
CRITICAL FACTORS OF ACCOUNTING LEARNING AND THE METHODOLOGICAL STRATEGIES USED BY TEACHERS

Sergio Fernández-Araya, Francisco Ortiz-Vidal, Carlos Silva-Salas, Luis Araya-Castillo, Francisco Ganga-Contreras, Adrián Pereira Santana and Fernando James Pilar-Cortés

SUMMARY

In recent years, there has been a change in how accounting is taught, recognizing that students learn more effectively when information is presented practically and when they are allowed to apply what they have learned to real situations. This study aims to identify and analyse the critical factors affecting the learning of accounting students at a university in southern Chile, providing a comprehensive understanding of how different teaching methodologies and external factors impact student performance. Additionally, this study seeks to identify the strategies used by teachers and to assess the extent of innovation in their methodologies, exploring how these practices influence student engagement and learning outcomes. For this, a mixed

exploratory research methodology was applied, using as instruments for collecting data, a survey applied to students, and an in-depth interview with four teachers who teach accounting subjects. These were carried out at the end of the pandemic and thus may be influenced by teaching processes that were less rigorous and more flexible. The analysis of the data reveals that the only variables that significantly impact the probability of students passing or failing an accounting course are the student's interest in the subject and the perceived difficulty of the course and the time dedicated to the study. All the above makes this a relevant study as it opens the door to research the design of new accounting teaching methods.

Introduction

Pedagogical experience plays a relevant role in the life of a teacher as it allows him or her

to reflect and detect problem areas in the classroom to seek the elements that permit adequate solutions to be found for them. Teachers are the ones

who decide how and when to act, what to emphasize, and what to prioritize and what not to do, thus generating balance in the class (Herrera and

Martínez Ruiz, 2018). Pedagogical knowledge implies access to a knowledge network about education and teaching configured by teaching practice

KEYWORDS / Innovation in Teaching / Learning / Methodological Strategies / Teaching /

Received: 01/10/2024. Modified: 06/25/2024. Accepted: 07/02/2024.

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FACTORES CRÍTICOS DEL APRENDIZAJE DE LA CONTABILIDAD Y LAS ESTRATEGIAS METODOLÓGICAS UTILIZADAS POR LOS PROFESORES

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RESUMEN

En los últimos años, ha habido un cambio en la forma en que se enseña la contabilidad, reconociendo que los estudiantes aprenden de manera más efectiva cuando la información se presenta de manera práctica y se les permite aplicar lo que han aprendido a situaciones reales. Este estudio tiene como objetivo identificar y analizar los factores críticos que afectan el aprendizaje de los estudiantes de contabilidad en una universidad del sur de Chile, proporcionando una comprensión integral de cómo las diferentes metodologías de enseñanza y factores externos impactan en el rendimiento estudiantil. Además, este estudio busca identificar las estrategias utilizadas por los profesores y evaluar el grado de innovación en sus metodologías, explorando cómo estas prácticas influyen en la participación y los resultados de aprendizaje de los estudiantes. Para esto, se apli-

có una metodología de investigación exploratoria mixta, utilizando como instrumentos de recolección de datos una encuesta aplicada a los estudiantes y una entrevista en profundidad con cuatro profesores que imparten asignaturas de contabilidad. Estas se llevaron a cabo al final de la pandemia y, por lo tanto, pueden estar influenciadas por procesos de enseñanza que fueron menos rigurosos y más flexibles. El análisis de los datos revela que las únicas variables que impactan significativamente la probabilidad de que los estudiantes aprueben o reprueben un curso de contabilidad son el interés del estudiante en la materia, la dificultad percibida del curso y el tiempo dedicado al estudio. Todo lo anterior hace que este sea un estudio relevante ya que abre la puerta a investigar el diseño de nuevos métodos de enseñanza de la contabilidad.

FATORES CRÍTICOS DA APRENDIZAGEM CONTÁBIL E AS ESTRATÉGIAS METODOLÓGICAS USADAS PELOS PROFESSORES

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RESUMO

Nos últimos anos, houve uma mudança na forma como a contabilidade é ensinada, reconhecendo que os alunos aprendem de forma mais eficaz quando a informação é apresentada de forma prática e quando eles têm a oportunidade de aplicar o que aprenderam em situações reais. Este estudo tem como objetivo identificar e analisar os fatores críticos que afetam o aprendizado dos estudantes de contabilidade em uma universidade no sul do Chile, proporcionando uma compreensão abrangente de como diferentes metodologias de ensino e fatores externos impactam o desempenho dos estudantes. Além disso, este estudo busca identificar as estratégias utilizadas pelos professores e avaliar o grau de inovação em suas metodologias, explorando como essas práticas influenciam o engajamento e os resultados de aprendizado

dos alunos. Para isso, foi aplicada uma metodologia de pesquisa exploratória mista, utilizando como instrumentos de coleta de dados uma pesquisa aplicada aos alunos e uma entrevista aprofundada com quatro professores que ensinam disciplinas de contabilidade. Estas foram realizadas no final da pandemia e, portanto, podem ser influenciadas por processos de ensino que foram menos rigorosos e mais flexíveis. A análise dos dados revela que as únicas variáveis que impactam significativamente a probabilidade de os alunos passarem ou falharem em um curso de contabilidade são o interesse do aluno na disciplina, a dificuldade percebida do curso e o tempo dedicado ao estudo. Tudo isso torna este um estudo relevante, pois abre a porta para pesquisar o design de novos métodos de ensino de contabilidade.

(Restrepo, 2015). Additionally, there is an excellent understanding of the need to generate awareness of the benefits of increasing the coherence between pedagogical knowledge and other learning elements, such as institutional context and evaluation methods, and not solely focusing on academic excellence (Wilhelm *et al.*, 2019).

Today, it is indispensable for teachers to be efficient in their work and identify critical elements that must be taught,

emphasising service-learning and student interests (Ganga-Contreras *et al.*, 2023). In this way, the teacher's work goes beyond explanation and interpretation, proposing actions contributing to comprehending problematic situations. However, only some teachers with practical experience in companies can systematise findings and apply them in the classroom.

The above constitutes a theoretical approach to his or her practice that must be

constantly constructed. From this perspective, with the elaboration of a proposal for attractive classes, a process of growth that allows the student to take on and clearly define the usefulness of accounting for his or her professional formation is developed. Accounting is a crucial discipline in business, as it carries out the register, control, and analysis of a company's financial operations. As such, accountants and associated professionals must be well-formed

in this area to do their work effectively and efficiently. For this reason, it is fundamental to adopt new teaching methodologies in accounting, such as those based on games that allow for creating environments that favour learning and increase the efficacy of the learning surroundings (Campoverde-Luque *et al.*, 2022; Clark *et al.*, 2016; Jääskä *et al.*, 2021).

For many years, the teaching of accounting has been focused on the theoretical learning of

concepts. Teaching accounting is primarily based on rules and norms, leading to teaching based on memorisation and applying these norms to practical situations. However, this has not always resulted in an effective formation, which, in turn, has led to the application of teaching methodologies, such as problem-based learning and active learning, that have been used successfully in the formation of accountants (Clark *et al.*, 2016; Ganga-Contreras *et al.*, 2023; Jääskä *et al.*, 2021; Joshi and Chugh, n.d.).

Problem-based learning is a teaching methodology that centres on resolving real problems. Students work in groups to identify and resolve accounting and financial problems. This methodology helps them to develop other vital abilities, such as critical thinking, as it determines the causes that are detrimental to academic performance, with a foundation in constructivist pedagogy from a holistic formation based on service learning (Burga *et al.*, 2023; Freire Pazmiño *et al.*, 2019). In the same vein, active learning focuses on learning through experience. Students participate actively in their formation, working on projects and practical activities that allow them to apply what they have learned in theory. This focus allows them to learn more effectively and encourages critical thinking and problem-solving, essential skills for success in the accounting field (Burga *et al.*, 2023; Clark *et al.*, 2016; Hmelo-Silver, 2004). A similar focus is known as service learning and has been taken on board by many educational entities and, thus, has provided a large amount of academic evidence (Ganga-Contreras *et al.*, 2019, 2020, 2023; Pérez Galván and Ochoa Cervantes, 2017; Pizarro Torres *et al.*, 2015; Rodríguez-Izquierdo, 2020; Simó Algado *et al.*, 2014).

Combining pedagogical focuses can be especially effective in teaching accounting. One study found that students who participated in a problem-based accounting course

had better academic performance than those who participated in a traditional accounting course (Dolce *et al.*, 2020). Another discovered that active and problem-based learning improved students' comprehension and retention of accounting concepts (Musa, 2022).

Therefore, active, and problem-based learning are effective pedagogical approaches, given that they encourage critical thinking and problem-solving, which are essential skills for success. Combining these approaches and incorporating new pedagogical approaches can contribute to a significant transformation in the teaching of accounting. It can improve the learning outcomes in this field.

For the case of the university in this study, the level of failure of the subjects of the strand of accounting tends to be higher than those of other areas of economic and administrative sciences. All the faculty's undergraduate programs share this strand and include introductory (Initiation in accounting) and advanced (Financial accounting) courses in accounting. It is necessary to point out that the course programs of these subjects are also shared and possess the same learning outcomes.

Thus, this research aims to answer the following question: What factors influence students not achieving the significant learning expected in the curricular activities in the accounting strand? Stemming from this research question, the following hypotheses have been defined:

H1: The methodologies implemented by the teacher affect whether students pass.

H2: There are factors external to teaching that affect whether students pass.

The discussion and analysis section will explicitly discuss each hypothesis to demonstrate how the data supports or refutes these claims. This research aims to uncover the leading causes affecting accounting students' learning at a university in south Chile. Additionally, we expect to

identify teaching strategies teachers use and if these teachers have innovated in methodologies that allow them to encourage and develop activities that impact the learning process.

An exploratory mixed research method was applied. Two instruments were used for data collection: (1) a 29-question survey in a 4-scale Likert format, which was applied to a sample of 125 students, and (2) an in-depth interview with the four academics that teach the accounting subjects.

The main results, with significant practical implications, indicate that student interest in the subject and the perceived difficulty of the course are significant predictors of academic success in accounting. These findings are supported by statistical analysis using a Naive Bayes model, which identified motivation and the teacher's instructional approach as key factors. This confirms Hypothesis 1, highlighting the critical role of teaching methodologies in student performance.

Methodology

This research employs a mixed-methods approach, integrating quantitative data from student surveys and qualitative insights from in-depth teacher interviews. The quantitative component involved a 29-question survey administered to 125 students to measure various aspects of their learning experience and engagement. The qualitative component included in-depth interviews with four accounting professors to explore their teaching strategies, perceptions of student learning, and innovations in pedagogical approaches.

The quantitative component was a crucial part of our research, consisting of a questionnaire that allowed us to learn students' perceptions of improving teaching (Barrado *et al.*, 1999). The elements evaluated included, among others, teacher activities, course content, application and format of evaluations, and the material available to implement the course.

As mentioned earlier, the instrument was applied to enrolled students in accounting curricular activities. These students have experienced face-to-face and online teaching in all their accounting subjects. The contents and competencies are associated with each subject's didactic planning and program, the design of learning environments, and the organisation of educational spaces. The questionnaire was applied using a 4-scale Likert format, which was transformed into dichotomous variables for its analysis to consolidate the obtained results (Table I).

Once the data was collected, it was subjected to rigorous analysis using the classification algorithm known as Naive Bayes. This advanced algorithm is a technique of automatic learning based on the Bayes theorem for carrying out probabilistic classification. In this context, it was employed to determine the impact of the parameters identified through the survey on the probability of students failing (dependent variable).

The advantage of the Naive Bayes approach is its ability to model complex relationships between multiple predictive variables and the variable of interest, in this case, student failure. Analysing the conditional probabilities of the

TABLE I
TRANSFORMATION INTO DICHOTOMOUS VARIABLES

Likert Scale	Dichotomous variable used in the analysis
Totally agree	Agree
Partially agree	Agree
Partially disagree	Disagree
Totally disagree	Disagree

parameters in the survey made it possible to evaluate their influence on the likelihood that the student finds themselves in the failure category. It is essential to highlight that this methodological approach offers a quantitative and analytical vision of the impact of the different parameters under study in the academic results of undergraduate students, which contributes significantly to the comprehension and improvement of the factors that may influence the rate of failure at this level of education. The model was prepared and applied to the data set, obtaining results that account for the posited hypotheses.

On the other hand, the qualitative component involved four teachers of the aforementioned academic activities. The aim was to figure out their insights strategies habitually used by the teachers, their interests in teaching accounting, their teaching model, their perception of why students do not learn accounting, how they innovate in the classroom to motivate the learning of their discipline, and if they possess innovative proposals and suggestions for the learning process.

Results

Students' perceptions

The teacher: As can be observed in Table II, in general, the information obtained is positive, but there are some aspects that it is necessary to highlight and that, for some students, represent aspects to improve. To illustrate this, 27% of students show "disagreement" or "partial disagreement" in whether the teacher adequately distributes time under the difficulty of the issues dealt with, 32% express "disagreement" or "partial disagreement" in whether the teacher delivers the contents with enthusiasm and creates a pleasant class. In turn, 28 % declare "disagreement" or "partial disagreement" in whether they would like to retake classes with the teacher who taught them accounting (Figure 1).

Content: Regarding the subject's contents, students' interest in studying the discipline is the most noteworthy. Considering that learning management is essential to all business schools, the survey results highlight that 11% of the students are in "absolute disagreement" about whether their interest in studying this subject matter has increased, and 20% are in "partial disagreement" (Figure 2).

Tutorials: Tutorials are used in almost all higher education

institutions in order for students to comprehend the contents transmitted by teachers in lectures and put them into practice. There is no doubt about their importance. However, it is worth asking if tutors have the competencies and abilities to teach or if they are prepared to collaborate in delivering the content well. It is not unnoteworthy, then, that in general, 18% of the students show "partial disagreement" or "total disagreement" in that their tutors have adequate

competencies (Figure 3). This aspect may lead to actions aimed at providing tutors with support mechanisms for better management if the desire to improve student formation is the main objective.

Student dedication: The subjective perception that students do not dedicate sufficient time to studying the material is always present. To some extent, the survey results indicate this as a relevant percentage. 23% recognise that they must dedicate more time to preparing

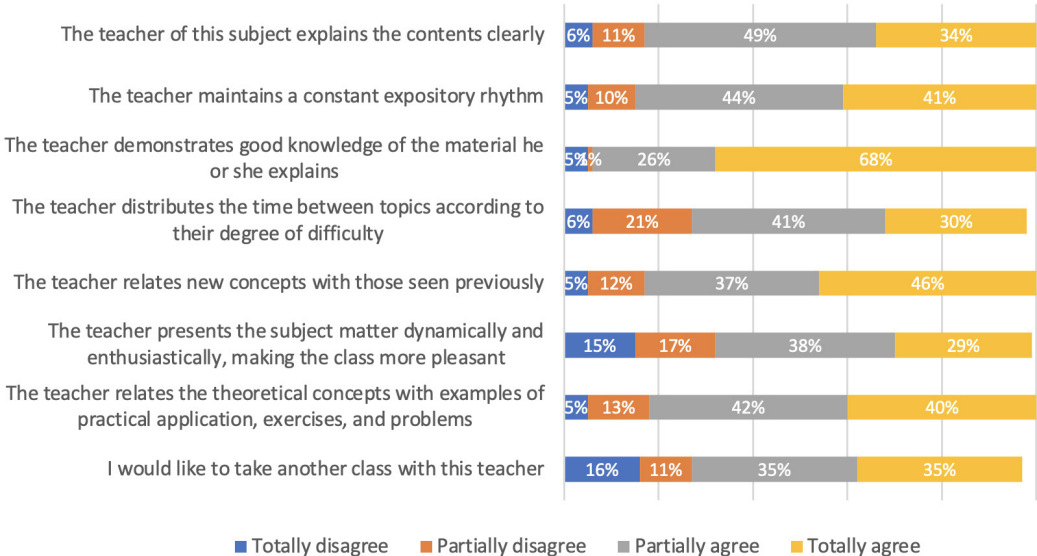


Figure 1. Results of teacher management in the classroom. Source: Own elaboration.

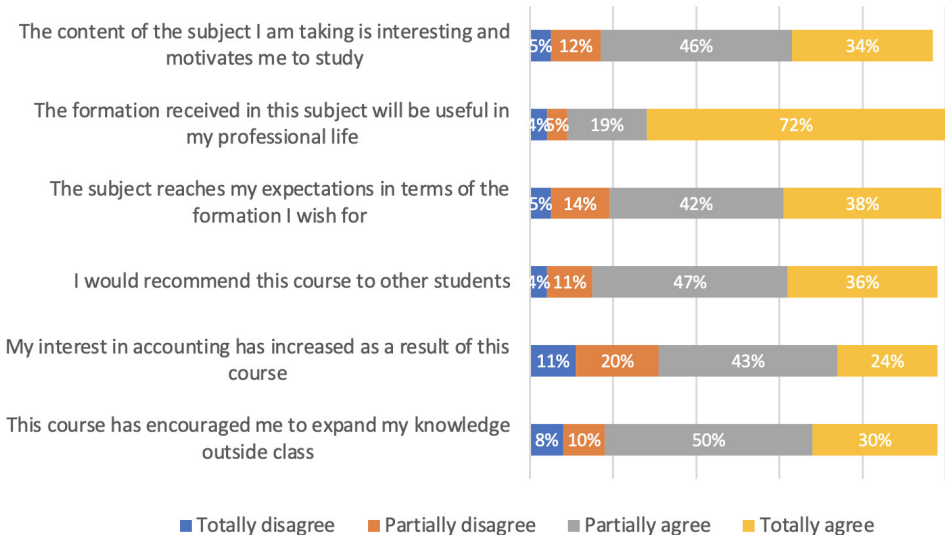


Figure 2. Results based on contents presented in class. Source: Own elaboration.

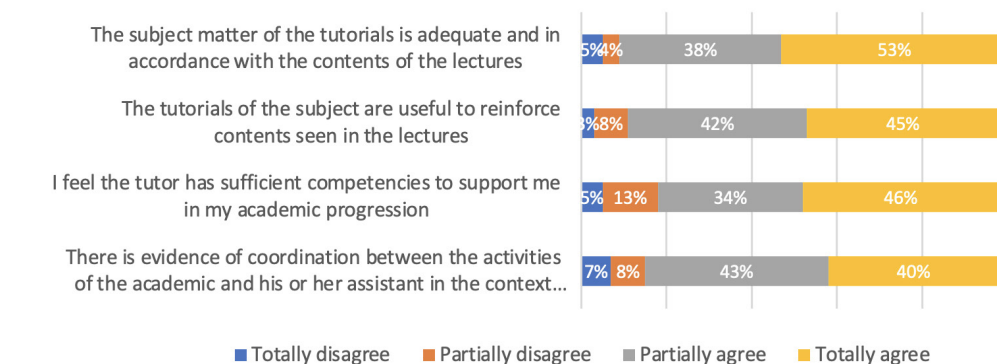


Figure 3. Results of course tutorials. Source: Own elaboration.

their subjects, especially the ones analysed (Figure 4). Dealing with low interest is a challenging aspect to deal with as a teacher, and it is complex to offer an answer if the teacher is not familiar with other aspects of the student's personal and family lives. Teachers needing more pedagogical competencies (there may be exceptions) can have difficulties finding people's emotional aspects. For this reason, it is necessary to keep appealing to the over-worked concept of motivation as a solution to this inconvenience. It is important to note that it was in this aspect that many of those surveyed told part of their pandemic experience, which may influence their dedication to their studies, as it is probable, they did not have adequate spaces or resources, such as a computer and internet, to study.

Planning: The analysis of the results obtained in this aspect suggests teachers should take different actions, given that it is a problem that concerns them directly. 25% show "partial disagreement" or "total disagreement" with the idea that the approach of the subject, as it comes from the teacher, favours student study, and 31% declare "disagreement" with the teacher's planning (Figure 5). That is to say that students express that they require greater clarity in how subjects are taught and how the syllabus is managed during the semester. Therefore, it is required to be more creative,

agile, motivating, and innovative in how accounting classes are designed, planned, and approached.

Evaluations: The findings in this area shed light on, and ratify in some way, the eternal student complaint: that the time dedicated to evaluations is insufficient. In this sense 24% opt for the option of

"total" or "partial disagreement" in whether the evaluations fit the level of complexity dealt with in class, 23% declare they "disagree" that the evaluations encourage memorization of contents, and 21% show "disagreement" to whether the degree of difficulty of the subject is appropriate. The most noteworthy, or that

which ratifies the perception, is that students always show disagreement with the time assigned to evaluations, with 33% "disagreeing" that the time taken for the evaluation is adequate (Figure 6).

Bibliography: It is plausible to estimate a low percentage of bibliography use, as 37% show "disagreement" with the statement that they have used the bibliography. In other words, there is an implicit recognition from a significant percentage of the students that they do not use it. The other significant percentage is 23% who "disagree" that having more bibliographic options would be relevant when comprehending the contents. (Figure 7). This answer could be biased with the previous analysis concerning the non-use, or it could lead to considering that a meaningful percentage of students need to learn or infrequently resort to consulting the



Figure 4. Results of student dedication to classes. Source: Own elaboration.

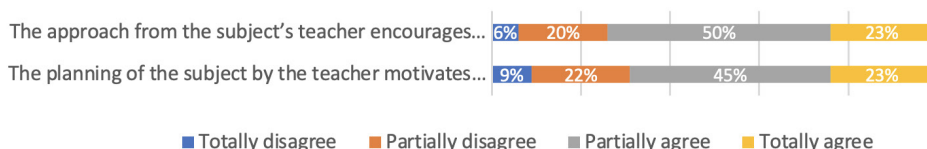


Figure 5. Results of the planning of the subject. Source: Own elaboration.

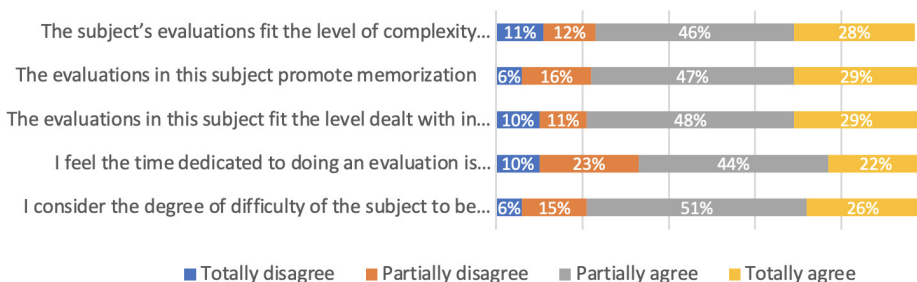


Figure 6. Results based on evaluations done on the subject. Source: Own elaboration.

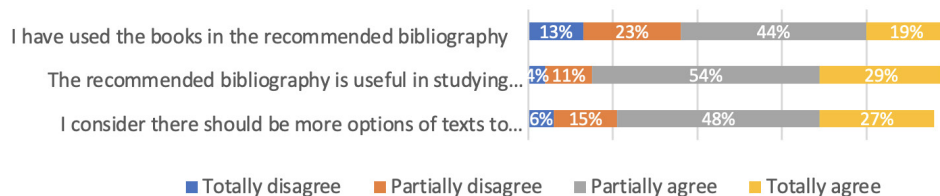


Figure 7. Results based on the use of a bibliography on the subject. Source: Own elaboration.

available bibliography for accounting subjects.

Causes of failure: Among the causes, the class, in general, is highlighted. This line suggests the environment surrounding the realisation of the class, i.e., the planning, the way of transmitting content, the motivation, and the teacher's approach. Another mention refers to the course, referring to the group of people who make it up and how they relate with each other. The figure of the teacher appears, understanding that the students show, from their point of view, that the teachers do not carry out good teaching practices. They mention exercises to indicate that it is necessary to go into more depth in practical aspects because this guarantees their comprehension of the subject matter. Learning is based on comprehending definitions, concepts, and, as a complement, the practical component.

Suggestions: Students were asked to make suggestions that would allow an improvement in the transfer of content and would favour their learning process in accounting. They referred to exercises that require more class time to develop and explain them. Another underlined concept was activities, which can be inferred as activities outside the classroom experiencing the profession, which would allow them to approach the accounting reality of the companies. Once more, the teacher's figure appears as central. However, it is necessary to explain to the students that, under current educational models, they are the main actors in their learning process. Several of the

competencies described in the subject programs indicate that the student learns autonomously, so many options depend on them. However, the role of the teacher is to make them known and ensure the students adopt them.

Data analysis of the student survey results

Through a statistical analysis, a Naive Bayes model was applied, considering the parameters that were asked in the survey (Barrado *et al.*, 1999). The model included the analysis of the 29 independent variables expressed in each survey question (Table II) that were grouped binarily according to the answers given. Only 26 were considered in the model generation from the total number of variables since three (marked in the table) presented a stability above 90%.

The resulting model offers a 70% precision in determining the attributes that significantly impact the passing or failing of the curricular activities in the accounting strand. The results show that the variables in the analysis that most influence students' passing are associated with motivation, the teacher's rhythm, and the time dedicated to the subject.

While the initial perception of failure in accounting subjects was centred on the methodology used by the teachers, the results show that there are others. The teacher maintaining an adequate rhythm in the lectures and possessing an approach that encourages autonomous work is statistically significant when explaining failure in the subject. Thus,

according to the results, the methodology applied by the teacher has an impact on the student failing the course.

The opinion of the teachers who teach accounting subjects: summary of interviews

It is undoubtedly true that the following part of the analysis must include the students, as it is their learning that the teachers influence. For this reason, it is crucial to know their opinion on the teaching-learning processes and what a self-evaluation of these processes represents. Thus, it is considered relevant to focus on the teachers' attitudes facing the changes in teaching and their assessments of experiences over years of teaching. This reflexive, cyclical, systematic, and creative process can impact a business school's curriculum development (Zighan and EL-Qasem, 2020).

The analysis procedure we used to examine the information collected, in this case through the interview, is systematic content analysis. Based on reading the data collection instrument and following the scientific method, it must be systematic, objective, replicable, and valid. Thus, the following questions and answers from the academics reflect the complexity, observation and production of data and the interpretation or analysis of the data. The link between the teacher and the student is the key to favouring the learning development of each student. Teachers, for their part, must take on the responsibility that this connection implies and act

as role models in the lives of their students.

Objectives in teaching accounting

In the opinion of the teachers who habitually dictate accounting subjects, it is inferred that the first thing is to fulfil the objectives established in the subject programs. This implies that the student must learn, in addition to putting into practice all contents indicated in that program, comprehending the importance of accounting and how the different operations that allow him or her to know companies' situation through financial states are registered. On the other hand, achieving the necessary knowledge in the general and specific subject matter will finally help the student find the charm in accounting, understand it, and see its importance as a tool for business management.

Pedagogical concepts and strategies to carry out the task of teaching accounting

The interviewees express that it is important to remember that teaching accounting is based on technical accounting norms. It is pointed out that the strategy used considers the explanation of theoretical aspects but is derived from practice through the presentation of supposed situations to move forward in comprehending natural aspects.

The model that guides the approach to teaching

The teachers explain that the institution works with a learning outcome model (competencies), and they recognise applying it. In addition, the institution offers training in active methodologies and training in using the LMS platform. Some of the strategies used by the teachers include brainstorming, for example, questions about specific concepts, use of digital platforms such as Menti.com or

TABLE II
SYSTEM OF REGISTRATION OF QUALIFICATIONS

Group	Question	Mean
Teacher	The teacher of this subject explains the contents clearly	0.841270
	The teacher maintains a constant expository rhythm	0.857143
	The teacher demonstrates good knowledge of the material he or she explains	0.944444
	The teacher distributes the time between topics according to their degree of difficulty	0.722222
	The teacher relates new concepts with those seen previously	0.833333
	The teacher presents the subject matter dynamically and enthusiastically, making the class more pleasant	0.674603
	The teacher relates the theoretical concepts with examples of practical application, exercises, and problems	0.825397
	I would like to take another class with this teacher	0.714286
Content	The content of the subject I am taking is interesting and motivates me to study	0.817460
	The formation received in this subject will be useful in my professional life	0.912698
	The subject reaches my expectations in terms of the formation I wish for	0.801587
	I would recommend this course to other students	0.841270
	My interest in accounting has increased as a result of this course	0.682540
	This course has encouraged me to expand my knowledge outside class	0.809524
Tutorials	The tutorials of the subject are useful to reinforce contents seen in the lectures	0.912698
	The subject matter of the tutorials is adequate and in accordance with the contents of the lectures	0.880952
	I feel the tutor has sufficient competencies to support me in my academic progression	0.817460
	There is evidence of coordination between the activities of the academic and his or her assistant in the context of the curricular activity	0.841270
Study hours	The study or preparation hours I dedicate to the subject is correct	0.777778
Planning	The approach from the subject's teacher encourages my study and autonomous work	0.746032
	The planning of the subject by the teacher motivates me to study	0.682540
Evaluations	The subject's evaluations fit the level of complexity dealt with in class	0.753968
	The evaluations in this subject promote memorization	0.769841
	The evaluations in this subject fit the level dealt with in class	0.777778
	I feel the time dedicated to doing an evaluation is adequate	0.666667
	I consider the degree of difficulty of the subject to be adequate	0.785714
Bibliography	I have used the books in the recommended bibliography	0.634921
	The recommended bibliography is useful in studying this curricular activity	0.841270
	I consider there should be more options of texts to study this subject matter in particular	0.761905

Jamboard from Google, generation of learning cycles, and, in each class, a short review of the class before.

The data shows that the model encourages active methodologies focusing on the student. This is because the model is open to using main techniques such as whiteboards and pens but combined with new technological tools. Creativity in knowledge development usually uses different methodological strategies such as the presentation of content, development of exercises, presentations, group work, and active methodologies. From this lens, it is necessary to convert creativity into a shared social value that permeates the learning

environments that higher education promotes.

Internal and external factors that are influencing student not learning accounting

The interviewees express that to identify internal and external factors associated with accounting learning. It is necessary to consider how we consider students arriving at university. In this respect, the interviewees indicate that students drag a series of deficiencies from the beginning of the educational process, which grow over time and become more notorious in high school and then with access to university. These include the need for

more permanent study habits, the lack of strategies to develop compelling study, and a low level of motivation for reading. Specifically, we could identify the following factors:

Internal: Lack of concentration in classes, bias that accounting is "boring" or incomprehensible, lack of knowledge of essential mathematical elements, and overload of subject matter as some students catch up on previous courses (failure).

External: Not having had experiences of active classes through having had classes in an online modality has been a negative factor as they are not concerned about learning the subject matter; frequently, they

copy answers word for word from the internet, lack initiative for research or autonomous work, use information excessively from unverified sources and have deficiencies in the administration of their time.

Examples of creative and innovative activities in the teaching of accounting

According to the teachers' assessment, some creative and innovative strategies can be summarised as follows: (1) Use of apparatuses such as cell phones in carrying out questionnaires with application questions related to accounting. (2) Review and analysis of real-life cases of the creation of

financial states. (3) Research and interviews in companies. (4) Conversations with accountants who practice the profession independently. (5) Review videos that illustrate contents of at most 3 minutes. (6) Group search for definitions and then generation of whole class discussions. (7) Utilisation of the word challenge to carry out exercises in class. (8) Accounting games where the students can identify the type of account and the accounting entry. (8) Exercise guides with application in reality.

Current state of creative strategies for teaching accounting

There is agreement among the teachers that there are no, or very few, options for creative strategies, as seen when they state that few strategies are used to teach accounting, or maybe there is a lack of knowledge of new methodologies. They believe, in general, that this point does not have relevant development. They have kept those described in the previous point alive, but they are willing to learn and apply others if necessary. The majority recognise that they still use traditional methods.

Possibilities for creative and innovative didactics to teach accounting

The interviewees believe that it would be possible for some concepts, but in general, the most effective way to learn accounting is by applying reiterated exercises. However, they do not close the door to the possibility, but giving incentives, training, and orienting teachers would be necessary. They consider it possible to employ creative didactics and that today's students.

Discussion and Analysis

During the year 2020, an improvement can be appreciated in the levels of failure in accounting courses. This has been influenced by the virtual

conditions the curricular activity was developed in due to the pandemic. However, these levels are exceptionally high, and thus, it becomes necessary to analyse them in depth to determine what is impacting these levels of failure. Table III shows the percentages of failure for the years 2018, 2019, and 2020.

It can be inferred from the teachers' responses that there is an excessive attachment to traditional forms of teaching, even when they are aware of the need to innovate and adopt new teaching strategies that allow real and significant learning. In this sense, tools already used during the pandemic, by which we refer to Open Educational Resources (OER), could be a sizeable resource for the academics preparing their teaching materials online. In any case, teachers may not know how to approach these resources or integrate them into their courses, as this issue has concerned educational technologists, even before the social unrest in Chile that occurred on the 18th of October (Chotto and Rivera, 2017; Ganapathy *et al.*, 2015; Sunar *et al.*, 2020).

During the period of the pandemic, academics had to adapt their courses, which had been initially prepared for face-to-face teaching, to a virtual mode of education that was new and sudden and required preparation from many institutions, especially in the use of e-learning. However, very few institutions offered

training courses in creating online content for the vast majority of students, maintaining students' motivation, and evaluating students online (Armas-Alba and Alonso-Rodríguez, 2021; Barrientos-Báez *et al.*, 2021; Campoverde-Luque *et al.*, 2022; Cisneros-Barahona *et al.*, 2023; Nabukeera, 2020; Watermeyer *et al.*, 2021).

After the pandemic ended, and given the technological advances, this teaching mode remains valid. Thus, it must continue to be applied and developed in such a way as to become widely adopted, improving the academic formation of professionals, especially those prepared for economic and business administration careers.

The analysis of the data reveals that the only variables that significantly impact the probability of students passing or failing an accounting course are the student's interest in the subject and the perceived difficulty of the course. This supports Hypothesis 1, which posits that the methodologies implemented by the teacher affect student success. Specifically, students' engagement levels and the clarity and enthusiasm with which teachers deliver content are crucial factors.

The discussion of the findings highlights a significant interplay between the quantitative data from student surveys and the qualitative insights from teacher interviews. For instance, the high failure rates observed (Table III) can be linked to both the instructional

methodologies and the external motivational factors identified in previous studies (Clark *et al.*, 2016; Ganga-Contreras *et al.*, 2023). This mixed-method approach underscores the importance of adopting active learning and problem-based learning techniques, as suggested by Hmelo-Silver (2004), to enhance student engagement and understanding.

Additionally, the qualitative data indicates that teachers recognize the need for more innovative approaches (e.g., the use of digital tools and real-life case studies) to make accounting more appealing and comprehensible (Dolce *et al.*, 2020). This aligns with the literature on effective teaching practices in higher education (Misseyanni *et al.*, 2018), further supporting Hypothesis 2 that external factors, including the availability of adequate resources and support systems, significantly impact student learning outcomes.

Conclusions

Higher education institutions have a relevant role in ensuring that teachers follow the lines drawn out in the educational models they apply. The data collected suggests that the adaptation from educational models based on contents to models based on competencies has yet to create greater interest in studying the subject matter in accounting in more depth. The results show that it is possible to indicate that almost a third of students have no interest in going into more depth in the

TABLE III
SYSTEM OF REGISTRATION OF QUALIFICATIONS

Program	Subject	Percentage of failure (%)		
		2018	2019	2020
Accounting	Financial accounting	50.85	30.77	22.81
Accounting	Initiation to accounting	54.32	20.65	20.37
Business	Financial accounting	36.96	18.80	19.44
Business	Initiation to accounting	34.97	28.57	28.99
Management control	Financial accounting	10.00	26.83	26.32
Management control	Initiation to accounting	61.04	56.10	23.40

Source: Own elaboration.

material analysed in this area. On the other hand, it is of concern that less than 20% of students said that the formative process has managed to generate the necessary competencies for them to collaborate in their learning process. Furthermore, only 77% of students admit to dedicating enough time to their curricular activities, and slightly more than 60% recognise using the course bibliography.

Thus, the need to make a more significant effort to motivate students to comprehend the subject matter becomes both indispensable and presented as a challenge for teachers, emphasising the importance that the knowledge and understanding of accounting, the language of business, has for professionals in the area.

Active methodologies offer real-life problem-solving abilities and prepare students as responsible and active citizens (Misseyanni *et al.*, 2018). Different research studies have observed Their positive effects on students' learning (Gómez-Hurtado *et al.*, 2020; Olgun, 2009). These methodologies place the students at the centre of this process and convert them into protagonists, going from mere spectators to main actors in the teaching-learning process. In this order of things, they represent a desirable option for university education to satisfy the needs and demands in this new educational context, thus rethinking the role of educators as possessors of knowledge (Campoverde-Luque *et al.*, 2022; Cisneros-Barahona *et al.*, 2023; Ganga-Contreras *et al.*, 2023; Gómez-Hurtado *et al.*, 2020; Wilhelm *et al.*, 2019).

All in all, the data obtained shows that the only variables that explain failure when taking an accounting subject are centred on the student's interest in the curricular activity and how he or she considers the difficulty of the subject. However, we must uphold the period in which this research was done. Undoubtedly, the experience of receiving classes during the pandemic influenced the amount of time

dedicated to study. Among the reasons for this, we can find the necessity for more adequate spaces and resources to interact fluidly in a virtual classroom, as well as unstable connections that did not permit continuous and fluid sharing with classmates.

The study acknowledges several limitations. Firstly, the relatively small sample size (125 students) limits the generalizability of the findings. Additionally, the qualitative tool of interviews, while providing rich insights, has intrinsic limitations such as potential biases and subjectivity in responses (Burga *et al.*, 2023). Future research should consider larger and more diverse samples to validate these findings further and explore additional variables such as socio-demographic characteristics and intrinsic motivation.

In addition to the small sample size, the use of qualitative interviews presents certain limitations, such as the potential for bias and subjectivity in responses. While these interviews provide valuable insights, they should be interpreted with caution and complemented with quantitative data for a more balanced understanding.

Future lines of research need to advance in consolidating and perfecting educational models based on learning outcomes to reach more significant commitment from students and teachers. Additionally, it is considered pertinent to know the opinion of students about aspects that, from their perspective, would allow better performance in the course, offering new research opportunities. Furthermore, these studies could extend to other universities at a national and international level to generate comparative works, recommendations, and suggestions for local and global reach.

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