, according to the author, refers to teaching that understands that education is delivered through the transfer of information, visualizing the student as a passive and receptive agent in the education process.

Analyzing assessment from a more modern perspective, this conception is modified through Piaget's genetic psychology, understanding that education develops through the students' experiences, who are seen as active and participative beings in the construction of their knowledge (Haydt, 2011).

In order to construct the assessment instruments, attention should not only focus on the articulation of the planned content taught and learned by the students, but also cover a significant sample of the developed content (Luckesi, 2014). According to the author, in addition to matching the instrument with the skills worked on and developed, the difficulty level of what was taught and learned should be adjusted through clear language, to emphasize what is intended to be asked.

Thus, teachers should discard verification methods based on error and correct answers, and insert investigative methods and interpretation of alternatives through different learning situations (Becker, 1992). According to the author, this type of diagnostic assessment helps the student to develop both cognitively and emotionally, promoting a reflexive, autonomous, critical formation, within a context of permanent change and evolution.

The general principle of the assessment is to verify if the objectives set and proposed were achieved and can be accomplished through several levels: learning process, curriculum, and functioning of the educational unit (Haydt, 2011). According to the author, the assessment of learning specifically is related to the assessment of the teacher's own work; thus, by assessing the progress and difficulties of students, the teacher makes a diagnosis of their pedagogical practice. This mechanism enables the professional to reassess and propose improvements (Haydt, 2011).

By breaking with the traditional teaching model, the educational process becomes competence-based, which focuses on the student (Oliveira; Pontes; Marques, 2016). In the context of educational assessment, the authors present the use of Bloom's taxonomy as a methodological tool for establishing educational objectives, highlighting "a hierarchy of learning starting from simpler cognitive skills, such as memorized knowledge, to the most complex, such as the act of analyzing or evaluating" (Oliveira; Pontes; Marques, 2016, p. 13).

Competency-based assessment is discussed in both basic and tertiary education, as its format considers the subjective and contextual dimensions of the student, drawing on their core competences (Oliveira; Pontes; Marques, 2016). These competences are related to the training trajectory, considering, in addition to the memorized knowledge, the knowledge that was accumulated. According to Oliveira, Pontes, Marques (2016), these competences refer to a set of skills and attitudes that expand through components such as affection, desires and knowledge.

Competence is seen as an appropriate achievement ability that enables the development of various skills, such as the development of problem solving and decision-making (Luckesi, 2011). Thus, this type of assessment should not be applied in one single moment, but throughout the learning process (Oliveira; Pontes; Marques, 2016).

In this sense, the use of Bloom's taxonomy allows teachers to monitor the progress of students' skills, helping to build a competence assessment tool, as it allows the classification from the simplest to the most complex cognitive levels (Oliveira; Pontes; Marques, 2016).

2.3 Bloom's taxonomy

During the construction of Bloom's taxonomy, the principles that should obey the development of taxonomy were discussed in order to be composed of an educational-logical-psychological classification system, enunciated as a description of student behavior (Bloom *et al.*, 1977).

The taxonomy proposed to address three domain areas: cognitive, affective, and psychomotor (Bloom *et al.*, 1977). Its original format developed, classified, and defined six major categories of cognitive mastery, described from a simple to a more complex conception, representing a cumulative hierarchy (Krathwohl, 2002).

The development of these cognitive domain elements grouped the educational objectives into six categories: knowledge, comprehension, application, analysis, synthesis, and evaluation.

This arrangement is related to educational goals, representing a scale of knowledge from a simpler to a more complex level of understanding (Bloom *et al.*, 1977). It was created to classify what was expected or intended for students to learn as a result of instruction, with the intention of facilitating comprehension by functioning as a measuring device of the educational process (Krathwohl, 2002).

On review, the category base was maintained, as well as the name. However, the proposed changes indicated the need for a conceptual separation between the knowledge and cognitive process, in addition to renaming the categories of analysis (Krathwohl, 2002).

According to Krathwohl and Anderson (2010), from this review the taxonomy becomes bidimensional, therefore analyzed through two dimensions, knowledge and cognitive process, i.e., knowledge becomes related to all elements categorized.

As for the conceptual distinction between knowledge and the cognitive process, Krathwohl (2002) indicates that previously, the taxonomy approach referred to the categories of specific knowledge, knowledge of forms and meanings, and universal knowledge of forms and abstractions. They are now classified as effective, conceptual, procedural, and meta-cognitive (Krathwohl, 2002).

In regards to the educational objectives, the original structure presented a representation of the categories from simple to complex, from concrete to abstract, assuming a cumulative hierarchical format (Krathwohl, 2002). According to the author, in this model, it was expected that the student could remember or recognize knowledge, bringing one-dimensionality to the picture at the cost of a category of knowledge, different from other taxonomic categories.

However, Krathwohl (2002), in his review, states that he eliminated this anomaly by allowing the noun and the verb aspects to form separate dimensions, in which the noun provided the basis for the knowledge dimension and the verb constitutes the basis for the dimension of the cognitive process.

In this new construction, the degrees presented by Krathwohl (2002) refer to: (1) remember, characterizing the process of retrieving relevant knowledge contained in long-term memory; (2) understanding, elaborating meaning for instructional messages through interpretation, exemplification, classification, summary, inference, comparison and explanation; (3) apply, perform or use a procedure in a given situation; (4) analyze, breaking up the material into constituent parts, to detect it as related parties that either form a general structure or represent a purpose; (5) synthesize, make judgments based on criteria and standards, through verification and criticism; (6) create, assemble the known elements into an original product. The two-dimensional structure of the revised Taxonomy was introduced by Anderson and Krathwohl (2001).

Regarding the affective domain, the taxonomy presents educational objectives as the changes related to interest, attitudes and values, emphasizing feeling and emotion in a degree of acceptance or rejection expressed as interests (Bloom *et al.*, 1977). These educational goals are the result of developing an attitude of trust; intelligent self-critical attitude (affective expression and written communication); respect for the feelings and rights of others; contentment and discontent; interest in reading, etc. (Bloom *et al.*, 1977).

Therefore, this domain refers to the interest, attitudes, and appreciation, which, according to Bloom *et al.* (1977), enable teachers to be aware and register effective changes in students, allowing them to direct the educational process in the search for an evolution of the students. The author further describes how the process of internalization is perceived, which "represents a continuous modification of behavior, extending from the awareness that the subject acquires from a phenomenon to a general attitude towards life that influences his actions" (Bloom *et al.*, 1977, p. 207).

Affective domain categories are described as successive levels, which, according to Bloom *et al.* (1977), are represented by receptivity, response, appreciation, organization and characterization, as shown in Table 1.

Table 1 - Education Objectives Taxonomy - Affective Domain

Educational objective	Definition
1. Receive	Process of the subject's receptivity, from the awareness, he feels a stimulus that attracts his attention.
2. Respond	Refers to the regular way of responding to consent, willingness and satisfaction to respond.
3. Value	Condition of sustaining, accepting, having preference and commitment to a value.
4. Organize	Organization of values assigned to a system
5. Characterize	The point at which the subject responds in a very coherent manner, characterized by a complete set of values, which allows him to review new evidence and modify his attitudes.

Source: Adapted from: Bloom *et al.* (1977).

The third domain discussed in Bloom's taxonomy is psychomotor, which, according to Bloom *et al.* (1977), refers to the manipulative area related to motor skill. This domain emphasizes some muscle or motor skill, i.e., represents a type of manipulation of materials or objects requiring a neuromuscular condition. It should be noted that this domain was not applied in this study.

2.4 Role-play

Role-play is a technique developed in the form of theater, created by the presentation of a topic that is performed by the students who play different roles and characters (Rios, 2011). According to the author, this strategy provides the development of empathy in the participants, in addition to an ability to play different roles and analyze conflicts.

According to Harris (1997), the use of role-play gives students an opportunity to participate actively in specific roles, which provides the dissemination of content and the exploration of a predetermined situation. In accordance with Baruch (2006), the effectiveness of teaching is improved and enriched by applying the role-play technique, because it helps to strengthen the processes of learning through the acting, and involves the presentation of ideas and information in a challenging and attractive way.

According to Souza (2006), the role-play technique applied in the teaching of accounting is a resource that seeks to promote interactivity and encourage reflective thinking and the theoretical contextualization of accounting. The advantages of this

strategy are the increase in interest, understanding, and integration between the learning and the topic discussed, and provides the “active” participation of the student towards the construction of their knowledge (Souza; Casa Nova, 2017). Moreover, according to the authors, it develops empathy and an understanding of the elements presented using various perspectives.

The dramatization technique for teaching accounting encourages the student to think differently, encouraging them to reflect on possible resolutions to a given dilemma or to resolve an unpredictable conflict (Frandsen et al. 2023). According to the authors, role-play allows for the exploration of different perspectives, thereby promoting new reflections that enhance the ability to solve problems.

According to Borges et al. (2023) role-play not only contributes to decision-making by encouraging reasoning but also makes learning more enjoyable and dynamic. These factors, in the view of the authors, promote students' commitment and responsibility towards the situations they face. Another important factor to consider is that active methodologies bring theory and practice closer, making them highly recommended for application in accounting science courses (Vargas; Scheres; Garcia, 2020).

3 Research methodology

A quasi-experiment was carried out, as this research was intended to apply the role-play teaching technique to the same group of students (intact without selection), in an accounting class in the 4th semester course Structure of Financial Statements, at a Federal Institution of Higher Education (IFES).

Quasi-experimental research is carried out for treatments with the same subjects, analyzing them before and after intervention (Martins; Theóphilo, 2016). An experiment was not carried out because this requires the control of variables such as group separation so that one group of people participate in the experiment while the other is static, to establish the effect caused or not on the participating elements (Campbell; Stanley, 1963). In this case, the cognitive and affective development of the students was analyzed before presenting the content, after the class with exercise solving, and after the class with the role-play, comparing the results achieved in each assessed step.

To carry out the quasi-experiment, the observation occurred through the assessment of each activity developed, based on Bloom's taxonomy, and the treatment was performed by applying the teaching techniques used - each corresponding to one treatment. Pre-tests and post-tests were carried out, as recommended by Campbell and Stanley (1963). The pre-test occurred after the class and exercise solving, with an assessment for each new piece of content worked on; the post-tests occurred after the experimental treatment, i.e., after the use of the role play technique, as a basis to verify

and compare the learning level achieved in each step. As indicated by Martins and Theóphilo (2016, p. 57): "for a single group, several pre-tests are administered, then the experimental treatment" is applied, emphasizing that the comparison between the results will indicate if there were effects resulting from the experiment.

The application of the role-play occurred by presenting a real situation of a company with a problem requiring decision making. Upon presentation of a case, the students were separated into teams, each one responsible for playing a certain role, as indicated by Souza and Casa Nova (2017). The students played the roles of directors, government, shareholders, creditors, employees, who discussed the conditions of the company's accounts, analyzing the accounts that make up the change in equity, and seeking to analyze whether the company is already in the process of judicial recovery or is likely to recover.

After defining the groups (randomly), students received information about the company's case, as well as the decisions that the directors, government, shareholders, creditors, and employees could make, aiming at reversing the economic and financial situation of the company. Each group, according to the role chosen, sought a way of reversing the situation. An individual written assignment was requested to find solutions based on the role for which the student was assigned (directors, government, shareholders, creditors and employees). Then, the previously formed groups agreed on which solution to propose and, subsequently, presented the defined proposal. Each group could ask a specific question to the other, having 10 minutes to present their explanation and another 10 minutes to answer questions from the other groups.

The assessment of learning development (knowledge) was carried out in three moments with the application of questionnaires. The first was applied before the presentation of the content to check the students' previous knowledge, then after each class with exercise solving to verify the cognitive development achieved. The third questionnaire was applied at the end of the application of the role-play on the respective content, to identify whether the use of the complementary technique influences the level of development achieved, based on Bloom's taxonomy through the analysis of the Cognitive Domain. The affective domain was assessed after the application of the experimental technique to verify student satisfaction and assessment with the role-play.

4 Results analysis and discussion

The quasi-experiment was applied to an accounting class in the 4th semester course Structure of Financial Statements. There were 42 students enrolled in this course, however, it is important to mention that for the purposes of this analysis, only

the assessments of those who participated in all stages were considered, with the intention of monitoring and comparing the cognitive and affective development in each moment assessed.

The role-play technique was applied as a complement to the class and exercise solving on the topic of Statement of Changes in Equity (SCE), in which 26 students participated in all stages of development. The application began by presenting the technique to the students, clarifying its concept, purpose, form of application and proposition of the activity.

The application of the role-play was based on the students' performance in the execution of roles, which analyzed the proposed question through the interest of the character (role) to be played, aiming for the expansion of knowledge, the development of reflections on student decision making, and empathy within the students.

The stages developed by the technique comprised the defining of the groups (six) followed by the defining of the roles that these groups would play in the activity. The roles played were the chief financial officer, government, creditors, employees, shareholders, and the financing bank.

The activity was developed based on the distribution to the groups of a SCE with financial problems. From the role assigned to the group, the students had to propose solutions from the perspective of the position to maintain the company's activity, aiming for its continuity.

After defining the groups and roles, a SCE and the Income Statement (2015-2017) from a telecommunication company were handed over to the students (problem situation), so that by analyzing the statements, they could propose solutions to keep the company running, based on the role played. With each proposal presented, both the mediator and the other members of the groups could question the proposed decision and exchange ideas.

Three assessments were made regarding the cognitive domain. One prior to the presentation of the content (moment zero), another after the class and exercise solving (moment one), and the last, after the application of the role-play to follow-up on the knowledge built by the student, given the experience with this teaching strategy.

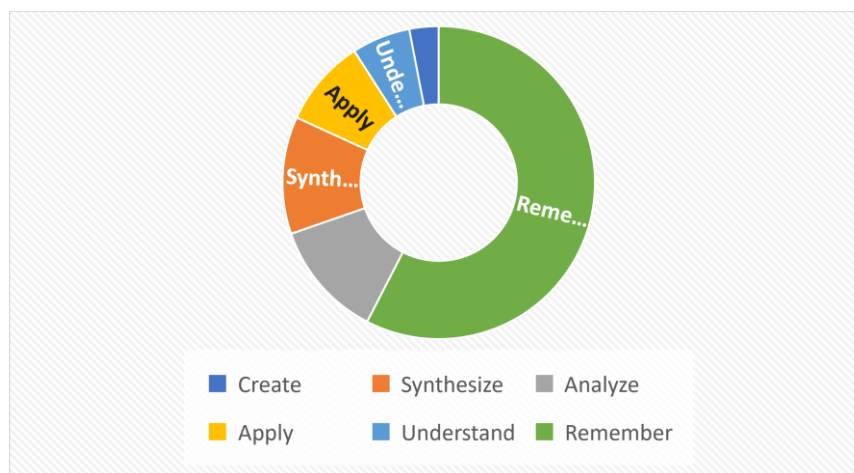
The assessment carried out at moment zero analyzed the most basic levels of cognitive development to verify students' prior knowledge on the subject. For that, a question was elaborated on the topic of the Statement of Changes in Equity (SCE) for each level (remember, understand and apply).

These questions sought to analyze whether students had prior knowledge of the demonstration. The findings showed that (Q.1) 42.31% of the students remember the facts and terms about what is detailed in the SCE, 46.15% partially remember, and 11.54% had no prior knowledge on the subject. Regarding the level "Understand" (Q.2) which items affect the equity, no student was able to answer the question, and those that tried did it partially, representing 42.31% of the students. In this sense, 57.69% did not present knowledge on the subject. The level "Apply" (Q.3) was partially achieved by 7.69% of the students, while 92.31% were unable, demonstrating a lack of previous knowledge about the SCE.

It can be inferred that 42.31% of the students remember the facts and terms detailed in the SCE but are unable to understand and apply these concepts. It is evident that most students have no previous knowledge about the SCE. Prior knowledge allows students to search in an existing schema, the information required to understand the new content. According to Piaget (1970), when this prior knowledge does not exist, the subject must create new schemas, undergoing a transformation process to accommodate the information.

The cognitive development, assessed after the class and the exercise solving (moment one) on the SCE, was analyzed according to the questions elaborated for each level in Bloom's taxonomy, with the intention of investigating the knowledge built from the level remember up to the ability to create from the concepts worked on, according to results shown in Graph 1.

Graph 1: Cognitive Assessment - Lecture + R. E - (DMPL)



Source: Research data.

Graph 1 demonstrates that of the knowledge developed by the students at moment one related to the level "Remember" (Q.1), and 73.08% of the students were able to point out what is detailed in the SCE; after the class and exercise solving, 15.35% partially achieved this level, and 11.54% were unable to remember the facts and terms

questioned. As 42.31% were able to define what was detailed in the SCE from the assessment carried out at moment zero, it is clear that around 30% were able to accommodate the new topic proposed at level remember, after the lecture.

Regarding the analysis of the position "Understanding" (Q.2), it is clear that only 7.69% of the students were able to understand which elements affect the SCE, 7.69% partially understood it, and 84.62% were unable to develop this understanding. Investigation of the level "Apply" (Q.3) showed that 11.54% were able to report which operations do not influence the net equity result, 23.08% partially succeeded at it, and 65.38% failed to resolve the issue, indicating little knowledge construction at this level.

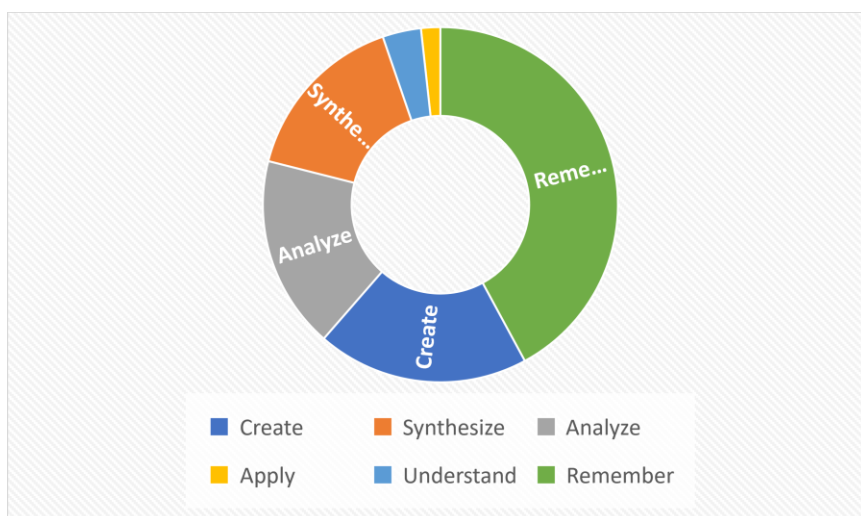
"Analyze" (Q.4) was achieved by 15.38% of the students, 38.47% partially, and 46.15% were unable to analyze how the capital increase made by the members affects the SCE.

The ability to synthesize (Q.5) was grasped by 15.38% in total, and partially by 30.77%, while 53.85% did not demonstrate the relationship requested in the question contained in the assessment instrument.

The highest item, the ability to carry out and solve propositions "Create" (Q.6), based on the concepts worked on, indicated that only 3.85% of the students were able to develop the SCE correctly, 7.69% partially, and 88.46% were unable elaborate on the requested SCE.

The data from this assessment, presented in Graph 1, served as a basis for comparison with the data obtained after the application of the role-play technique, and was analyzed according to Bloom's taxonomy, shown in Graph 2.

Graph 2: Cognitive Assessment – (Role-Play)



Source: Research data.

The questions made it possible to verify the level of cognitive development the students achieved after the application of Role-play, as seen in Graph 2. Thus, when analyzing the students' memory about what is presented in the SCE (Q.1), it is clear that 92.31% were able to remember and 7.69% partially succeeded at it. Comparing the findings to that achieved in moment one, a positive influence of the technique is observed, because previously 73.08% totally remembered and 15.35% partially, and 11.54% who were unable to achieve this level. Therefore, it can be inferred that the use of role-play influences the retrieval of information necessary to develop the other levels, as indicated by Bloom *et al.* (1977), and that the technique helped to expand the assimilation of the content.

The "Understanding" category was analyzed through (Q.2), where 7.69% totally achieved it and 88.46% did in partly. However, it is noteworthy that, at moment one, 84.64% were unable to achieve this level, suggesting that the complementary use of the technique helped in the development of the understanding level.

The level "Apply" showed that the operations that did not influence the SCE (Q.3), 3.85% achieved the expected response, 57.69% partially, and 38.46% were unable to achieve this level. In assessment one, 11.54% achieved the level, however, 23.08% partially did it and 65.38% were unable to do it. Although a lower percentage achieved the total level, it is clear that in general, there were more students who partially achieved, reducing the percentage of those who were unable to apply the concepts worked on.

The level "Analyze" (Q.4) was fully achieved by 38.47% of the students, 46.15% were able to achieve it partially, and 15.38% were unable to do it. This result indicates an evolution by the students in relation to the ability to examine, because at moment one this result was lower, with the results 15.38%, 38.46% and 46.15%, respectively.

The level "Synthesize" (Q.5) demonstrated an evolution in the number of students who started to assimilate the content, either totally or partly, because at moment one after the technique, these results changed from 15.38% and 30.77%, to 34.62% and 26.92%, respectively. Those who were unable to achieve the level represented 38.46% after the technique and 53.85% at moment one.

In the analysis of the level "Create" (Q.6), verified by the development of the SCE, there is better development in moment two, as 42.31% were able to achieve the correct result of the SCE, 15.38% partially did it, and 42.31% did not achieve it. While at moment one these results were lower, 3.85% achieved the correct result, 7.69% partially and 88.46% did not achieve it. Thus, it can be inferred that the technique was able to influence the cognitive development of the students, considering the total achievement of the levels, especially in relation to the create level, according to the cognitive assessment.

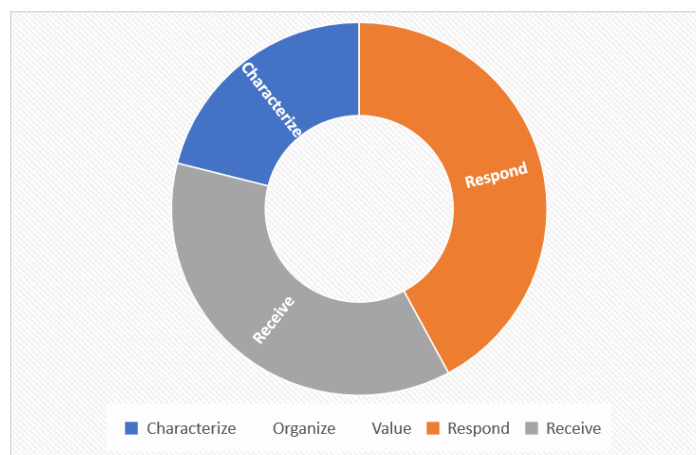
In this sense, an evolution can be observed during the assessments carried out in the teaching of SCE. Initially (moment zero), 42.31% achieved the remember level, evolving to 73.08% in the second assessment, and reaching 92.31% after the application of the technique. Thus, this complementary teaching helped in the cognitive development of the students at the level "remember". In addition, the ability to "create" advanced strongly, which, according to Bloom, Hastings and Madaus (1971), comprises the use of the main theories to elaborate and solve a proposition. This level was achieved by 42.31% of the students with the application of the role-play.

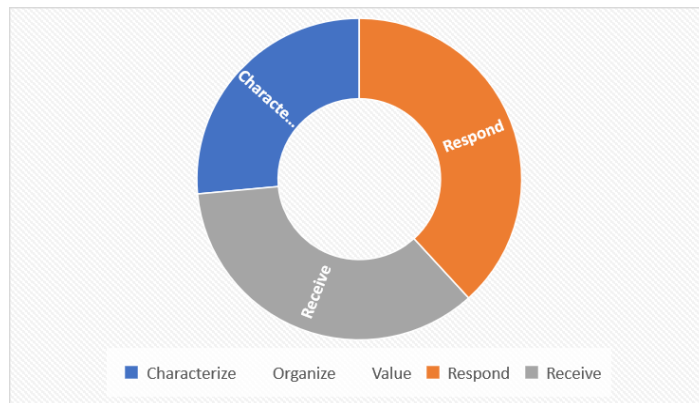
According to Alkin and Christie (2002), the use of dramatization provided by role-play, increases student engagement with learning, promoting deeper learning. In line with the authors, this study found a strong influence by role-play use for development at the level create level - the most complex (deep). In addition to developing the ability to create, the application of role-play enhances the ability to remember. From this perspective, according to Baruch (2006), the practice of role-play can make teaching more effective and improves learning. As pointed out by Souza (2006), the use of the technique promotes interactivity and reflective thinking.

The affective assessment, developed by the students during the application of the class, exercise solving and role-play, was based on the assessment instrument designed according to the affective levels (receive, respond and characterize) in Bloom's taxonomy.

This instrument allowed us to verify how students perceived the stimulus emitted by the techniques, how they feel about it, and how they characterize their attitudes throughout the classes, exercise solving, and the use of the role-play technique, according to the data shown in Graph 3.

Graph 3 - Result 1 - (expository class) and 2 – (Role-play)





Source: Research data.

Graph 3 shows that 80.77% of students believe that the class plus exercise solving helped them to better understand the theme, while 11.54% partially believe this, and 7.69% disagree with this answer, (result 1). When analyzing the same question related to the use of the role-play, it can be seen that 92.31% believe that the complementary technique helped them to understand the SCE and 7.69% disagree. Therefore, the results in both assessments are similar to the level receive, indicating greater receptivity to role-play. According to Harris (1997), the role-play is developed in a challenging way, so it motivates students.

Analyzing the level "Respond", it is noted that 92.31% were satisfied with the class and exercise solving about the SCE, and 7.69% were not. When comparing this satisfaction with the role-play, 100% were satisfied with the technique, indicating that these students, being satisfied, may have a greater interest in learning. As indicated by Lens, Matos and Vansteenkiste (2008), a motivated educational environment helps in the learning process.

In relation to the analysis of the student's perception of their ability to analyze conflict, verified through the level "characterize", at moment one, 46.15% said they were able to analyze conflicts from different perspectives, while 26.92% said they were able to but only from their perspective, and 26.92% said they were not able to. This question was used to check whether, after using a technique in which students would play different roles, would be able to modify their attitudes after the experience.

After applying the role-play, it was found that 69.23% were able to analyze a conflict from a different perspective, therefore over 20% changed their attitude towards the technique, and 30.77% said they did not have this ability.

The results achieved from the stimulus given through the class and the exercise solving about/on the SCE. It can be seen that 80.77% believe in the class and exercise solving's capacity to help understand the content. Over 92% of the students were satisfied with the teaching strategy. Approximately 46% believe they are able to analyze conflict from different perspectives.

The results provided with the role-play show that about 92% believe in the potential of the technique to improve content comprehension, highlighting that all students who had the experience were satisfied with the application of the technique and approximately 69% valued the experience.

Therefore, the results found by the application of the role-play technique indicate that its use was able - on some levels - to influence the cognitive and affective development of students, stimulating the ability to analyze conflict from different perspectives, develop critical thinking to do the propositions, and promote student satisfaction. This corroborates with data from the study by Ramón-Dangla, Gómez and Gea (2021), who state that role-play favors the development of constructive learning and motivation (satisfaction) in accounting students.

These results are similar to those found by Souza (2006), who, through a quasi-experiment, concluded that role-play provided a higher level of satisfaction than the group activity carried out in her study, and that the technique allows students to develop empathy and situation analysis from different perspectives. This also corresponds with results reported by Costa et al. (2020), who analyzed the perception of accounting students regarding the application of role-play based on Bloom's Taxonomy. The results indicated that students perceived the technique as assisting in cognitive development across all categories, especially at the highest levels, in addition to helping to develop skills and competencies (ability to synthesize).

Another important factor verified in this research with the application of role-play was its influence on the cognitive development regarding the level "create", achieved totally or partly by 57.69% of the students. According to Bloom *et al.* (1977), this level shows that students formulated and created a new vision in view of the given purpose.

In this regard, based on Piaget's (1970) view, it can be concluded that there was a transformation in the cognitive structure of students and an accommodation of the content through the development of the level create, which had previously been achieved by only 3.85% of students and, with the use of role-play, reached 42.31%.

5 Results final considerations

According to Piaget (1970), knowledge is developed through mental mechanisms used by the subject to translate the world; it cannot be transferred, as it is a consequence of the information incorporated and assimilated by the subject throughout his life.

In this regard, in each stage of development, the subject presents possibilities for growth, allowing the teacher to stimulate his development (Piletti; Rossato, 2018).

Thus, to analyze the cognitive development process of the students, considering that knowledge is constructed, affects the teaching and learning process, because it allows the teacher to position himself as a mentor who seeks to find instruments that facilitate the process, stimulating and motivating students. This constructivist perception provides an understanding of the factors that influence learning. In addition, cognitive and affective assessments make it possible to identify difficulties faced in the process as well as enable teachers to review and improve their teaching strategies.

This study conducted a quasi-experiment, aiming to verify whether the use of the role-play was able to influence the level of cognitive and affective development in accounting students. In order to answer this question, assessments based on Bloom's taxonomy were carried out, using categories of analysis that make it possible to monitor the cognitive and affective development achieved, considering the proposed knowledge dimension (facts, concepts, processes and meta-cognitive) and cognitive dimension (remember, understand, apply, analyze, synthesize and create).

The results revealed that the use of the role-play technique as a complementary strategy was able to influence the cognitive and affective development levels achieved by students at all levels. The specific questions analyzed in this research, through the results found, indicate the use of role-play, as recommended to achieve more complex elements, such as the ability to analyze, synthesize and create, because these levels were significantly influenced, at those stages of cognitive development.

It can be inferred that role-play promotes the development of the students' ability to remember, identify, and recover from memory the contents seen, which serve as the basis for other cognitive development. According to Anderson and Krathwohl (2001), this stage represents the use of memory to retrieve previously learned definitions, facts, and terms. The technique also affected the ability to create, i.e., generate hypotheses, design and construct solutions for the situations presented. According to Anderson and Krathwohl (2001), this is the most difficult level to achieve, as it requires a reorganization of the elements existing in the subject, resulting in a new functional construction. It can be concluded that this result was achieved because the technique proposes to develop critical thinking and analyze conflicts.

In relation to the attitudes developed, using the affective dimension in Bloom's taxonomy, we tried to understand the students' motivation by applying the role-play teaching technique, indicating that in general the students were satisfied. Other attitudes developed by the students were commitment to the proposed tasks, collaboration, respect, flexibility in the distribution of tasks, interest in the activities, and the exchange of experiences among students.

Thus, this study was developed considering that knowledge is constructed through the experiences lived by the subject and through the experimentation of different teaching techniques.

We proposed to evaluate the ability role-play has on influencing the level of cognitive and affective development achieved by students, concluding that the experiences given helped in the construction of the knowledge developed, according to our data found in the assessments, based on Bloom's taxonomy.

Furthermore, this research aimed to contribute to the teaching of accounting. Through this analysis, it was possible to indicate that it is beneficial to use an active teaching technique to complement the class and exercise solving, as it provides a higher and deeper cognitive development in the students, allowing teachers to use these data as an instrument of analysis, considering the educational objectives they intend to achieve, and feel stimulated by the possibilities. In addition, the results showed that the use of active methodologies contributes to the teaching and learning process, allowing for teachers to analyze their practice.

The study also collaborated with the students, who, through the application of the active technique, obtained a learning environment with integration and team work, developing the experience of solving problems and making decisions, improving communication, conducting research, and mainly, providing an environment capable of improving cognitive development, bringing satisfaction. As satisfaction is a quality indicator, its analysis was essential to understand the processes that need to be improved, being a basis for the Federal Institution of Higher Education (IFES) management to review educational plans and propositions.

The limitations of this research are related to the fact that it was carried out with only one group, being unable to compare the results with another group that was not influenced by the experimental technique, allowing us to verify the development provided in both cases. Another limiting factor was the size of the sample, which, because it is only one group, does not allow the data found to be generalized.

As a suggestion for future research, it is recommended to apply an experiment with the role-play technique, because in addition to broadening the cognitive development achieved by students at higher levels, it provided satisfaction, which this study considers a motivational element. Another suggestion is to identify students' learning styles, so that they are able to make a selection of teaching techniques oriented to the way of learning of the students.

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