Role-play: developing framework-based teaching skills

Role-play: desenvolvendo habilidades e competências do Ensino Embasado na Estrutura Conceitual

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Abstract

This study's aim was to analyze students' perception regarding the usefulness of role-play techniques in the development of skills and competencies required from the accounting professional in the first stage of framework-based teaching. Students' perception regarding the technique was identified through a survey and a focus group with students enrolled in the Introductory Accounting discipline. Results suggest that, at least according to student perception, role-play assisted in the development of skills and competencies in all cognitive-domain categories of the Bloom Taxonomy (Knowledge, Understanding, Application, Analysis, Synthesis and Evaluation), while surpassing framework-based teaching expectations regarding the first three categories.

Resumo

O objetivo desta pesquisa é analisar a percepção dos estudantes quanto à utilidade da técnica role-play no desenvolvimento de habilidades e competências, requeridas ao profissional da área contábil no primeiro estágio do Ensino Embasado na Estrutura Conceitual. A percepção sobre o uso da técnica foi identificada por meio de levantamento e grupo focal com os estudantes matriculados na disciplina Contabilidade Introdutória. Os resultados sugerem que, na percepção dos estudantes, o role-play auxilia no desenvolvimento de habilidades e competências de todas as categorias do domínio cognitivo da Taxonomia de Bloom (Conhecimento, Compreensão, Aplicação, Análise, Síntese e Avaliação), superando as expectativas do Ensino Embasado na Estrutura Conceitual de desenvolvimento apenas das três primeiras categorias.

Practical Implications

The use of role-play proved useful for the development of skills and competencies necessary for the training of accounting professionals. In addition, these results could be used by the International Accounting Standards Board to improve Framework-based teaching.

1 INTRODUCTION

The Framework-based teaching approach, an educational initiative of the International Accounting Standards Board (IASB), organizes the teaching trajectory of future accountants into three stages: awareness, understanding, and competency (Costa et al., 2018). The first stage comprises introductory financial accounting disciplines.

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At this stage, the student should be aware of: 1) the existence of judgments and estimates for the application of International Financial Reporting Standards (IFRS); 2) the importance of conceptual thinking, via knowledge of aspects of the Framework; 3) the fundamental principles underlying common rules for the identification of transactions and events, classification of transactions and application of regulatory requirements (Costa et al., 2018). Stages 2 and 3 differ from the first stage in that they provide for a deeper development of the skills and competencies necessary for carrying out judgments and estimates (Wells & Tarca, 2014, Costa et al., 2018).

Framework-based teaching (FBT) suggests the use of teaching methodologies and strategies able to assist students in the development of critical thinking, in the association between theory and practice, and in the exercise of one's judgment and ability to make estimates (Costa et al., 2018). In this sense, the FBAT is consistent with active teaching methodologies, in which students are involved in their own learning processes and the teacher is seen more as a facilitator than as an absolute master of knowledge.

The role-play teaching strategy can assist in the development of skills and competencies required during stage 1 of the FBAT approach, especially when it comes to associating theory and practice and having a practical view of the decision-making process. However, we found no studies assessing the effectiveness of this strategy in regard to achieving the FBAT's goals.

Thus, the objective of this study is to analyze students' perception regarding the usefulness of the role-play technique in the development of skills and competencies required of the accounting professional in the first stage of Framework-based teaching.

This study was carried out in 2017 and 2018, with participants from an accounting course at a public university in Minas Gerais. The instrument used for data collection was adapted from Weil et al. (2001) and Costa et al. (2018) in order to compare this study's results with those found by the authors when investigating the case-based teaching strategy and when analyzing skills and competencies developed in light of Bloom's Taxonomy.

Results suggest that role-play is effective in achieving the FBAT's stage-1 objectives. The greatest occurrences of improved skills and competencies were seen in the highest-level categories of the Cognitive Domain, especially Synthesis. This may indicate the technique's effectiveness in achieving the proposed educational objectives. Moreover, we were able to apply the technique to all categories of the Cognitive Domain (stages 1, 2 and 3 of the FBAT). Finally, it is worth noting that it was possible to develop activities aiming at these higher-level categories even at the beginning of the course.

The study contributes to the assessment of the usefulness of the role-play technique in the development of skills and competencies that are relevant to the training of the accounting professional and required in stage 1 of the FBAT. Furthermore, this study may provide a 'thermometer' to ascertain the effectiveness of this technique in the teaching of accounting at the beginning of the course, enabling wider discussions on the use of active methodologies in the teaching-learning process.

It is also worth noting that the course's initial subjects, encompassed by the FBAT's first stage, are responsible for starting the student's journey in Accounting Science. In this sense, they represent an essential basis for learning other subjects (Oliveira et al., 2016). In these disciplines, students become aware of concepts and terminologies to be used throughout the course. According to the Accounting Education Change Commission, this first year of accounting studies is critical and extremely relevant (Geiger & Ogilby, 2000). Oliveira et al. (2016), for example, followed 63 students throughout an Accounting course and identified that the performance of these students in the course's introductory disciplines influenced their development in subsequent subjects. Thus, an investigation of the FBAT's first stage may be useful to students, teachers and educational institutions.

2 THEORETICAL FRAMEWORK

Active learning has been standing out due to its use of essentially discursive and collaborative approaches and strategies to teaching, in which students have to deal with higher-order tasks, such as analysis, synthesis and evaluation, in addition to solving problems that require reading, writing, discussion and even direct practice (Mclaughlan & Kirkpatrick, 2004). Among active learning strategies, role-play not only removes students from a posture of passive learning, but also helps develop their empathy, besides increasing their level of interest, understanding and involvement with presented contents (Souza & Casa Nova, 2017).

Through this technique, students can learn by playing roles specific to their professional reality. To this end, "it is essential for participants to fully assume their respective roles, [so each student must] uphold the positions associated with these roles, expressing characteristic reactions and attitudes" (Masetto, 2003, p. 122, our translation). This can assist in the development of students' skills and attitudes (Masetto, 2003).

Student participation is one of the advantages of role-play, as it increases their content-retention and interest levels (Richardson & Kleiner, 1992). According to these authors, role-play helps students gain confidence, since bringing elements of professional reality to the learning environment – where they have the opportunity to familiarize themselves with alternative solutions – can make them more confident to face critical situations when they occur. On the other hand, role-play requires significant effort from students and teachers, who may be induced to believe that these efforts exceed the benefits of learning.

In the area of accounting education, Souza and Casa Nova (2017) applied the role-play strategy to students of the Accounting and Balance Sheet Analysis discipline. They assumed the roles of agents involved in Varig's insolvency, a real-life case. A focus group was used to assess student perception. A favorable level of satisfaction – mainly in the development of skills related to emotional aspects – was identified. On the other hand, the authors were also able to identify negative aspects associated with time requirements and motivation.

Kern (2001) applied role-play to the first week of the accounting course, prompting students to simulate the transactions necessary for starting a business and to assume the roles of people responsible for maintaining accounting records. Results indicated that, compared to conventional lectures, role-play provided students with a better understanding of the course's material. Moreover, students who participated in the exercise performed better on an exam applied four weeks later.

Souza et al. (2013) assessed proficiency development and learning efficiency according to the student's perspective. Results obtained through a focus group suggest that role-play was conducive to the development of critical thinking, to the recognition of different points of view, and to communication and teamwork.

2.1 Role-play, Framework-based teaching and Bloom's Taxonomy

The adoption of the IFRS evidenced the demand for a teaching-learning process able to prepare the student for the accounting professional's new reality (Costa et al., 2018). In this new reality, the accountant needs to be equipped with skills and competencies for working in a dynamic, complex and constantly changing professional environment.

To this end, in 2005 the IASB started developing free teaching materials meant to inspire educational institutions to reformulate their accounting programs. One of the IASB's initiatives was the proposal of the FBAT, or framework-based approach to teaching (Wells, 2011).

The FBAT's existence is justified by the fact that the IFRS are principle-based standards with a high degree of subjectivity. Their application and interpretation demand a sophisticated capacity for abstraction and professional judgment (Wells, 2011, Costa et al., 2018). The FBAT's main tenet is that the teaching of accounting moves from the general to the specific, beginning with the understanding of a Conceptual Structure – the consistent foundation of the IFRS – and progressing towards the specificities of each standard.

The application of the FBAT approach is appropriate at any time during the accounting course, but the idea is to progressively introduce its contents (Wells, 2011). This translates into three hierarchical teaching stages, namely: awareness; understanding and competency (Costa et al., 2018).

The first stage, "awareness", should be developed in the introductory disciplines of professional training. It employs excerpts from the framework to express objectives and qualitative characteristics, definitions, and recognition criteria. The second stage, "understanding", is developed by intermediate disciplines and deepens the content presented in the first stage. Its objective is to enable students to carry out judgments and estimates necessary when applying the standard. The last stage, "competency", is developed by the final subjects, prior to the student's professional certification, and is related to the ability to integrate and critically evaluate the previously learned contents (Costa et al., 2018).

In line with the FBAT's objectives, teaching strategies have employed case studies such as that of the Barrick Gold Corporation (Goeld, 2013), aiming to approach the topic of goodwill, and that of Artisan Flowers (Mactavish & Moore, 2016), aiming to discuss the topic of leasing (IFRS 16). Associated with the development of the Bloom Taxonomy cognitive domain, these are indicated for use in stage 3 of the FBAT.

As a practical example, Costa et al. (2018) used the "Open Safari" case to teach the concept of fixed assets and other non-financial assets to classes in the third FBAT stage. The authors concluded that the strategy's application promoted the development of the skills and competencies students are expected to learn at this stage. However, we were unable to find experiences with the application of role-play in the accounting literature involving any of the three FBAT learning stages – even though this strategy's objectives seem to be aligned with the FBAT's educational goals.

Bloom's Taxonomy is a planning tool that helps in the definition of the learning objectives necessary for the development of cognitive skills and competencies. Learning objectives can be aligned with the development of the cognitive domain (learning, developing skills and postures) and the affective domain (related to feelings and attitudes).

A study by Costa et al. (2018) sought to link the learning objectives of the FBAT's three stages with the cognitive domain through a questionnaire adapted from Weil et al. (1999; 2001), as shown in Table 1. According to the authors, the first three cognitive-domain categories in Bloom's Taxonomy (knowledge, understanding and application) would be developed in the first stage of the FBAT (awareness). In the second stage, these three categories of the cognitive domain would be supplemented by the analysis category, and in the third stage, all categories of the cognitive domain would be developed.

Table 1. Association between FBAT stages and Bloom's Taxonomy

Categories – Bloom's Taxonomy		FBAT stages	
	1	2	3
1 – Knowledge	x	x	x
2 – Understanding	x	x	x
3 – Application	x	x	x
4 – Analysis		x	x
5 – Synthesis			x
6 – Evaluation			x

(Cognitive Domain)

Source: adapted from Costa et al. (2018)

Thus, in order to understand the contribution of role-play to the learning process – during the FBAT's first stage and in light of Bloom's Taxonomy – the following premise was adopted:

P_1**:** the use of the role-play technique in introductory accounting disciplines (stage 1 of the FBAT) helps in the development of skills and competencies belonging to the first three cognitive-domain categories of Bloom's Taxonomy, as per students' perception.

Costa et al. (2018) associated the FBAT's stages only with the cognitive domain of Bloom's Taxonomy. However, affective domain-related skills and competencies in Bloom's Taxonomy can be developed by applying active methodologies and may also be associated with FBAT stages and/or stimulate the development of skills and competencies in the cognitive domain. Thus, this study's second premise was:

P_2**:** the use of the role-play technique in introductory accounting disciplines (stage 1 of the FBAT) helps in the development of skills and competencies belonging to the affective domain of Bloom's Taxonomy, as per students' perception.

3 METHODOLOGICAL PROCEDURES

3.1 Application of the role-play technique

Role-play was applied to an evaluative activity named 'Accounting Role-play,' carried out among three classes of the Introductory Accounting II discipline. This took place during the second academic term of 2017 and during the two academic terms of 2018. It should be noted that the Accounting Sciences course at the university has a five-year duration. The Introductory Accounting discipline is offered during the second academic term.

To carry out the activity, at the beginning of the academic term students were given instructions accompanied by a list of public companies (with at least two firms belonging to the same sector of activity), for the purpose of comparison and competition between groups. The students met in groups of four to six members, chose a company from the list and started work, analyzing how concepts studied in the discipline appeared in companies' accounting reports from the last five years.

The activity's instructions presented the following context: "A stock exchange investor wants to expand his/her investments. To this end, he/she is evaluating the economic and financial information of several companies. You and your company's Chief Financial Officer (CFO) are preparing a material meant to present your company's context and economic and financial analyzes in respect to the last 5 years, while comparing such data with those of the competing company". Thus, based on this context, students were informed that each member of the group should assume a previously defined role within the publicly held company: president, accountant, controller, marketing director or auditor. The choice of role was free and defined by the group according to each member's profile and skill set.

The investors were represented by professors and graduate students from the university. At least four investors participated in the application of the technique during each academic term. At the end of the academic term, on a predefined date, investors had to choose one of the publicly held companies presented by the students, providing it with capital.

The work was divided into three stages. The first stage consisted of preparing a report, observing, at least: 1) the characteristics of the company and the sector in which it operates; 2) the accounting policies, the representativeness of each analyzed account in regards to the discipline's topics (financial operations, estimated loss from doubtful loans, reserves, contingent assets and liabilities, and inventories) and disclosure quality; 3) the calculation and analysis of economic and financial indicators related to the studied topics; 4) stock price analysis, payment of dividends and arguments to convince investors to contribute capital to the company. The report had to be prepared in a professional manner (with students taking on the roles of company members), having investors as its target audience.

Moreover, students also had to analyze the accounting reports of a competing company already under analysis by another group of students, for comparison purposes and to generate competition between the groups. Thus, the role-play technique was put to use early on in the activity.

During the second stage of the activity, reports were made available on fictitious "Investor Relations" sections in the university's Moodle platform. This allowed investors to ask questions about the information presented in the reports. As in the first stage, students and other participants interacted while play-acting their assigned roles. In the third stage, the students carried out a presentation at the University amphitheater. For the presentation, students had to play-act their chosen roles (including aspects such as clothing, posture, presentation themes, etc.). At the end of each group's presentation, investors clarified their doubts about the presented data and questioned the students about future prospects.

Moodle reports and posts were evaluated by the professor in charge of the discipline, who gave each group a score. Presentations were evaluated by the professor and also by prospective investors. At the end of each presentation, the professor-in-charge and the prospective investors assigned a 0 to 10 score to each group member. The groups with the highest scores across the three stages were chosen as receptacles of capital investment.

3.2 Survey of students' perception regarding the role-play technique

After the presentations but before final grades had been released, a questionnaire adapted from Weil et al. (2001) and Costa et al. (2018) was applied. The average age of the respondents was 17 years old, and approximately 68% of the sample was female. Among 84 participants, 61% did not work. This is explained by the fact that the activity was carried out with students who attended the full-time period of the first year of the accounting course. Only 15% of the sample was made up of students who were not taking the course for the first time, i.e., students who had failed it during previous academic terms.

The questionnaire comprised two parts: (i) respondent characterization, (ii) activity evaluation, with 38 questions to be assigned scores based on students' perception of the activity's contribution to the teaching-learning process, in addition to open questions, in which students could freely express their opinions. During the analysis of the questionnaire's answers, univariate descriptive statistics and the Shapiro–Francia test were used to verify data distribution (Fávero & Belfiore, 2017).

Subsequently, the 38 questions dealing with students' perception of the contribution of the "Accounting Role-Play" activity to the learning process were grouped according to the cognitive- and affective-domain categories in Bloom's Taxonomy. Each question group was subjected to normality tests and then to the Wilcoxon test, in order to verify if there were differences between individually assigned category scores and also between grouped categories, in line with the FBAT's stages.

The degree of association between the variables was analyzed by means of correlation. Hair et al. (2005) consider the following coefficient variations: ± 0.91 to ± 1.00 as very strong association; ± 0.71 to ± 0.90 as strong association; ± 0.41 to ± 0.70 as moderate association; ± 0.21 to ± 0.40 as minor, but defined association; and ± 0.01 to ± 0.20 as slight association (i.e. almost imperceptible).

In order to verify the mutual relationships among categories in Bloom's Taxonomy, multiple regression was performed while alternating between groups of skills sets and categories as the dependent variable and treating other parameters as independent variables. The stepwise procedure was also used to improve model adjustment, which resulted in subsets of skills and useful categories for the prediction of each dependent variable.

3.3 Focus group

In order to triangulate the analysis in this study and collect specific evidence on the usefulness of the role-play technique in the teaching-learning process, two focus groups were carried out, one in the second half of 2017 (2017/2) and the other in the first half of 2018 (2018/1). Students participated in the focus groups voluntarily, expressing their agreement by signing a consent form.

The focus groups were led by a moderator who motivated the discussion of specific issues, interfering whenever necessary. The main guiding themes were: (i) development of skills and competencies in each stage of the work (report, Moodle posts, and presentation); (ii) motivation; (iii) individual or group study and research; (iv) practical business vision; (v) teamwork; (vi) difficulties and limitations; (vii) performance in the discipline; and (viii) technique suitability in the context of the discipline. All focus groups were recorded in both audio and video and later transcribed, making it possible to analyze their content and establish comparisons between questionnaire responses.

Twenty-three (23) students participated in the focus groups: 13 were enrolled in the second term of 2017 (9 female students) and 10 in the first term of 2018 (9 female students). The average age of students in each focus group was 20 years old. To preserve the participants' identities, student names were replaced by the letter A followed by a number representing the order in which the filled-out questionnaires were included in the results compilation worksheet (e.g., "A1, A2, A3, ..., A84"). For comments made by students in the focus groups, responses were identified by their respective focus group (Focus group 1 [GF1] or focus group 2 [GF2]) followed by the letter A and the student's number, e.g.: GF1A1; GF1A2; GF1A3, ..., GF1A23.

4 ANALYSIS OF RESULTS

Results will be discussed in three subsections. In the first, we assess the development of skills and competencies belonging to Bloom Taxonomy cognitive categories, as well as their relationship with the FBAT's stages. The second section formulates a proposal for the incorporation of the Affective Domain in the FBAT's objectives. The third section points out the difficulties encountered by students throughout the process.

4.1 Development of Skills and Competencies

Students' perception of the skills and competencies developed in the "Accounting Role-play" activity is presented in Table 2, through a ranking based on averaged questionnaire scores. This Table also illustrates the results of univariate normality tests.

All resulting averages were higher than 5, indicating that the students perceived the activity as effective in developing skills and competencies in the teaching-learning process. Among listed questions, "Practical view of the decision-making process" was the one with the highest average (9.21), followed by "Responsibility for one's own learning", with an average of 8.89. Both questions had non-normal distributions and a median score of 10, which suggests that 50% of respondents conferred them with maximum scores. Regarding top-ranking skills, focus group student A51 considered that the activity promoted "*a view of the reality and difficulties faced by decision makers*", while student A13 considered it conducive to developing one's "*capacity for data analysis and decision making*".

Table 2. Ranking of skills and competencies

Rank	Skills and competencies	Bloom's Taxonomy	N	Mean	S.D.	Min	Median	Max	W'	z
1	Practical view of the decision-making process	SYNTHESIS	84	9.21	1.08	6	10	10	0.968	0.035
2	Responsibility for one's own learning	AFFECTIVE DOMAIN	83	8.89	1.57	1	10	10	0.903	0.000
3	Considering different perspectives and users	EVALUATION	84	8.73	1.22	5	9	10	0.988	0.536
4	Integration of several subjects	UNDERSTANDING	83	8.70	1.39	5	9	10	0.980	0.198
5	Vision of how a company works	SYNTHESIS	84	8.70	1.59	1	9	10	0.917	0.000
6	Interpretation of financial statements	ANALYSIS	83	8.66	1.34	5	9	10	0.983	0.274
7	Ability to relate theory and practice	SYNTHESIS	84	8.62	1.47	1	9	10	0.898	0.000
8	Identification of relevant data	KNOWLEDGE	84	8.62	1.40	4	9	10	0.985	0.365
9	Interpretation	ANALYSIS	84	8.61	1.20	5	9	10	0.989	0.603
10	Knowledge application	SYNTHESIS	84	8.60	1.43	4	9	10	0.983	0.283
11	Technical knowledge	UNDERSTANDING	84	8.60	1.55	4	9	10	0.980	0.182
12	Analysis	ANALYSIS	84	8.57	1.34	5	9	10	0.995	0.950
13	Teamwork	KNOWLEDGE	83	8.55	1.95	0	9	10	0.906	0.000
14	Summarize information	UNDERSTANDING	84	8.52	1.38	5	9	10	0.978	0.133
15	Creativity	AFFECTIVE DOMAIN	83	8.52	1.40	4	9	10	0.988	0.549
16	Evaluate ideas	ANALYSIS	84	8.49	1.65	1	9	10	0.904	0.000
17	Consider multiple solutions	EVALUATION	84	8.49	1.60	3	9	10	0.957	0.008
18	Written communication	KNOWLEDGE	83	8.43	1.73	0	9	10	0.857	0.000
19	Critical thinking	ANALYSIS	84	8.42	1.56	3	9	10	0.980	0.197
20	Distinguish facts from opinions	APPLICATION	84	8.42	1.28	5	8	10	0.992	0.804
21	Research skills	AFFECTIVE DOMAIN	83	8.39	1.85	2	9	10	0.928	0.000
22	Active participation	AFFECTIVE DOMAIN	84	8.37	1.73	1	9	10	0.932	0.001
23	Information organization	KNOWLEDGE	84	8.30	1.45	3	8	10	0.983	0.296
24	Judgement	APPLICATION	84	8.27	1.70	2	9	10	0.975	0.097
25	Study of course contents	AFFECTIVE DOMAIN	83	8.27	1.73	3	9	10	0.988	0.573

Source: Elaborated by the authors

Note: BT = Bloom's Taxonomy; KNOW = Knowledge; UND = Understanding; APPL = Application; ANA = Analysis; SYNT = Synthesis; EVAL = Evaluation; AFF = Affective Domain; N = number of observations; Mean = Average; SD = Standard Deviation; Min = minimum value; M = 50%; Max = maximum value; W' = Shapiro–Francia univariate normality test; z = Shapiro–Francia test p-value

Table 2. Ranking of skills and competencies (continued)

Rank	Habilidades e competências	Taxonomia de Bloom	N	Média	D.P.	Mín.	Mediana	Máx.	W'	z
26	Thinking conceptually	ANALYSIS	84	8.25	1.39	4	8	10	0.992	0.788
27	Ability to listen	AFFECTIVE DOMAIN	84	8.24	1.95	1	9	10	0.959	0.010
28	Problem-solving	APPLICATION	84	8.23	1.52	2	8	10	0.969	0.041
29	Synthesis	SYNTHESIS	84	8.20	1.45	5	8	10	0.996	0.990
30	Consolidation of previous knowledge	UNDERSTANDING	84	8.13	1.77	4	8	10	0.978	0.143
31	Dealing with uncertainty and ambiguity	EVALUATION	84	8.13	1.54	3	8	10	0.976	0.100
32	Decision making with incomplete information	EVALUATION	84	8.11	1.73	1	8	10	0.952	0.004
33	Persuasion	KNOWLEDGE	84	8.10	1.80	0	8	10	0.922	0.000
34	Identification of issues	KNOWLEDGE	84	8.08	1.50	4	8	10	0.992	0.795
35	Relevant questions	AFFECTIVE DOMAIN	84	8.01	1.65	2	8	10	0.959	0.011
36	Leadership	AFFECTIVE DOMAIN	83	7.98	2.05	1	8	10	0.888	0.000
37	Public Speaking and Communication	KNOWLEDGE	83	7.88	2.29	1	8	10	0.901	0.000
38	Motivation	AFFECTIVE DOMAIN	84	7.60	2.37	1	8	10	0.936	0.001

Source: Elaborated by the authors

Note: BT = Bloom's Taxonomy; KNOW = Knowledge; UND = Understanding; APPL = Application; ANA = Analysis; SYNT = Synthesis; EVAL = Evaluation; AFF = Affective Domain; N = number of observations; Mean = Average; SD = Standard Deviation; Min = minimum value; M = 50%; Max = maximum value; W' = Shapiro–Francia univariate normality test; z = Shapiro–Francia test p-value

Table 3. Descriptive statistics of Bloom Taxonomy categories and Wilcoxon test results

FBAT	Bloom's Taxonomy	N	Mean	S.D.	Min	Max	Mean	z'	p-value'	z"	p-value"
	Affective domain	83	8.25	1.19	4.87	10.00	8.25				
1st FBAT stage	Knowledge	84	8.29	1.26	3.83	10.00					
	Understanding	83	8.44	1.12	5.20	10.00	8.35	0.41	0.681		
	Application	84	8.31	1.18	5.67	10.00					
Other FBAT stages	Analysis	83	8.50	1.03	5.67	10.00					
	Synthesis	84	8.77	0.95	6.00	10.00	8.50			-2.17	0.007
	Evaluation	84	8.24	1.23	4.00	10.00					

Source: Elaborated by the authors

Note: N = number of observations; S.D. = standard deviation; z' = Wilcoxon test statistics comparing 1st FBAT stage categories (Knowledge, Understanding and Application) with Affective domain categories; z" = Wilcoxon test statistics comparing 1st FBAT stage with other categories of the Cognitive Domain (Analysis, Synthesis and Evaluation).

At the other extreme, Motivation ranked 38th, with an average score of 7.6. However, it should be noted that, as in the study by Costa et al. (2018), despite occupying the last position in the ranking, this item also had a non-normal distribution, indicating that 50% of students assigned a score higher than 8 for "Motivation", a positive result when it comes to analysis. Most students reported they were greatly motivated to take on the 3rd phase of the activity (presentation for investors), which corroborates the median result for "Motivation". In regard to this aspect, students GF1A4, GF2A9 and GF1A13 corroborated GF1A1's opinion: "*The last phase was the best part for me ... we had to define, organize everything we had to say ... You had to be creative, since our goal was to beat the competitor*".

Table 2 shows that the skills with the highest degree of association with stage 1 of the FBAT were: "Integration of several subjects", occupying the 4th place in the skill ranking, and "identification of relevant data", occupying the 8th place in the skill ranking. Regarding the ability to integrate different topics, GF1A13 points out that the activity "*showed how small the discipline's content was when compared to the broader world of accounting*", while GF2A3 points out that it allowed one to develop "*a broad view of everything*". Student GF1A4 reported that during the activity's second phase (Moodle posts) they developed the ability to "*... filter out what was important and what was not*", corroborating the premise that the activity would contribute to the development of skills associated with Stage 1 of the FBAT.

The 38 skills and competencies were grouped into the Cognitive and Affective Domains of Bloom's Taxonomy, as shown in Table 3. The Evaluation category obtained the lowest average score (8.24), followed by Affective Domain (8.25) and by the categories in the 1st Stage of the FBAT, which obtained an average score of 8.35, in addition to the other categories belonging to the other stages, which averaged a score of 8.5. The score difference was subjected to the Wilcoxon test, which demonstrated that there was no significant difference between Affective Domain and the categories of the 1st stage of the FBAT (p-value of 0.681). This suggests these categories were allowed to uniformly develop among students. On the other hand, the Wilcoxon p-value (<0.05) indicates a difference between categories of the 1st stage and categories of the later stages of the FBAT.

This result suggests that, for the analyzed sample, the use of role-play was able to: 1) develop skills and competencies from all cognitive categories, in addition to the Taxonomy's affective aspect; 2) develop the other stages of the FBAT (Analysis, Synthesis and Evaluation categories) more prominently when compared to the 1st stage (Knowledge, Understanding and Application categories); 3) achieve FBAT goals by allowing for a positive result regarding the first stage (average higher than 8.35), which makes it possible to state that the role-play activity effectively achieved FBAT goals.

Table 3 also shows individualized averages for Cognitive Domain categories. The highest averages were obtained within the Synthesis, Analysis and Understanding categories, with scores of 8.77, 8.50 and 8.44, respectively. The Synthesis and Analysis scores appear to have been fundamental for the differences found between the 1st FBAT stage group and the group encompassing the other FBAT stages. To test this assumption, the Wilcoxon test was performed for all Bloom Taxonomy categories in order to verify whether scores were statistically different from each other. Results are reported in Table 4.

Table 4. Wilcoxon test of Bloom's Taxonomy categories

Bloom's Taxonomy	Prob > |z|						
	Knowledge	Understanding	Application	Analysis	Synthesis	Evaluation	Affective domain
Knowledge	1						
Understanding	0.1408	1					
Application	0.6015	0.2059	1				
Analysis	0.0498	0.2430	0.0079	1			
Synthesis	0.0000	0.0001	0.0000	0.0064	1		
Evaluation	0.3134	0.1826	0.7069	0.0203	0.0000	1	
Affective domain	0.4102	0.1434	0.9060	0.0026	0.0000	0.9674	1

Source: Elaborated by the authors

The results demonstrate that Synthesis and Analysis scores were fundamental for the differences found between the 1st FBAT stage group and the group encompassing the other FBAT stages. Specifically, Synthesis proved to be different from Affective Domain, Evaluation, Analysis and from all 1st FBAT stage categories, namely: knowledge, understanding and application.

This result suggests that the use of role-play has markedly developed the Synthesis skill as compared to the knowledge, understanding and application skills.do role-play desenvolveu de forma marcante a habilidade de Síntese, frente às habilidades de conhecimento, compreensão e aplicação.

It is inferred, therefore, that the application of the role-play technique enabled the development of skills and competencies belonging to the 1st FBAT stage (Knowledge, Understanding and Application) and, admirably, also helped in the development of skills and competencies belonging to the other cognitive categories of the Taxonomy. This leads to the conclusion that, even in the beginning of the Accounting Sciences course – and specifically in the introductory accounting disciplines – it is possible for students to develop skills and competencies of judgment, critical thinking and conceptual thinking (higher-level categories in Bloom's Taxonomy), as recommended by the FBAT.

It is also noteworthy that most of the skills covered in the "Synthesis" category stood out in the students' reports (open questions and focus groups). For instance, considering different perspectives and users (3rd place in the ranking): "*one interesting thing about the activity was that you were able to analyze both sides of the coin (that of the owner and that of the investor) ... this allows you to judge the company's pros and cons*" (GF1A13); vision of how a company works (5th place in the ranking): "*really, it is a kind of play-acting in accounting because, during the entire term, we had to live and breathe the companies' data*" (GF2A3). "*The first part was interesting for people who had doubts about the profession. I myself did, but by analyzing the statement and really entering the world of accounting, it really hit home that this is what I want*" (GF1A5); ability to relate theory and practice (7th place in the ranking): "*I have been working in the more managerial side for some time and, and in my long journey in accounting, I had never experienced learning something in class and putting it to use as one would at work, on a daily basis*" (GF1A8).

In addition, regarding the Analysis category, student GF1A1 declared: "*we started to put heavy emphasis on logic, so we could evaluate the issue of inventories. I used to see having a lot of inventory as an advantage, but then I began to think: if I were the investor, I would not want my company to have so much inventory, because if it has a lot of inventory, then (the merchandise) is not being sold*". In this sense, the student was able to build cognitive bridges through the accumulation of concepts assimilated in the classroom using practical knowledge promoted by role-play, which resulted in analysis and judgment on the issue of "inventory" as it pertains to business practices.

4.2 Insertion of the Affective Domain in the FBAT

According to the students, another positive aspect of the use of the role-play technique was the development of skills and competencies in the Affective Domain of Bloom's Taxonomy, especially regarding the skill "responsibility for one's own learning". The students highlighted that their planning and organization processes underwent improvements.

Respondent A64 pointed out that it was a challenge to "*control the time devoted to carrying out the activities, to reconcile other course subjects with the work*" and A73 added that the activity "*improved the ability to deal with schedules, which is crucial within a company*". Regarding the "active participation" skill, A60 and A21 highlighted that they developed "*proactivity*" and GF2A6 added: "*I found myself researching things that were not required per-se, just to learn more about the company*". It is clear, therefore, that the activity enabled students to become more active in the teaching-learning process.

To verify interactions between categories belonging to the Cognitive and Affective domains, bivariate (Table 5) and multivariate (Table6) analyzes were performed.

Table 5. Correlation between categories within Bloom's Taxonomy

Bloom's Taxonomy	Knowledge	Understanding	Application	Analysis	Synthesis	Evaluation	Affective domain
Knowledge	1						
Understanding	0.6546	1					
Application	0.7057	0.6642	1				
Analysis	0.7266	0.7883	0.7711	1			
Synthesis	0.6465	0.6535	0.6232	0.6589	1		
Evaluation	0.6599	0.6247	0.5692	0.6862	0.4837	1	
Affective domain	0.7631	0.7423	0.6644	0.8084	0.6385	0.6596	1

Source: Elaborated by the authors

All categories were positively correlated to a moderate to high degree, considering that coefficients were above 0.5 (Table 5). The positive sign indicates that there is no inverse relationship between skills and competencies, that is, the development of one skill and competency does not hamper the development of another.

The Affective Domain, which encompasses the development of the emotional and affective area – including behavior, attitude and responsibility, among others (Ferraz & Belhot, 2010) – was highly correlated with the categories of Analysis, Understanding and Knowledge. These results demonstrate that the students who developed the most in the Affective Domain also did well regarding analysis, understanding and knowledge, and vice versa (Table 5). The pairs Analysis and Application, Analysis and Understanding, Analysis and Knowledge, and Application and Knowledge also showed high correlation coefficients (according to the degrees of association mentioned by Hair et al., 2005).

In order to verify the mutual relationships among categories in Bloom's Taxonomy, multiple regression was performed while alternating between groups of skills sets and categories as a dependent variable and treating other parameters as independent variables. Then, the stepwise procedure was performed to improve the adjustment of the models, resulting in subsets of categories useful for the prediction of each dependent variable. Table 6 presents the results obtained in the multivariate analysis, which demonstrate that the development of each skill is associated with the simultaneous development of other variables.

It is worth noting that, in the 1st stage of the FBAT, in particular, 67.6% (R2) of the development taking place in the Knowledge category, approximately, was associated with the development of both the Affective Domain and the Evaluation and Application categories. Understanding, in turn, had about 67.3% (R2) of its development linked to the development of the Affective Domain, as well as Synthesis and Analysis. Meanwhile, Application had approximately 64% of its development associated with Knowledge and Analysis.

Table 6. Mutual relationships between categories of Bloom's Taxonomy

	Independent variables	Coeff	t	P>|t|	Prob > F	R²
Knowledge	Affective domain	0.398	4.36	0.000		
	Evaluation	0.187	2.33	0.022	0.000	0.676
	Application	0.288	3.47	0.001		
	Constant	1.069	1.86	0.067		
Understanding	Affective domain	0.233	2.16	0.034		
	Synthesis	0.229	2.16	0.034	0.000	0.673
	Analysis	0.509	4.00	0.000		
	Constant	0.169	0.23	0.815		
Application	Analysis	0.632	5.56	0.000		
	Knowledge	0.330	3.13	0.002	0.000	0.639
	Constant	0.208	0.30	0.765		
Analysis	Affective domain	0.323	4.47	0.000		
	Application	0.285	4.41	0.000	0.000	0.786
	Understanding	0.268	3.53	0.001		
	Constant	1.210	3.53	0.007		
Synthesis	Knowledge	0.324	3.68	0.000		
	Understanding	3.261	3.87	0.000	0.000	0.511
	Constant	3.261	5.32	0.000		
Evaluation	Knowledge	0.377	3.03	0.003		
	Analysis	0.522	3.88	0.000	0.000	0.526
	Constant	0.701	0.86	0.393		
Affective domain	Analysis	0.463	3.78	0.000		
	Knowledge	0.358	3.89	0.000	0.000	0.734
	Understanding	0.215	2.12	0.037		
	Constant	-0.458	-0.76	0.447		

Source: Elaborated by the authors

Notes: Coeff = coefficients, t = t-test statistics; P>|t| = t-test p-value; Prob > F = p-value of the F test; R² = coefficient of determination.

These results may indicate that, although the FBAT proposes only Knowledge, Understanding and Application as 1st-stage skills, their development does not occur in isolation from later-stage skills. For example, the Affective Domain, although not included in the FBAT, may prove fundamental for the development of two 1st-stage skills: Knowledge and Understanding. However, it is worth noting that this relationship is not unidirectional, as Knowledge and Understanding are also associated with the development of the Affective Domain. Furthermore, Analysis, Knowledge and Understanding skills explain 73% of students' Affective Domain development. This result indicates that students who analyze, understand and acquire knowledge are able to better develop skills related to feelings and attitudes.

These results also corroborate the findings of Wells and Tarca (2014). According to them, students would develop Cognitive Domain-related skills during stage 1, while stages 2 and 3 would see a deeper development of the same skills.

4.3 Complexifying Aspects

Generally speaking, the "Accounting Role-play" activity was positively evaluated and recommended for application to future Introductory Accounting classes. The main difficulties pointed out by the students were: the complexity and time-intensive character of the activity, the lack of time and consequent difficulty to reconcile role-play activities with other course contents, and the lack of knowledge regarding certain contents approached during the activity. For example, student A22 reported: "*The activity was great, but the big problem was the insertion of subjects we had not yet learned, causing us to lose focus on other subjects, requiring research time and hindering other disciplines. For those who work, it is very difficult to keep up*". As suggestions for improving the application of the activity, GF1A7 proposes making the work interdisciplinary, while GF1A4 suggests that teachers from more advanced disciplines reapply the activity to test how student skills' have progressed.

Another difficulty faced by students pertained public-speaking fears, with the activity acting as an important stimulus for overcoming it: "*the third phase pushed us outside our comfort zone*". "*I, for example, am very shy, and public presentations are very difficult for me. The sooner we have this type of experience, the better*" (GF1A10); "*I really enjoyed the work, it helped a lot with developing my verbal communication techniques. Being very shy, it was my biggest difficulty. But I think it is essential, because I know I will need [a lot of verbal communication skills] throughout the course*" (A41).

These difficulties may be related to the fact that a large part of the learning process in the Teaching Institution where the activity was applied is still guided by traditional teaching methodologies. This made the experience a challenge for many students. Moreover, the activity could be developed in an interdisciplinary way in regard to the Business Management discipline, which is offered during the same term. This might reduce students' difficulty with distributing their time between the disciplines and also alleviate some of their concerns regarding the experience's complexity.

5 FINAL CONSIDERATIONS

The use of role-play in the Introductory Accounting II (stage 1) discipline proved relevant – according to the perception of the students who participated in the survey and the focus groups – for the development of skills and competencies in all cognitive-domain categories of Bloom's Taxonomy. Per the FBAT (Costa et al., 2018), the development of these skills and competencies was expected to be limited to the first three categories of the Cognitive Domain (Knowledge, Understanding and Application), since these were first-year students still taking an introductory discipline (stage 1 of the FBAT). However, the role-play technique helped students in the development of higher-level categories of the Taxonomy (Analysis, Synthesis and Evaluation), which demonstrates its effectiveness even when applied to the course's introductory subjects.

The application of role-play proved to be effective in reaching the FBAT's stage-1 objectives. Moreover, we were able to apply the technique to all categories of the Cognitive Domain (stages 1, 2 and 3 of the FBAT).

The skills and competencies reaching the highest levels of development were those linked to visualizing the real decision-making environment and to the ability of dealing with uncertainties and incomplete information. The greatest occurrences of improved skills and competencies were concentrated on the highest-level categories of the Cognitive Domain, especially Synthesis. This may indicate the effectiveness of this technique in achieving the proposed learning objectives. It may also indicate that even at the early stages of the accounting course, activities targeting these higher-level categories may have an important role.

Students regarded the role-playing activity as suitable for the teaching of Introductory Accounting II. The categories of the Cognitive Domain interact with each other and with the Affective Domain, suggesting a relationship of simultaneity. The Affective Domain helps in the development of the Taxonomy's cognitive categories, and vice versa. For this reason, it should be included in the FBAT.

These results corroborate those of studies pointing to the effectiveness of active methodologies such as role-play (Kern, 2001, Souza et al., 2013, Souza; Casa Nova, 2017) and teaching cases (Weil et al., 2001, Hodgdon et al., 2011, Bonnier et al., 2013, Coetzee & Schmulian, 2013, Hilton & Johnstone, 2013, Jackling et al., 2013) for the development of skills and competencies, especially in Accounting courses.

This study's results can be useful for everyone involved in the IFRS teaching-learning process, namely: higher education institutions, teachers, students, company managers, regulators and standard makers. The use of role-play proved useful for the development of skills and competencies necessary for the training of accounting professionals. The application of this technique to introductory accounting disciplines may be recommended in order to provide students with a wide view of the reality of business and decision-making processes.

Furthermore, these results can be used by the IASB to improve the FBAT, considering that: all categories of the Cognitive Domain can be developed in stage 1, suggesting that what distinguishes each FBAT stage is how deeply each category of the Taxonomy is approached, not a particular hierarchy; the Affective Domain should be considered in the FBAT insofar as it relates to students assuming an active posture in the teaching-learning process.

The research sample was selected by convenience and the study was exploratory-qualitative in character, making it impossible for results to be generalized. Students' social, cultural and socioeconomic characteristics were not controlled for. This represents another potential limitation, since students' learning may very well be related to these aspects. Another limitation was the perceptual subjectivity involved in student responses. In any case, the focus groups aimed to minimize this issue.

Future research should evaluate this technique's application in stages 2 and 3 of the FBAT, as well as analyze the effectiveness of other active methodologies in the teaching of the IFRS. Another suggestion would be the creation of control groups to understand the technique's relative effectiveness. Researchers should also seek more evidence regarding the need to include the Affective Domain in the FBAT. The inclusion of diagnostic and summative assessments is also suggested, in order to incorporate students' prior experiences and social, economic and cultural variables.

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