

**UNIVERSIDADE ESTADUAL DE MARINGÁ**  
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**Área de Concentração: Controladoria**

**LEARNING STYLES AND THE PERFORMANCE OF INTERNSHIPS IN  
ACCOUNTING**

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**LEARNING STYLES AND THE PERFORMANCE OF INTERNSHIPS IN  
ACCOUNTING**

Dissertação apresentada como requisito parcial para obtenção do grau de mestre em Ciências Contábeis, do Programa de Pós-Graduação em Ciências Contábeis, da Universidade Estadual de Maringá.

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**PROGRAMA DE PÓS-GRADUAÇÃO EM CIÊNCIAS CONTÁBEIS – PCO**



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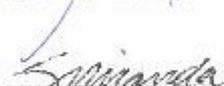
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## **ABSTRACT**

Feeling professionally unprepared to take on a professional bench after years at higher education institutions should not be a problem, however many studies have regarded the disparity between what is being presented at the education institutions and what is actually required from accounting professionals. One place feasible to change in order to better align students to real life requirements is internships. Internships are a key part in bridging the gap between theory and practice and such programs can benefit all agents that are involved, specially students who are the main actors of the process. Internships in accounting at UEM have been very linear in the sense that most of them have been conducted at tax accounting departments of accounting offices. Since students learn in many different ways and internships have been mandatory at UEM which implies a large involvement of professors and companies, the goal of this study was to unveil the impacts of learning styles in the performance of students who have undergone mandatory and optional internships at UEM. The learning styles of 247 students were measured by Kolb's Learning Style Inventory and the performance by the students themselves and also by 35 of their on-site supervisors. With the use of chi-square and mean score statistics, the results indicate that the students' learning style does not affect their internship performance and that internships are a valuable employment method for accounting students at UEM. Other results indicate that the performance as assessed by students and the supervisors themselves portray that the performance of students during the internships is above average. It is wished that this study can contribute to the organization of accounting internships throughout Brazil by faculty staff.

Keywords: internships; learning styles; experiential learning theory; accounting

## **RESUMO**

Sentir falta de prepare profissional para assumir um cargo após anos de estadia em instituições de ensino superior não deveria ser um problema, entretanto, muitos estudos tratam da disparidade entre o que é apresentado nas instituições de ensino e o que de fato é requerido dos profissionais contábeis. Um elemento passível de mudança afim de melhor alinhar alunos às expectativas profissionais é o estágio. Estágios são uma parte chave para encurtar a lacuna entre teoria e prática e estes programas podem beneficiar todos os agentes envolvidos, principalmente os alunos que são o agente chave do processo. Os estágios em contabilidade na UEM têm sido muito linear no sentido em que a maioria deles tem ocorrido em departamentos fiscais de escritórios contábeis. Sabendo que os indivíduos aprendem de formas diferentes e que na UEM são obrigatórios o que implica um amplo envolvimento teórico de professores e empresas, o objetivo deste trabalho foi de descobrir os impactos dos estilos de aprendizagem no desempenho de alunos que realizaram estágios obrigatórios e não-obrigatórios. Os estilos de aprendizagem de 247 alunos foram medidos pelo Inventário de Estilos de Aprendizagem de Kolb e o desempenho medido pelos próprios alunos e 35 de seus respectivos supervisores nas empresas. Com uso de estatísticas de Qui-Quadrado e Teste do Score médio, os resultados indicam que o estilo de aprendizagem dos alunos não afeta o desempenho de estágio e que os estágios são um método valioso de empregabilidade para os alunos de ciências contábeis da UEM. Outros achados indicam que o desempenho avaliado pelos próprios e os próprios supervisores retratam que o desempenho dos alunos é acima da média. É esperado que este estudo possa contribuir para a organização de estágios em ciências contábeis no Brasil pelos professores.

Palavras-chave: Estágios, Estilos de aprendizagem; Experiential Learning Theory; contabilidade

## **DEDICATEE**

I dedicate this work firstly to God, without whom I would not be here. Secondly, to all my university professors who were always generous to assist and provided an environment for the collection of data, in special to my advisor Kelly Cristina Mucio Marques for the support and help. Last but not less important to my family, including my wife Letícia who always understood the struggle and the moments I couldn't be with her. I would also like to make an honorable mention to all of my friends and colleagues who somehow helped this all come together.

## **ACRONYMS AND ABBREVIATIONS LIST**

AC – Abstract Conceptualization

AE – Active Experimentation

AICPA – American Institute of Certified Public Accountants

CAPES - Coordination for the Improvement of Higher Education Personnel

CE – Concrete Experience

ELT – Experiential Learning Theory

GMAT - Graduate Management Admission Test

GRE - Graduate Record Examination

INEP - Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira

HEI – Higher Education Institution

IQ – Intelligence Quotient

KLSI or LSI – Kolb’s Learning Style Inventory

NACE - National Association of Colleges and Employers

RO – Reflective Observation

UEM – Maringá State University

USP – São Paulo University

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## 1 INTRODUCTION

### 1.1 JUSTIFICATION

Once the college years are over, many recently graduated students do not feel ready to take professional benches in which they were prepared for during four or five years in college. The study of Siegel and Sorensen (1994) highlights that recently graduated persons do not reach professional expectations, among other reasons due to the lack of practical experience. Experience is seen as so important that Jones and Abraham (2007) found that students view experience as the single most important factor that influences their potential hiring or not is previous work experience. Students might feel as if the fact that they are or once were temporarily employed and can add this experience to their resume is more important than the actual knowledge acquired during the internship program itself. It is true that most firms do in fact prefer professionals with experience due to high training costs and a long-term learning period that newcomers without experience have to go through.

To worsen the scenario, there is a visual disparity between accounting education and accounting practice. In a study, Grumet (2001) recalls that while the accounting academic community has success in teaching the theoretical side of the profession, it has been since moving away from the actual life of real word accounting. Kavanagh and Drennan (2008) found that both employers and students agree that universities are not adequately developing non-technical and professional skills. This is possible to see in any deep conversation with a last semester accounting student but not only in the accounting area, as in any area. It is virtually impossible that a bachelor's degree course can pass on all the knowledge that is required to sustain one's profession until retirement time, as the professional fields evolve over time and the practices of the profession will be reconsidered and enhanced. For this motive, it's the objective of Higher Education Institutions (HEIs) to shape not only citizens with technical mastery but also with a critical perspective and the capacity of autonomous learning, being these characteristics required in order to adapt to new professional requirements as they appear. Santos (2011, et al.) believe that the HEIs which care for their

future professionals should offer a formation that is capable of reaching this demand. However, this task is arduous. Some HEIs have desperately relied on internships in order to lessen this gap problem, many of them without consenting the literature and acting on impulse.

It is in this sense that internships, under the form of learning from experience, come to bridge the difference between theory and practice. Brazilian authors (Torres et al., 2011) and international ones (Bakar et al., 2011), for example, highlight innumerable benefits for all the agents involved in the internships, which are academics, companies and the academy. These benefits include, for example, integration between theory and practice, confirmation or not of the professional choice, lower costs for the companies and the integration with the market for the academies. Internships have also been proven to make students more marketable (Pasewark et al., 1989). Such benefits make internships appealing to study and comprehend gathering feedback on how to improve it. There are also other advantages, as well as disadvantages, which will be presented later in this dissertation.

Knowing that internships can in fact be beneficial to students as cited shortly in the paragraph above, it is also interesting to see which style of learners could potentially benefit even more from such programs. Hypothetically, if the majority of students learn best by theoretical aspects and are performing more concrete experiences tasks, there could be a problem. If the learning styles are known and a panorama of internship programs can be built, it is possible to assess if results from such programs have benefited the majority of students or not, also giving the opportunity to enhance internship experiences in order to reach other types of learners.

Other papers have mapped learning styles in accounting (Reis, et al. 2012; Leite Filho et al. 2008; Geiger, 1992; Nogueira & Espejo, 2010) but none of them in relation to internships, which are important components of pedagogical curriculums that little is known about. If, for example it is found that one specific type of learner is getting better results from internships and other types of learners are not, program coordinators have the opportunity to comprehend why this is happening and alter some configurations so that other types of learners are able to reach similar results.

Another reason to conduct this research is that according to Alpert, Heaney & Kuhn, (2009) there is little empirical evidence on the details of internships. These authors highlight that questions such as what should internships accomplish, how could they be structured and how should the students be assessed remain unknown. Many papers have focused on capturing the perceptions of agents involved with the internship process such as Alpert et al.

(2009) and Bakar et al. (2011) mapping what are the benefits and deficiencies of such programs for the agents involved.

To the best of knowledge at disposal researching through keywords such as: learning styles and internships at the CAPES database, there is no other research measuring learning styles in relation to performance in accounting internships. There are however, studies such as (Reis et al. 2012) which analyses the learning styles of accounting students. Other authors such as (Leite Filho et al. 2008) also conducted a research about learning styles and academic performance; however, these authors analyzed the grades of students in some disciplines in relation to their learning styles and found no correlation. Internationally, Geiger (1992) conducted research on learning styles of introductory accounting students and found that those students who have similar learning styles of their instructors performed better. Stout and Ruble (1991) also researched the topic and found that accounting majors possess different learning styles in relation to those of undergraduate business.

Brazil is much behind first world countries in many aspects of education. In the USA just to cite a comparative, there are around 10 times more doctors per capita than in Brazil (US Census Bureau, 2014; INEP, 2013). According to data from *Instituto Paulo Montenegro*, in 2011, only one in every four Brazilians dominates completely the skills of reading, writing and mathematics. Data like these are worrying and show an old flaw; however, there is a lot of room for improvement and changes of quantitative and qualitative nature have been made, specially in higher education which is the focus of this study.

According to the Sinopse da Educação Superior of 2015 supplied by Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira (INEP), there are 1.274 courses of accounting in Brazil, making it the third biggest in numbers, only behind Business Administration, which has 2.107 courses, and Pedagogy, having 1.674. These numbers make this research more representative since the number of accounting students in Brazil was 358.452 in 2015.

Although the education thematic is very broad and much attractive in many ways, the scope of this study is in higher education, more precisely in what concerns internships in accounting of students enrolled at Maringá State University. Such internships are supposed to be a learning extension through professional contact so that it can help to close the gap between theory and practice. The key part in internships is that it should not be considered only a compulsory activity to obtain a diploma, but as a key player in the development of skills which are necessary (teamwork, communication, critical analysis and problem solving) to successfully engage in the professional market. Such skills as cited in this paragraph are

normally not presented to students in the classroom, hence most degree programs are typically centered on the development of technical knowledge and not the context to which this knowledge is applied (Bayerlein, 2015).

As the internship in the Accounting course at Maringá State University (UEM) is obligatory, the population for this research is vast and representative due to the quantity of students who have undergone internships in recent years, which ultimately brings more representativeness to the study. There are also students who engage in internships of non-mandatory nature and these are focus of study due to the many comparisons that can be withdrawn from these distinct groups.

## 1.2 MAIN OBJETIVE AND RESEARCH QUESTION

In face of the justifications and the relevance presented above, many are the ideas that surface in order to measure the impact internships have on students. As no other research has dedicated itself to measuring learning styles and its impacts on internships performance in accounting higher education and since the number of accounting students in Brazil is by the hundreds of thousands, hence this is a great opportunity to do something different, new and original. In addition, internships and internship performance are relevant topics with little empirical evidence in accounting research.

The main objective of this dissertation is **to verify what are the impacts of learning styles in the performance of students who have undergone mandatory and optional accounting internships at UEM**. By this work measuring the learning style of trainees, the premise is that the ones responsible for the programs at the accounting departments can have a better view of what type of students the internship is working best and how implement best practice strategies to make it better for other types of learners, if disparities are found.

Aligned with the main objective there is also the research question, which is: **What are the impacts of learning styles in the performance of students who have undergone mandatory and optional accounting internships at UEM?**

The procedures of how this impact is measured will be approached in the part that describes the methodology design of this study, presented in a further segment of this paper.

### 1.3 RELEVANCE

Theory and practice should always be aligned but this is a utopia. It is easy to image that there is a mismatch between both strands; or the theory (academy) is ahead of practice (job market) through the investments in research, or the practice side is ahead of theory through professional diffusion and evolution and also because of the proximity of real-world problems. In many cases, real word problems lack solutions that would have to come from theory but ultimately are solved by practitioners and widely adopted as a convention, as for example, the convergence to international accounting practices, a process that certainly does not come from theory. Such disconnect between theory and practice has been documented by Christopher et al. (2013) and Dombrowski et al. (2013) among others.

Feeling professionally unprepared leaving college at first may seem something ungrounded and unimaginable because it is in this moment that the student's mind should be fresh with technical knowledge, remembering many things that were learned through one's stay at college, but that is not what happens most of the time. Traditionally, students and society visualize accounting as uninteresting, a tedious occupation which focuses on technical domain (Dimnik & Felton, 2006) however, the contemporary scenario demands an accountant with holistic views, critical analysis and the capacity to solve unexpected problems, among other characteristics cited by Jackson & Chapman (2012). For this new accounting professional profile, the technical knowledge passed on by universities is no longer enough to reach market standards. Due to this, HEIs require help from the work market itself through internships in order to connect students with the job market closing this existing disparity between what is taught at colleges and universities and how things really happen in the day-by-day profession. This gap problem is large and is seen as such an urgent issue that some HEIs make it mandatory for students to undergo internships before getting their diploma. This research can serve as basis for new studies to explore even further learning styles and the relation to performance in accounting internships, hence the scarcity of literature that has been so far developed.

Another reason why this research is relevant is that obligatory internships are under review at various different sites and institutions, including at the host study site, which is the accounting department at UEM. Meetings have been conducted to discuss the effectiveness of the current internship system as to if it is necessary to be mandatory or leave it as optional for students that wish to undergo such experience. Feedback from students (specially the negative aspects of obligatory internships) have been a major player in these discussions. The results of

this dissertation should shed some light on this topic and confirm or not whether it is a good idea to keep it the way it is or to alter the current way it is being done.

One negative reflex of the widespread use of internships is that according to Boyce (2004) the traditional programs normally focus on training and not on education, causing great harm to the student since through this form he or she only has access to technical knowledge, which is inherited through memorization of pre-established processes. The problem with this is that once faced with a situation or task he or she is not familiar with, one might culminate in identifying and applying wrong knowledge from the memory bank (Bayerlein, 2015).

Companies may benefit tremendously from internship programs since they are the ones who will receive these future professionals. Firms can benefit while the students are under internship programs (low cost, vice-free professionals) and these students leave college and enter the work market with experience. Students benefit through an opportunity to learn and gather experience as well as to decide whether they are making the right choice of area. HEIs also are contributed with market approach thus allowing a bigger alignment with practical problems. If conducted properly, internships can be beneficial to all agents involved.

The paragraph above denotes only one of the impacts that internships has on the students, as well on the other agents involved (host company, student, education institution). Some of these impacts are positive and others negative as seen earlier. It is important to keep in mind that being either negative or positive, internships have potential of changing the field of knowledge of those who part in it. This is done through the acquisition of new content (Mihail, 2006), creation of personal and professional efficacy (Bernstein, 1976), as well as the confirmation or not that one chose the right profession to follow.

Because of the power that the internships possess over the agents involved and the importance that education has always had in society, this dissertation justifies itself for approaching an extremely relevant topic to which all eyes must be turned to so that we can have more qualified professionals leaving higher education. Aside from this, it is important to enhance the development of skills, which will certainly contribute to the evolution of students and consequently the professionals of the future.

#### 1.4 STUDY DELIMITATION

This study has as a delimitation of gathering information only from internships in accounting from students of Maringá State University (UEM), which implies that the findings of this research cannot be generalized to other courses nor to other institutions.

The applied chronological outline of this research to obtain answers from the involved agents is of students currently enrolled in accounting at UEM in the year of 2016 who have undergone internships. This study captures the perception of those involved in the internship process and grounds the findings based on recent information, portraying a contemporary reality, not being applied to the old accounting job market as earlier cited in this dissertation.

The reason Experiential Learning Theory was selected for this research is that the instrument used for identifying the learning styles has been used, improved and validated throughout the last decades, thus ensuring more trustworthiness for the findings and correlations with other variables.

#### 1.5 ORGANIZATION OF THE STUDY

Aside from the introduction, this study divides itself in four other sections. The second section presents the literature review, which brings concepts that are necessary aiming the problematic comprehension. After, the methodological procedures that compose the study are presented. In the fourth section, the discussion of the results is shown along with the necessary analysis. Last but not least, the last section brings the conclusion with the final considerations and suggestions for future research that wish to better explore the problematic.

## 2 LITERATURE REVIEW

### 2.1 THE ACCOUNTING PROFESSIONAL PROFILE

In any country, the accounting profession has been associated with standardization, with a range of associations representing the professionals. When the accounting course was separated from the course of Actuarial Science in Brazil in the 1940s and shortly after regulated, these accounting professionals were labeled as bookkeepers, regulated workers that mainly registered financial transactions in a double entry fashion. In this scenario, the “good accountant” was the one that had the capacity of assessing the taxes to be paid and to structure financial statements by the end of long and tense financial periods (Machado & Nova, 2008). For that era, this type of professional was perfectly suitable for the necessities companies had at the time.

The technological evolution contributed the evolution of the accountant since many activities that were once responsibility only of the accountant came to be replaced by information systems. Since then, companies have no longer demanded accounting professionals that portray past events and handle numbers. Today, managers possess spreadsheets of accounting data that permit various types of analysis that can be done by the user alone, causing the accountant no longer to be a mandatory employee because of one’s computer and number handling skills (Boer, 2000).

In the current dynamic environment in which all are faced, there is a need for highly dynamic, flexible accounting professionals with general knowledge of economy and finance. Few are the accountants of today that would like to be labeled as old time bookkeepers, responsible only for the keeping track of the companies’ activities, acting as a taxing broker.

The accountant of the present must be able to interact with other cultures (using other languages, aside from having knowledge in international accounting), dominate and impose new techniques and tools as well as management systems, not only registering and analyzing but foreseeing and suggesting, acting more a like an information manager than a data unifier (Machado & Nova, 2008).

It is noteworthy to say that there has been much market appreciation for the accounting profession recently, probably due to the globalization phenomenon and the search for global convergence of accounting standards (Marin, Lima & Nova, 2014).

According to Machado & Nova (2008), the accountant of the present works with the aim of being a strategic partner of the business, not only giving support to decision-making, but also suggesting and giving insights of the paths that shall be taken by the company. This is something very different from what was seen in the 1980s where the accounting professional didn't even participate of the decision-making process (Siegel & Sorensen, 1999).

The constant change in scenario demands a capacitated professional that has abilities in other areas of knowledge, aside from the technical accounting knowledge. The very Conselho Federal de Contabilidade (2010), which is the Brazilian Accounting Board, affirms that the job market seeks to hire accountants with various abilities, with proactive nature, having sense of responsibility and the capacity to be always updated.

In a study published in 2004, Oliveira and Arruda disclose that the job market looks for accountants with a set of abilities that range from technical domain, knowledge of other languages, leading capacity, teamwork spirit, urge to be always updated, professional enhancement and even technical accounting knowledge.

More recently, Marin, Lima & Nova (2014) conducted a study with the objective of identifying the professional competencies of accounting students of Brazil's most important university (São Paulo University or USP) and compare them to what is expected by high positioned business professionals and human resource consultants. The results show that in general, the students are positively highlighted for their theoretical knowledge and proactive posture but lack practical knowledge, leadership and English language proficiency.

Much of this can be explained by the reports of the professors themselves. Silva (2014) in his doctoral thesis collected opinions from accounting professors at USP. These professors highlighted many deficiencies such as the gap between the academic formation and the job market dynamic, the predominance of lectures or expository classes and emphasis on technical knowledge. The respondents also reported the necessity of more rigor and diversification of student assessment and the lack of political perspectives and citizenry in the student's formation.

Also in his thesis, Silva (2014) captures the opinions of the students who highlight that there is lack of articulation between accounting disciplines and those of other departments, there is also a surplus amount of mandatory disciplines of accounting nature, which makes it difficult to form an interdisciplinary vision. Students also complained about the absence of professionalism of some professors who don't care about the content to be taught nor respect the pre-defined schedule. The factors mentioned in this paragraph and the one above give

some insight as to why requirements haven't been met by USP's accounting students and might suggest that this also takes place elsewhere.

It is important to highlight that it may be occurring that most students attracted into accounting courses may not be aware of the contemporary extended role of the accountant in today's professional life compared to the one of 20 years ago, thus making it even harder to possess the qualities demanded by the labor market for such professionals.

The AICPA (American Institute of Certified Public Accountants) put together a framework of what they call "core competencies". These core competencies are divided into 3 main categories, which are functional competencies, personal competencies and broad business perspective competencies.

The AICPA (2016) define each one of the divisions cited in the last paragraph. Functional competencies are the technical competencies most closely aligned with the value contributed by accounting professionals. The personal competencies are individual attributes and values. Lastly, the broad business perspectives competencies are perspectives and skills relating to understanding of internal and external business contexts.

Beard (2007) compiled AICPA's core competencies and related them to internships. In her work, it is cited how students can with internship experiences develop such competencies. This information can be seen on table 1.

Table 1: AICPA's Core competencies and internships

AICPA Core Competencies	As a result of the internship, a student will be able to
<b>Functional Competencies</b>	
Decision modeling Risk analysis	<ul style="list-style-type: none"> <li>• Objectively consider alternatives</li> <li>• Display awareness of business and financial risk</li> </ul>
Measurement	<ul style="list-style-type: none"> <li>• Recognize the use of financial and non-financial measures that are relevant and reliable</li> </ul>
Reporting	<ul style="list-style-type: none"> <li>• Prepare clear and concise documents</li> </ul>
Research	<ul style="list-style-type: none"> <li>• Complete high quality work that complies with relevant guidelines and standards</li> </ul>
Leverage technology to develop and enhance functional competencies	<ul style="list-style-type: none"> <li>• Demonstrate effective microcomputer skills in conducting research and in completing work</li> </ul>
<b>Personal Competencies</b>	
Professional demeanor	<ul style="list-style-type: none"> <li>• Identify and prioritize career goals</li> </ul>
	<ul style="list-style-type: none"> <li>• Learn from mistakes</li> </ul>
	<ul style="list-style-type: none"> <li>• Display appropriate business dress</li> </ul>
	<ul style="list-style-type: none"> <li>• Display promptness and dependability</li> </ul>
	<ul style="list-style-type: none"> <li>• Display an appropriate attitude toward work</li> </ul>
	<ul style="list-style-type: none"> <li>• Display respect confidentiality</li> </ul>
Problem-solving and decision-making	<ul style="list-style-type: none"> <li>• Display good judgment</li> </ul>
	<ul style="list-style-type: none"> <li>• Know when to follow directions, question plans, or seek help</li> </ul>
Interaction	<ul style="list-style-type: none"> <li>• Demonstrate an ability to work with others</li> </ul>
	<ul style="list-style-type: none"> <li>• Demonstrate continuous improvement by accepting and acting on criticism</li> </ul>
	<ul style="list-style-type: none"> <li>• Interact and cooperate productively and maturely with others</li> </ul>
Communication	<ul style="list-style-type: none"> <li>• Demonstrate effective written and oral communications skills</li> </ul>
Project management	<ul style="list-style-type: none"> <li>• Demonstrate time management</li> </ul>
	<ul style="list-style-type: none"> <li>• Display initiative</li> </ul>
	<ul style="list-style-type: none"> <li>• See projects through to completion</li> </ul>
Leverage technology to develop and enhance personal competencies	<ul style="list-style-type: none"> <li>• Exchange information using appropriate communication technologies such as e-mail</li> </ul>
<b>Broad Business Perspective Competencies</b>	
Strategic/critical thinking	<ul style="list-style-type: none"> <li>• Display an understanding of general business issues</li> </ul>
	<ul style="list-style-type: none"> <li>• Apply cross-functional academic areas</li> </ul>
Industry/sector analysis	<ul style="list-style-type: none"> <li>• Understand the relationship of accounting, finance, and economics to business</li> </ul>
Legal/regulatory perspective	<ul style="list-style-type: none"> <li>• Recognize basic legal and regulatory issues</li> </ul>
Leverage technology to develop and enhance broad business perspective	<ul style="list-style-type: none"> <li>• Understand the components of the management</li> </ul>

Source: Beard, 2007

As can be seen in the table 1 as compiled by Beard (2007), internships have potential to prepare students for a successful professional career. Each AICPA core competency has its counterpart that is provided by internship experiences.

The big inquietude that leaves no answer is to know if accounting courses are giving correct support for the formation of these professionals, which should have horizontal knowledge, be dynamic, adaptable, and communicative among other characteristics attributed to the modern professional. More specifically, the biggest questioning of this dissertation is to unveil the role of the internship in the formation of this professional, if there are effective contributions reflected on the learning of the trainee and one's subsequent professional formation and performance.

More contributions could be made to this subject but there is a lack of empirical studies about the competencies of the accountant (Marin, Lima & Nova, 2014). From academic papers, we still do not know exactly the skills of accountants since papers have been focusing more on the roles of accountants. (Cardoso, Souza & Almeida, 2006). Perhaps if the focus of research shifted, we could have more insight on where the academy is committing mistakes, as presented in the literature.

## 2.2 ACCOUNTING EDUCATION IN BRAZIL

As the accounting profession and the accounting professional have changed over the years due to technological advances and economic demands such as the higher demand for decision-making and group-working professionals, the academy must also adapt the new challenges to which it is faced and it has done exactly that throughout history. Boyce (2004) recalls that accounting education reform efforts have been substantially driven by professional accounting bodies. This is the case of academy adapting to changes made in the professional spectrum and not the opposite. Accounting education in Brazil has had significant changes in the last decade due to changes in the practical field. Starting with the change in Brazilian Legislation. Since 1976, the accounting profession in Brazil is modeled by Law n° 6.404. Then, in 2007, Law 11.638 was approved and altered aspects of the previous law and consequently how accountants work, now in conformity with International Accounting Standards. Such observed changes pose both opportunities and challenges for accounting education. These developments have also required expansion of knowledge and skills of

accounting professionals to meet the changing demands stemming from the new business environment (Lin et al., 2005). Before talking about the current scenario, it is important to highlight how accounting education has been composed in the country.

Brazil has had two centuries of accounting education. In 1809, one year after the Portuguese royal family arrived in the colony, a commerce school was opened (Soares, 2008). This can be considered Brazil's first "accounting" course. Almost one hundred years later, in 1902, another landmark for accounting education in Brazil was the creation of the Álvares Penteado Commerce School (Nossa, 1999). In 1945, Decree-Law n°7.988 created the Accounting and Actuarial Science course and one year later, the University of São Paulo (USP) was the first to have such course (Soares, 2008).

Shortly after, in 1951 there was legislation (Law n° 1.041) which separated Accounting from Actuarial Sciences in higher education (Soares, 2008). Since then, the profession of accounting as well as education has been on the rise since it is possible to see that throughout the years, the numbers in accounting courses and of accounting students has increased. The first master's degree course in accounting in Brazil was in 1970 at USP (Passos, 2004). As of 2016, this number is up to 27 (CAPES, 2016).

As of 2015, there are 1.274 accounting courses in Brazil and 358.452 accounting students (INEP, 2015). The number of accounting courses in 2015 is much superior as what it was in 1998 (406). In a period of less than 20 years, the number of accounting courses in Brazil doubled (INEP, 1998; INEP, 2015). The number of students has also more than tripled. In 1998, the number of accounting students was 122.427 and in 2015 it was 358.452 (INEP, 1998; INEP, 2015). Today, higher education institutions in Brazil comprise universities, institutes of technology and many private colleges. Accounting is currently being offered in 966 Higher Education Institutions throughout Brazil (INEP, 2015).

The numbers above portray that accounting has become a somewhat consolidated course in Brazil, currently the third largest in the number of courses nationwide. *Stricto sensu* post-graduation in accounting has also been on the rise. As of 2016, there are 40 programs in Brazil in 27 different higher education institutions. These 27 institutions provide 23 academic Master's degree courses, 13 Doctor's degree courses and 4 professional Master's degree courses (CAPES, 2016). It is noteworthy that of the 2.363 total Higher Education Institutions counted in 2015 by INEP, only 27 of these in 2016 provide *stricto sensu* post-graduation in accounting, consequently there is a lot of room for growth and diffusion of master's and doctorate programs.

The rapid growth in *stricto sensu* post-graduation courses may have positive effects on accounting education and research. The premise is that the more masters and doctors getting diplomas from such *stricto sensu* post-graduation courses, bigger the number of education institutions that will have these professionals to teach and to conduct research with quality. There is a clear shortage specially of PhDs in accounting. Until 2008, only USP had a doctorate program in accounting, so until today there has been less than 500 accounting doctors (including the ones who have already passed away and those who do not work with accounting education) in a country of more than 200 million people.

French and Coppage (2000) define how accounting education has evolved along with professional advances saying that when the accounting role was restricted to the provision of financial information and analysis, accounting education focused on the development and application of accounting and audit knowledge. In the current atmosphere, the acquisition of technical accounting skills is still relevant, but there is an increasing need for accountants to have business management knowledge and skills, a well-developed knowledge of information technology, and greater interpersonal skills.

There are a number of challenges facing accounting education all around the world. Some of them are common to many places and others are specific of certain places. One of the challenges found worldwide is the distance that professors have with the professional market and consequently what they teach is not based on previous work experience (Machado & Nova, 2008). More specifically, in Brazil we find that accounting education is in a process of verticalization where the growth in number of accounting courses demands a large quantity of qualified education professionals. Exponentially speaking, the growth in number of accounting courses have outnumbered the growth of accounting education professionals (CAPES, 2016; INEP, 2013). Such scenario creates a professor shortage, that is, there are not enough masters and doctors to teach in an ever-growing accounting courses number.

Another problem found in Brazil's accounting education is the evasion of students, as researched with academics from a public institution by Dias, Théophilo & Lopes (2010). Among the reasons highlighted by the latter authors are unhappiness with the course and with the future profession and lack of socio-educational assistance. Barbosa et. al. (2016) also conducted a study on the thematic of evasion and found that the difficulty of learning which reflects on unsatisfactory performance and insufficiency of study time led the evasion. One impacting finding from the study of Barbosa et. al. (2016) is that 64% of the evaded accounting students from the HEI researched belonged to the evening shift. Still according to

the study, these evening shift students are most likely to have inferior performance and less presence in the classroom.

Machado & Nova (2008) found in their research that public education institutions differ in accounting education from private ones. The authors concluded that since the aim of the public education institutions is to return to the population the investment made through taxation, they must focus on areas like the third sector, public accounting and accounting research, which are not requirements of most companies when they hire professionals. According to the authors, private institutions are more aligned with the job market since there is a direct relation between student employability and the continuity of the institution. This, however, is not true in a public institution since what guarantees its continuity is a constitutional right.

### 2.3 LEARNING STYLES

It is a consolidated fact that different people learn in different ways. Learning styles work on the premise that all may learn but though in different ways and at different levels. If we are to think of a definition of learning style, it would be that of Dunn et al. (1994) which says that learning styles defines how each learner begins to concentrate on, process and retain new and challenging information.

According to Reis et al (2012), many factors play a different role to consolidate a unique learning style. These are one's personality; the form in which one processes received information; social interaction preferences; learning environment; and personal preference in learning. It has been also found that there is an impact of culture on learning styles as documented in the literature review of Sikkema and Sauerwein (2015).

Before getting in depth in learning styles, one must know what learning is. This is important since a conception of learning captures the way in which a person views learning, in other words, what learning means to him/her (Byrne & Flood, 2004). As presented in the work of Byrne & Flood (2004) which studied learning conceptions among accounting students, there are many conceptions of learning, they are:

- a) the increase of knowledge;
- b) memorizing; acquisition of facts and procedures;
- c) abstraction of meaning;
- d) an interpretive process aimed at the understanding of reality;

e) changing as a person.

In the study of Byrne & Flood (2004) the findings display that the majority of students described learning as an external process focused on the acquisition and/or application of knowledge.

Another study surveyed accounting students and got similar results. The work of Lord & Robertson (2006) found that while some students seek understanding as an outcome of their learning, the majority perceive learning quantitatively in terms of knowledge acquisition, reproduction and application.

For this dissertation, learning will be considered as acquisition and application of knowledge, as both the studies of Byrne & Flood (2004) and Lord & Robertson (2006) converge to this understanding from the perception of accounting students.

Knowing student's learning styles is very important for professors since it influences the way they can teach (Cerqueira, 2000). It can be inferred that when a professor knows the learning styles of their students, there is an advantageous situation where the learning potential of students can be maximized. It is also preferable if the students themselves know their learning styles in order to assess their strong and weak points thus optimizing learning.

According to the work of Dunn et al. (2000), there are other classifications of learning styles, they are:

- a) Environmental preferences: sound, light, temperature, and furniture design;
- b) Emotional preferences: motivation, responsibility, conformity, persistence, need for externally imposed structure or opportunity to do things independently;
- c) Sociological preferences: authoritative persons present, variation, learning alone, in pairs or as a part of a team.
- d) Physiological preferences: perceptual strengths such as auditory, visual, tactile or kinesthetic, time-of-day energy levels, need for intake and/or mobility.

Many studies regard learning as to physiological styles, they are: auditory, visual, tactile or kinesthetic. According to the works of Beischel (2011) and Hedin (2006) as cited by Hallin (2014), auditory learners prefer hearing material and verbal instructions related to practical examples. Visual learners enjoy reading and written information and also observation, pictures, flashcards and videos. Tactile learners prefer hand-on activities and take notes when they are interested and learn best through practical sessions, case studies or computer simulation.

## 2.4 EXPERIENTIAL LEARNING THEORY

Many different theories have been raised and somehow applied to education since the 1950s. However, one that has received much attention is David A. Kolb's Experiential Learning Theory (ELT) from 1984. For Kolb (1984) learning can be seen as a continuous process grounded in experiences and opportunities to reflect upon these experiences. In brief, probably the most important aspect of ELT is that learning is considered as a process and not an outcome itself. The ELT as we know today integrates the works of scholars such as Kurt Lewin, John Dewey, Jean Piaget, among others.

ELT compiles six propositions as cited by Kolb & Kolb (2008) which are:

- a) Learning is best conceived as a process, not in terms of outcomes: the focus should be on engaging students in a process which best enhances their own learning with feedback on the effectiveness of their efforts. Students play a central role in their own learning;
- b) All learning is re-learning: the student's beliefs should be examined, tested and integrated with new, more refined ideas. Learning is a continuous process, refinement requires passing on many times through the learning cycle;
- c) Learning requires the resolution of conflicts between dialectically opposed modes of adaptation to the world: things such as conflicts, differences, and disagreement are what drive the learning process. During such process, the learner is to move back and forth between opposing positions of reflection, action, feeling and thinking;
- d) Learning is a holistic process of adaptation: learning involves the integrated functioning of the total person (thinking, feeling, perceiving and behaving);
- e) Learning results from synergetic transactions between the person and the environment: people model themselves according to the choice of actual occasions they live through;
- f) Learning is the process of creating knowledge: social knowledge is created and recreated in the personal knowledge of the learner.

The above premises of ELT are contrary to the transmission model of other learning theories. Hence, ELT is a constructivist theory. Kolb (1984) says that individuals construct knowledge through transformation of experiences into cognitive frameworks, thus causing individuals to change the way they think and behave.

In order to map the theory, Kolb (1984) developed a learning model as seen in figure 1. This model encompasses the different learning styles individuals have and how individuals grasp and transform these experiences.

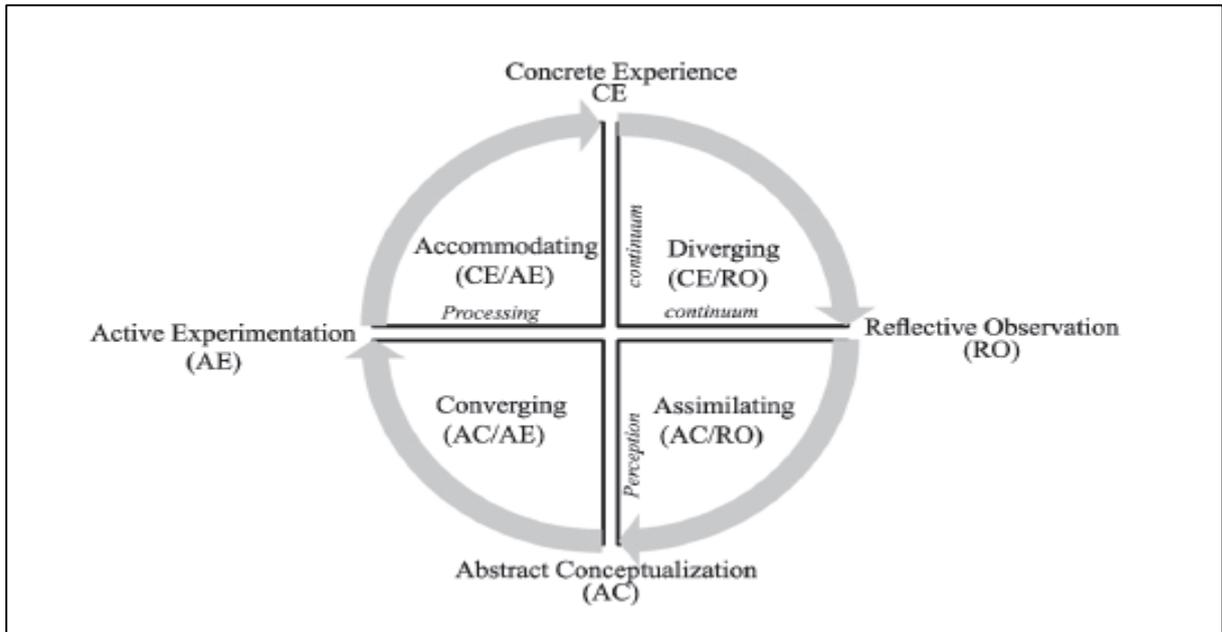


Figure 1: Kolb's ELT,

Source: Adapted from ALQahtani, D. A., & Al-Gahtani (2014).

For effective learning to occur, the learner must go through the entire cycle although one can enter the cycle at any stage according to Kolb (1984). The learning cycle as seen on figure 1 can be visually compared to a compass due to polar opposite dimensions. On the vertical axis is how we grasp or think about things, which are through concrete experience (CE) and abstract conceptualization (AC). On the horizontal axis there are also polar opposite dimensions in relation to how we transform or do things, which are reflective observation (RO) and active experimentation (AE).

Kolb (1984) defines each mode as follows:

Concrete Experience: A CE orientation focuses on being involved in experiences and dealing with immediate human situations in a personal way. It emphasizes feeling more than thinking; a concern with the uniqueness and complexity of present reality over theories and generalizations; and intuitive, "artistic" approach over a systematic, scientific approach to problems.

Reflective Observation: A RO orientation focuses on understanding the meaning of ideas and situations by carefully observing and describing them. It emphasizes reflection and understanding over action and practical application; a concern with what is true or how things happen over what will work.

Abstract Conceptualization: An AC orientation focuses on using logic, ideas, and concepts. It emphasizes thinking rather than feeling; a concern with building general theories rather than intuitively understanding unique, specific areas; a scientific more than an artistic approach to problems.

Active Experimentation: An AE orientation focuses on actively influencing people and changing situations. It emphasizes practical applications as distinct from reflective understanding; a pragmatic concern with what works rather than with what is absolute truth; an emphasis on doing, more than observing.

Kolb (1993) also highlights key aspects learners encounter at each stage of the cycle and because of this, the stages presented in the following paragraphs do not follow any specific order.

At the CE stage, learning occurs through specific experiences, relating to other people and through being sensitive to feelings and people (Kolb, 1993). Baker, Simon and Bazeli (1987) complement that in this stage, the purpose is to present students with samples of objects, artifacts, behavior processes, or phenomena found in practice. The CE phase also encompasses the ability to involve oneself fully, openly and without bias in new experiences (Sutherland and Wolcott, 2002).

In the AE stage, individuals learn showing the ability to get things done, taking risks and influencing people and events through action (Kolb, 1993). In this stage, there is the application of what has been learned in relation to the practical problems as they would be encountered by practitioners, in other words, it is the synthesis part of the learning cycle (Baker, Simon and Bazeli, 1987). This requires use of theories to make decisions and solve problems (Sutherland and Wolcott, 2002).

In the stage of AC, learning occurs through logically analyzing ideas, systematic planning and action on an intellectual understanding of the situation (Kolb, 1993). This stage is where the student is required to play a more active role in the learning process and it is usually done through homework problems or cases. It is recommended that a laboratory environment be created so the learner can have discussions with others (Baker, Simon and Bazeli, 1987). Sutherland and Wolcott (2002) complement that this is where the ability to create concepts that integrate observations into logically sound theories come in hand.

Lastly, in the RO stage, learning is through carefully observing before making judgments, viewing issues from different perspective and looking for the meaning of things (Kolb, 1993). Baker, Simon and Bazeli (1987) cite that after students have observed concepts, these are proved deductively, expanded and added to related concepts and generalizations.

The RO phase is also home to the ability in which one observes and reflects on experiences from a variety of perspectives (Sutherland and Wolcott, 2002).

Going through the whole cycle, the learner will feel, watch, think and do. According to the ELT, the learner must touch all bases (CE, AC, RO, and AE) in a process in response to the learning situation and as well as to what is being learned. Kolb and Kolb (2008, pg. 5) report that in the learning cycle:

[...] the immediate or concrete experiences are the basis for observations and reflections. These reflections are assimilated and distilled into abstract concepts from which new implications for action can be drawn. These implications can be actively tested and serve as guides in creating new experiences.

According to McCarthy (2010), for effective learning to occur, the learner must continually choose which set of learning abilities to use in a specific learning situation since the cycle is composed of different stages and each one of these stages can be used at any time for a specific learning occasion. Kolb & Kolb (2008) complement that learning involves a creative tension among the four learning modes that is responsive to contextual demands. Moreover, the position of the learner is determined by a combination of individual disposition and characteristics of the learning environment (Kolb & Kolb, 2008).

Kolb's work has been regarded as of great importance since it shed light on learning preferences and indicates that there are different approaches to different learning strategies. In the following section, a decisive part of Kolb's experiential learning theory will be presented: learning styles.

## 2.5 KOLB'S LEARNING STYLES

Perhaps one of the most used learning styles model in academia has been the one developed by the Kolbs. This model takes into consideration that students who learn effectively will go through all four stages of the model at different times in the learning process and can move back and forth through stages, depending on what is being taught and the method which is being used. McCarthy (2010) depicts that learners will generally have a preference for a specific learning style and as the learning process develops, their preference might shift.

The model assumes that there are two continuums or dimensions – perceiving, the extent to which an individual emphasizes abstractness over concreteness (AC-CE continuum), and processing that is the extent to which an individual emphasizes action over reflection

(AE-RO continuum). The learning style of an individual represents a combination of the two independent dimensions (Manolis et. al., 2013). From the model, four types of learners emerge, they are: divergers, assimilators, convergers and accomodators.

The diverging learning style is the one of individuals who learn (perceive learning) by way of concrete experience and process the learning through reflective observation. Persons of this learning style experience a situation and then later look at the situation through many perspectives, learning from each of them and are imaginative problem solvers who prefer to feel and watch (Dimuro & Terry, 2007). These students tend to enjoy tests that include unfamiliar questions and synthesize course content (Dimuro & Terry, 2007). Felder (1996) complements that these learners are interested in knowing why it is important for them to learn the course material and how it relates to their future careers.

The assimilator learning style is possessed by those who learn by way of abstract conceptualization and process information through reflective observation. Persons of this learning style prefer individual reflection to class discussions. In individual problem solving, assimilators are less comfortable with identifying practical uses for theories and concepts. In preparing for tests, assimilators like detailed information about the scope and dislike surprises (Dimuro & Terry, 2007). Kolb & Kolb (2008) find that people with this learning style are best at understanding a wide range of information and putting into a more concise, logical form. These individuals are more interested in ideas and abstract concepts. In informal learning situations, assimilators prefer readings, lectures, exploring analytical models and having time to think things through; these type of learners are important in science careers (Kolb & Kolb, 2008).

The converging learning style is the one possessed by individuals who learn through abstract conceptualization and process it through Active Experimentation. According to O'Leary and Stewart (2013) the greatest strength of convergers is in the practical application of ideas to solve problems and make decisions; these learners also use hypothetical deductive reasoning to focus on specific problems and perform best in situations where there is one correct answer. According to Kolb & Kolb (2008) persons with this learning style are best at finding practical uses for ideas and theories these learners prefer to deal with technical tasks and problems rather than with social and interpersonal issues. Convergers are particularly important for effectiveness of technology careers such as engineering and accounting (Kolb & Kolb, 2008).

The accommodating learning style is the one possessed by individuals who learn through Concrete Experience and process it through Active Experimentation. According to

Dimuro & Terry (2007), these individuals have their strength in doing things, conducting plans and taking risks to excel in new situations. Kolb & Kolb (2008) say that these individuals prize “hands-on” experience and tend to act on “gut” feelings rather than on logical analysis. Moreover, these learners rely more heavily on people for information than on their own technical analysis (Kolb & Kolb, 2008). This learning style is effective for action-oriented careers such as marketing or sales (Kolb & Kolb, 2008).

Kolb & Kolb (2005b) also cite patterns of behavior associated with the four basic learning styles. These patterns occur by transaction between and the environment at five different levels: personality, educational specialization, professional career, current job role and adaptive competencies. These behavior and learning patterns are disposed in Table 2.

*Table 2: Relationship Between Learning Styles and Five Levels of Behavior*

<b>Behavior Level</b>	<b>Diverging</b>	<b>Assimilating</b>	<b>Converging</b>	<b>Accommodating</b>
Personality types	Introverted Feeling	Introverted Intuition	Extraverted Thinking	Extraverted Sensation
Educational Specialization	Arts, English, History, Psychology	Mathematics, Physical Science	Engineering, Medicine	Education, Communication, Nursing
Professional Career	Social Service, Arts	Sciences, Research, Information	Engineering, Medicine, Technology	Sales, Social Service, Education
Current Jobs	Personal Jobs	Information jobs	Technical Jobs	Executive jobs
Adaptive Competencies	Valuing Skills	Thinking skills	Decision skills	Action Skills

Source: Kolb & Kolb, 2005b

In the next section, the instrument (Learning Style Inventory) developed by Kolb to map the learning styles depicted in this section will be presented.

## 2.6 LEARNING STYLE INVENTORY

The Learning Style Inventory (also known as LSI or KLSI) is an instrument that was created by David Kolb as an educational tool to enhance an individual’s understanding of the learning process through experience and their individual approach to learning (McCarthy, 2010). The LSI can be used as a starting point for exploring how an individual best learns.

McCarthy (2010) highlights that the LSI should not be used to predict behavior for job placement or other assignments since an individual’s learning style is not a fixed trait. The LSI was not meant to be a predicative psychological test like IQ, GRE or GMAT but a self-

assessment exercise and a means for construct validation of ELT (Iloff, 1994). Kolb & Kolb (2008) complement saying that the LSI measures an individual's preference for a particular region of the learning space, or their "home region". The format of the LSI is designed such that the individual responds as they would respond to a learning situation (McCarthy, 2010).

The original LSI was a simple nine-item self-description questionnaire. In this version, respondents were asked to rank order four words in a way which best represented or described what matched their learning style (Manolis et al., 2013). Since then, the instrument has been updated in a number of occasions. The evolution of the instrument can be seen on Table 3.

*Table 3: Learning Style Inventory versions*

<b>Ver</b>	<b>Year</b>	<b>Description</b>
1	1969	Developed as an experiential exercise designed to help learners understand the process of experiential learning and their unique style of learning from experience. "The term learning style was coined to describe these individual differences in how people learn" (Kolb & Kolb, 2005, p.9).  The final version had 9 items that was further refined to include six scored items. Validity was established in a number of fields. The results of this research provided empirical support for the most complete and systematic statement of ELT. Several studies identified psychometric weaknesses of the instrument, particularly low internal consistency reliability and test-retest reliability.
2	1985	Six new items were selected to increase internal reliability (alpha) and added to each scale making 12 scored items on each scale. Wording on all items was simplified to a 7th grade reading level and the format was changed to include sentence stems e.g., "When I learn...". A new more diverse normative group of 1446 men and women was created.
2a	1993	In 1991 Veres, Sims, and Locklear published a reliability study of a randomized version of the LSI 2 that showed a small decrease in internal reliability but a dramatic increase in test-retest reliability with the random scoring format. Version 2a was published as a research version to study this format.  Research with the LSI 2 continued to establish validity for the instrument. While internal reliability remained high in independent studies, test-retest reliability remained low.
3	1999	The randomized format was adopted in a revised self-scoring and interpretation booklet that includes simplified scoring. LSI 3 continued to use the LSI 2 normative reference group.
3.1	2005	LSI 3.1 modified LSI 3 to include new normative data. This revision includes new norms that are based on a larger, more diverse and representative sample of 6,977 LSI users. Results from seven different studies of the LSI 3.1 suggest that the scales show good internal consistency reliability across a number of different populations. In several studies, test-retest correlation coefficients range from moderate to excellent.

Source: Kolb & Kolb, 2005b apud McCarthy, 2010

The LSI scales measure six variables, being four primary scores that measure an individual's relative emphasis on the four learning orientations (CE, RO, AC and AE) and two combination scores measuring one's preference for abstractness (AC-CE) over concreteness (AE-RO) (Kolb & Kolb, 2005b).

LSI version 3.1 (the one used in this research) is assembled in a way in which the user ranks his learning preferences based on a choice among four words for twelve items. According to Koob & Funk (2002) the activity of ranking the items in each row (also known

as forced scaling) works in the way of the learning process itself: forcing participants to choose between opposing abilities.

Koob & Funk (2002) cite that researchers who have applied the LSI have found the LSI to be particularly useful in heralding an appreciation for diversity, identifying useful interventions, and promoting an atmosphere of greater appreciation for differences among the learners.

## 2.7 LEARNING STYLES IN ACCOUNTING

Many different studies in the accounting area have used the LSI. Kolb & Kolb (2005) cite that in the period of 1971-1999 alone, 22 studies were conducted and published. The majority of studies have found that accountants tend to be convergers (McKee, Mock & Ruud, 1992; Baker, Simon and Bazeli, 1986). Kolb & Kolb (2008) themselves say accountants are in majority convergers.

Other studies have gotten different results from convergers when mapping accounting students learning styles. Nogueira & Espejo (2010) found in their research (with Brazilian students) that there was a predominance of the assimilating learning style among the researched students and also that the statistical tests showed no impact of different learning styles on performance in disciplines of Introductory and Managerial Accounting.

Valente, Abib and Kusnik (2007) conducted research aiming to compare students and professor learning styles in a public Brazilian university to see if there was a match. The results indicated that there is a discrepancy between the students' preferred way of learning and those of the professors, in other words, professors tended to teach through concepts and fundamentals and the students preferred to learn by having experimental learning and self-discovery encouraged. The results also indicated a predominance of the accommodating learning style among students.

Geiger (1992) found that among 157 respondents who were part in his survey (American institution), 68 were assimilators, 19 divergers, 42 convergers and 28 were accommodators. It was also found that learning style was found to be significantly related to performance and that the assimilators had outperformed all other types of learners.

Leite Filho et al. (2008) researched the relation of learning styles and academic performance of students belonging to a Brazilian public institution. Results indicate the predominance of divergers in 55% of students who went to class in the morning and in 76%

of students who had classes in the evening shift. It was verified that those students with an average grade of A, in majority, were divergers. No indications of relations between academic performance and learning styles were found in a more general level.

Auyeung & Sands (1996) performed a cross-cultural study of accounting students learning styles. The authors compared the learning styles of students in Australia, Hong Kong and Taiwan. Results showed that the Australian students were predominantly accommodators and the students from Honk Kong and Taiwan proved to be more of assimilators. The authors concluded that the Australian students represented more of the western individualistic culture and thus were more concrete and active while the students from Honk Kong and Taiwan better portrayed the Chinese collectivistic culture, being more abstract and reflective.

Baker, Simon and Bazeli (1987) conducted a research with first year accounting students (in an American institution) and were surprised with the diversity found in the learning styles of the sample students. Results indicated that 44% of the students were assimilators, 31% were convergers, 13% were divergers and 13% accommodators. One interesting point cited by the authors is that a class with a large diversity of learning styles places an unusual challenge for the instructor since reaching all students will not be possible at the same time.

Since learning styles in accounting have been mapped in different styles and no study has correlated learning styles and internship performance, this study sought to find if there is an impact on accounting internship performance caused by different learning styles, which contributed to the creation of the following hypothesis:

H1: Accounting internship performance is impacted by learning styles.

Another relevant aspect to analyze regarding learning styles is if there is any relation to internship modality choice and learning style which led to the following hypothesis:

H2: Students of mandatory internships have different predominant learning styles of their non-mandatory counterparts.

## 2.8 SUPERVISED INTERNSHIP

The supervised internship serves as an important tool in professional development. In the halls of universities, it is heard that the internships bridge the gap between theory and practice. This is also a consensus among many authors such as Nevett (1985); Beard, (1998) and Mihail (2006).

Internships in Brazil are federally regulated by an Internship Act (Law no. 11.788, September 25, 2008). Unlike other countries such as the USA, internship programs are legally formalized in many levels. Federally, according to the first article of Internship act, the internship can be classified as an educative act developed at the workplace, which aims to prepare students for productive work.

Aside from the federal regulation, there is also regulation from the Brazilian National Education Council, which is subservient of the Brazilian High Education Chamber. According to the seventh article of Resolution n°10 promoted by the Brazilian National Education Council in December 16<sup>th</sup>, 2004,

The supervised internship is a curricular component aimed at the consolidation of desired professional performances, inherent to the profile of the graduate, making the responsibility of the institution and their Higher Academic Boards to approve the corresponding regulation, with its different modes of operationalization.

Aside from the federal bureaucracy, there is state regulation and also regulation from within the education institutions themselves. Each institution can establish rules regarding internships. In the case of the accounting department at UEM, it is stipulated in the pedagogical project of the accounting course that each student must go through a mandatory internship of at least 432 hours. Such programs can happen from the 3<sup>rd</sup> semester to the last semester. Students cannot start internships from the first day they are enrolled in university since they need basic theoretical knowledge that is taught in the first two semesters.

It can be said that the internship is a necessary practice for the academic formation, a requirement for student's capacitation, thus making it possible the practical applications of knowledge gained in the academy (Fundação Brasileira de Contabilidade, 2009).

Studies such as of Maelah et al. (2014) have found that students benefit with the learning of technical and soft skills required by marketplace. Practical work experiences come in handy when students consider that their career is the most important dimension (Bakar, et al. 2011). Moreover, students feel as if having the experience is a determinant factor in their future careers (Jones & Abraham, 2007).

Internships provide an experience of "learning by doing" in a real business situation. In the doing of the internships, these students are engaged in real life professional situations in which examples are solving problems and interacting with other professionals alike (Alpert, Heaney & Kuhn, 2009). This is very unlikely to happen inside classrooms in which most of content is taught by lectures due the fact that there are many accounts of students complaining that classes are too theoretical and lack professional insights. Goodman (1982) reported that

many trainees are offered and eventually accept full-time positions at the firms in which they went through internships. Aside from better future professional positioning, students with internship experience perform significantly better than those without internship experience in the semester following internships (English and Koeppen, 1993).

Among other benefits provided by internships to students, it is valid to highlight the exposure to the technology that is unseen in the classroom environment (Bakar et al., 2011). It is certain that the majority of accounting courses have an accounting information system discipline but it is at the worksite where the hands on experience happens. Another benefit according to Bakar et al. (2011) is the self-confidence developed during the program once students identify skills, abilities and talents.

Students are not the only ones who benefit from internships. For businesses, internships represent a valuable hiring tool. When firms hire trainees, they are most likely reducing costs (Maslen, 1996) due to lower wages in comparison to hiring graduated professionals, in other words, there is a no commitment training before hiring. Companies also have the opportunity to teach students and once the internship is over, they can hire trainees to work full time, in such cases, the internship is a cost effective way to train future workers. For the business, there is also an opportunity of integration with the education institution since the professionals at the firms may have contact with professors.

Companies may also benefit in other ways. Gibson (2001) found that the presence of a faculty intern may impact the company's networks and other elements of firm culture. With the arrival of the faculty intern, employees may have to perform better and think about processes more precisely in order to teach or explain how a determined process works. Such processes provide the firm's staff with a deeper understanding of workplace content (Herron & Morozzo, 2008). In certain occasions, faculty interns bring new energy and ideas to the work place (Bakar et al., 2011) thus motivating other professionals. For businesses, there is according to NACE (2005) *apud* Beard (2007) an indication that when a firm hires students with internship experiences, this can increase the efficiency of the organization. So even for firms who have not received trainees, they may benefit from hiring a worker who has internship experience since professionals who were once interns may have academically outperformed those who never were (Hauck et al, 2000) and this could potentially lead to better work performance as well.

Education institutions also benefit from internship programs. According to Gibson (2001), faculty members benefit from internships through the obtaining of guest lecturers (which are from the companies they send trainees to); the connection with local firms

enhances student respect and the students that go through internships are more effective after such programs. Herron & Morozzo (2008) highlight that faculty may also benefit from using the firm's database for research and to use the company as others means to which learning may apply. As an example, there are cases in which companies become host of case studies. Internships may also affect curriculum and teaching since up-to-date information and real world practical examples to share with students are plentiful if the professors are involved with the programs. Similarly, Beard (2007) highlights that accounting programs benefit from enhanced placement opportunities for their graduates, enhanced learning, industry support and feedback of their programs. Other studies such as Herron & Morozzo (2008) and Gibson, (2001) confirm such insights. Bakar et al., (2011) also highlight that an internship program may also strengthen the student's ties to the university when college facilitates the experience.

Like advantages, there are also drawbacks regarding internships for the many agents involved in the programs. Many of the drawbacks that will be presented can be attributed to lack of careful planning and supervision (Hanson, 1984). For universities, some shortcomings may be the lack of supervision of what is actually happening because activities happen off-campus, beyond the direct control of faculty (Alm, 1996). For students, internships are time and energy consuming, thus requiring great physical and mental effort. Another disadvantage is that some students do not engage in meaningful work and do not feel as if they are a part of the team (Thiel and Hartley, 1997). For companies, some negative effects of internships are disruption of normal work environment and cultural shock (Anthony, 1981).

Since internships are time and energy consuming and have employment and skill acquirement potential for students and UEM has mandatory and non-mandatory internship, the following hypothesis emerge:

H3: Non-mandatory accounting internship performance is different than mandatory accounting internship performance.

The results from such comparisons may be analyzed and lead to changes to implement best practice strategies.

Thus, with all the hypothesis set, the next paragraph brings in detail all the methodological procedures taken to reach the research objective.

### 3 METHODOLOGY

Seeking to answer the proposed research question, in this section it will be explained how the research was conducted. Details on the population and sample size, research instruments, theoretical constructs, statistical procedures among other relevant methodological elements will be presented in this section.

#### 3.1 RESEARCH TYPE

This research is of descriptive nature. According to Bhattacharjee (2012), this type of research is best aimed at making careful observations and detailed documentation of a phenomenon of interest. Kothari (2004) complements that descriptive studies have as main purpose the description of the state of affairs at present and to accurately portray the characteristics of an individual, situation or group, or in other words, to map the terrain of a specific phenomenon. Since the gathering of information that classify individuals by learning styles was done and other variables were mapped and further analyzed, it justifies the design of this study as descriptive. This study has an approach of positivist nature. Studies that use the positivist approach aim to find characteristics of a determined population or phenomenon, establishing relationships among variables and treating data with statistical techniques (Martins, 1997).

Data collection is administered by survey, more specifically with the aid of two distinct research instruments (questionnaires). The first questionnaire to be administered is the Kolb Learning Style Inventory (KLSI) v. 3.1. The KLSI v. 3.1 is managed by HayGroup®, which possesses its rights of use. To obtain the questionnaire, contact was made with HayGroup® via email to request permission to use their instrument for academic purposes. They granted permission. Due to contractual aspects established by HayGroup® and agreed by the authors of this work in a conditional use agreement document, the questionnaire cannot be modified and published within this paper, this last condition being necessary to preserve their rights over the product. The original Portuguese translated version was used as instrument in this research.

This instrument is consisted of three pages. The first one is the questionnaire per se. The second and third pages are used for graphic mapping of one's learning style according to

the answers given in the first page. With the questionnaires in hand, it was applied to 247 students. This quantity of students who responded the questionnaire was defined by accessibility; all students who have undergone internships were tried to be contacted in order to answer the questionnaire, however some of them were absent the school day when the questionnaire was applied. The students themselves answered this questionnaire. The graphic mapping of students by learning styles was also done by themselves once the answering of the questionnaire was over. Since this questionnaire has been used, improved and validated throughout the last decades, it was not necessary to carry on a pretest. To eliminate possible biases, initially, students who before the internship were or had been already working in the internship host company were supposed to be excluded from the sample, in this way we felt that it is possible to capture the essence of the performance of new internship experiences and not a continuation of work that was already being done. However, due to number of the sample, this was not possible.

In terms of the construct for the Learning Style Inventory, the details on the building and how the questionnaire measures the learning styles by means of the scaling cannot be disclosed.

The second part of data collection was done through the use of another questionnaire but unlike in the first instrument, the respondents were the host company supervisors. In order to develop the questionnaire, the work of Beard (2007) was consulted. In the paper of the latter, there is an internship supervisor evaluation sheet. This sheet was adapted to fit in other variables of interest of this dissertation, for example, the remaining core competencies of the AICPA which were not covered by the original instrument. Before applying the instrument, it was necessary to translate it into Portuguese. The technique of back translating was used. For such translation process to occur, in the first step I translated the questionnaire from English to Portuguese, thus creating a second manuscript. The second step was to have two other researchers (one with degree in Linguistics and another with multiple degrees in business administration) to translate the previously translated questionnaire back into English, thus creating a third and fourth manuscript. Finally, the third and fourth manuscripts were compared to the original instrument to check for similarities and differences. Some adjustments were made seeking better adequacy. Before the final instrument was applied, it was shown to a professor who for many years had been the coordinator of internship programs at UEM so she could also contribute with relevant information which was missing. Finally a pretest was done with accountants who had been internship supervisors in order to eliminate problems of timing, ambiguity and repetitiveness.

The construction of the questionnaire for measuring performance was based mainly on the AICPA Core Competencies as can be seen on Table 4.

Table 4: Performance assessment construct

Answered by Student	Measure	Source
Overall Performance assessment	Select the best alternative	Author (2017)
Excelent		
Very Good		
Average		
Below average		
Unsatisfactory		
Answered by Supervisor	Measure	Source
Q1. Enthusiasm at work;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q2. Ability to learn;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q3. Initiative;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q4. Quality of the work done;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q5. Trustworthiness;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q6. Interpersonal relationship;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q7. Professional demeanor;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q8. Productivity;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q9. Decision-making;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q10. Attendance;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q11. Punctuality;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q12. Work management;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q13. Use of technology and systems;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q14. Strategic and critical reasoning;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q15. Industry/Sector Analysis;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q16. Legal/Regulatory Perspective;	1 (minimum) - 10 (maximum)	AICPA Core Competencies - Beard (2007)
Q17. Following of company guidelines;	1 (minimum) - 10 (maximum)	Author (2017)
Q18.Overall Performance assessment:	Select the best alternative	Author (2017)
Excelent		
Very Good		
Average		
Below average		
Unsatisfactory		

Source: Developed by the Author (2017)

Data analysis is of quantitative nature. Quantitative techniques are most often used to collect, analyze and summarize data. Neville (2007) affirms that a quantitative methodology emphasizes collecting and analyzing numerical data and thus presenting highly detailed and structured results. Statistical treatment was done using the software named SAS and R.

Since this study approaches learning styles and internship performance of accounting students of UEM, as variables we have the following:

- Dependent (y): Internship performance, which is indicated by supervisor grading.
- Independent (x): Student Learning Styles, which were obtained by the application of the KLSI v. 3.1.

With the variables in mind, this study sought to observe as its main objective if the performance is impacted or not by the student's learning style. Initially, it was intended to have a mean score of supervisor and student self-assessment on performance, however, since there was a very slim difference between the answers of the students and of the supervisors regarding performance, the answers of the supervisors were used to assess performance.

In a secondary plan, it is also aim of this study to compare the performance of mandatory internships and non-mandatory internships given the premise that a free initiative system naturally inclines only students who have interest in value creating internship programs prospect and select a company which best proposes an internship plan that best suits them.

Lastly, this research tried to confirm if the predominant learning style of students who engage in mandatory and non-mandatory internship programs are different, this based on the premise that a specific profile would seek optional internships as there are already mandatory ones.

In order to answer the first and last assumptions (performance and learning style and performance along internship modalities, H1 and H3) the mean score technique was used, in which scores  $\mathbf{a} = (a_1, a_2, \dots, a_r)$  are attributed for the level of the response variable, thus making a mean score  $f_i$  for each level of the covariate, enabling examination in changes of mean score (Stokes; Davis; Koch, 2000). This is done by the use of the following formula:

Whereby:

$$\bar{f}_i = \sum_{j=1}^r \frac{a_j n_{ij}}{n_{i+}} \quad i = 1, \dots, s.$$

- $a_j$  is the score of the  $j$ -th treatment;
- $n_{ij}$  is the observation in the category  $i$  of the covariable ( $X$ ) e category  $j$  of the answer variable ( $Y$ );
- $n_{i+}$  marginal total of the  $i$ -th line.

In statistical terms, such hypothesis can be expressed by:

$$\left\{ \begin{array}{l} H_0 : \bar{f}_1 = \dots = \bar{f}_s \text{ (there are no changes in mean score)} \\ H_1 : \bar{f}_i \neq \bar{f}_j \text{ (at least one mean score differs from the rest)} \end{array} \right.$$

About the null hypothesis  $H_0$  Stokes et. al. (2000) say that the hope and variance of  $\bar{f}_i$  are given respectively by:

$$\begin{aligned} \mathbb{E} \left[ \bar{f}_i \mid H_0 \right] &= \sum_{j=1}^r a_j \frac{n_{i+j}}{n} = \mu_{\mathbf{a}}, \\ \mathbb{V} \left[ \bar{f}_i \mid H_0 \right] &= \frac{n - n_{i+}}{n_{i+} (n - 1)} \sum_{j=1}^r (a_j - \mu_{\mathbf{a}})^2 \left( \frac{n_{i+j}}{n} \right) = \frac{(n - n_{i+})}{n_{i+} (n - 1)} v_{\mathbf{a}}. \end{aligned}$$

Whereby  $\mu_{\mathbf{a}}$  and  $v_{\mathbf{a}}$  are respectively, the mean and the population variance of  $\mathbf{a}$  score. The  $\bar{f}_i$  quantity has an approximate normal distribution by the central limit theorem. Thus, the mean score statistic is defined as:

$$Q_S = \frac{n - 1}{n} \frac{\sum_{i=1}^s n_{i+} (\bar{f}_i - \mu_{\mathbf{a}})^2}{v_{\mathbf{a}}}$$

In such formula,  $Q_S$  has a chi-square approximated distribution with  $(s - 1)$  degrees of freedom.

The null hypothesis is rejected, with a significance level of  $\alpha\%$ , if  $Q_S > X^2(\alpha, s-1)$ , in which  $X^2(\alpha, s-1)$  is the percentile  $100 \times \alpha$  of the chi-square distribution with  $(s - 1)$  degrees of freedom.

To test the second premise (internship modality and learning style, H2) the chi-square statistic was used. More specifically, the chi-square technique was used as a homogeneity test (Bussab; Morettin, 2010).

It is important to note that this statistical technique has requirements, which are:

- Measurement level in at least a nominal scale;

- Expected frequencies above 5;

To better comprehend, consider the following notation:

- $i$  indicates the line number;
- $j$  indicates the row number
- $O_{ij}$  indicates the observed values of the  $i$ -th line and  $j$ -th row;

In statistical terms, the hypotheses are given by:

$$\left\{ \begin{array}{l} H_0 : P_1 = P_2 \text{ (The probability distribution of the lines is the same)} \\ H_1 : P_1 \neq P_2 \text{ (The probability distribution of the lines is the different).} \end{array} \right.$$

According to Stokes et. al. (2000) the chi-square statistic is given by:

$$Q_p = \sum_{i=1}^s \sum_{j=1}^r \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

Whereby:

- $s$  is the number of lines
- $r$  is the number of rows

Supposing  $H_0$  to be true, we note that the  $Q_p$  statistic has a chi-square distribution with  $(s - 1)(r - 1)$  degrees of freedom. The null hypothesis is rejected, to the level of significance of  $\alpha$ , if  $Q_p > X^2(\alpha, (s-1)(r-1))$ , in which  $X^2(\alpha, (s-1)(r-1))$  is the percentile  $100 \times \alpha$  of the chi-square distribution with  $(s - 1)(r - 1)$  degrees of freedom.

After the description of the methodological procedures, the population and sample will be described in the next section.

### 3.2 POPULATION AND SAMPLE

A population can be described as all people or items that can be considered unit of analysis with the characteristics that researchers aim to study (Bhattacharjee, 2012). The population of this study consists of all students who were enrolled in Accounting at UEM in the year of 2016. This number is of 533 students. These students are scattered in two shifts which are morning and evening in two different campus sites. The course at UEM has 4 years of duration. In the morning, there is only one class for each year whereas in the evening shift there are two classes for each year. It's important to note that the research instruments were

designed to be responded by all the population, however, not all of the students were present the day which the instruments were applied. The questionnaire was applied to 247 students. Of the 247 respondents, 147 are female and 100 are male. The average age of the accounting students at UEM is 22 years old.

Out of these 247 students, 159 had not done or were still taking internships, consequently, were excluded from the sample. Of the remaining 88 students, attempted contact was tried to all of their supervisors, however, only 35 returned contact. Thus, 35 is the number of the final sample (students and their respective supervisors) that answered the questionnaires. Many are the reasons why this number is not higher: some firms no longer exist; supervisors no longer work the firms to which they belonged during the internships; supervisors were not available to answer the questionnaires after multiple tentatives; firms have changed their phone numbers from those of the contracts and their new number was not found anywhere. Of the 35 respondents, all of them are from the campus of Maringá.

## 4 ANALYSIS AND INTERPRETATION OF THE RESULTS

### 4.1 UEM'S ACCOUNTING COURSE

The accounting course at UEM has been active since it was created in 1972, being created only a couple of years after the opening of the university itself. In 1986, an extension of the course was created in the nearby city of Cianorte. Currently, UEM offers per year 38 chairs for new students for the accounting course in Cianorte and other 76 chairs for accounting in the central campus of Maringá. Since UEM is a public University, admission is done through a three-divisional selection exam which tests the student's abilities regarding Portuguese, mathematics, physics, biology, chemistry, philosophy, sociology, arts, history and a foreign language. For the year of 2016, there was an average of 6,2 people competing for each chair to study accounting in the morning and 9,7 people to study at night. In the campus of Cianorte, the number is of 9,2 people competing for one chair.

It is stated in the pedagogical project of the course that all students must go through internship programs, which must be of at least 432 hours of duration. Students who are coursing the third to the last semester can take internships. The reason that first and second semester students cannot take part in internships programs is that it is assumed that first they must have basic knowledge regarding accounting, which is acquired in the first year of studies. The students themselves must search for a host company, as the institution does not offer a computer lab for "virtual internships". There are external organizations that help students find internships.

Students must have a professor as their advisors. According to Resolution n°172/2006-CEP, the role of the advisor is to know which activities the students will be handling, develop an activity plan, help the student in the development of activities, and keep the internship coordinator updated on the development of the program.

An internship contract must be formalized between the student and the company (represented by an on-site supervisor) at which the internship program will take place. This contract has all details regarding the internship and must be signed by the student, an on-site supervisor and the student's advisor. Students in internship programs do not necessarily receive wages for their work, as there are paid and non-paid internships. UEM also hires a life

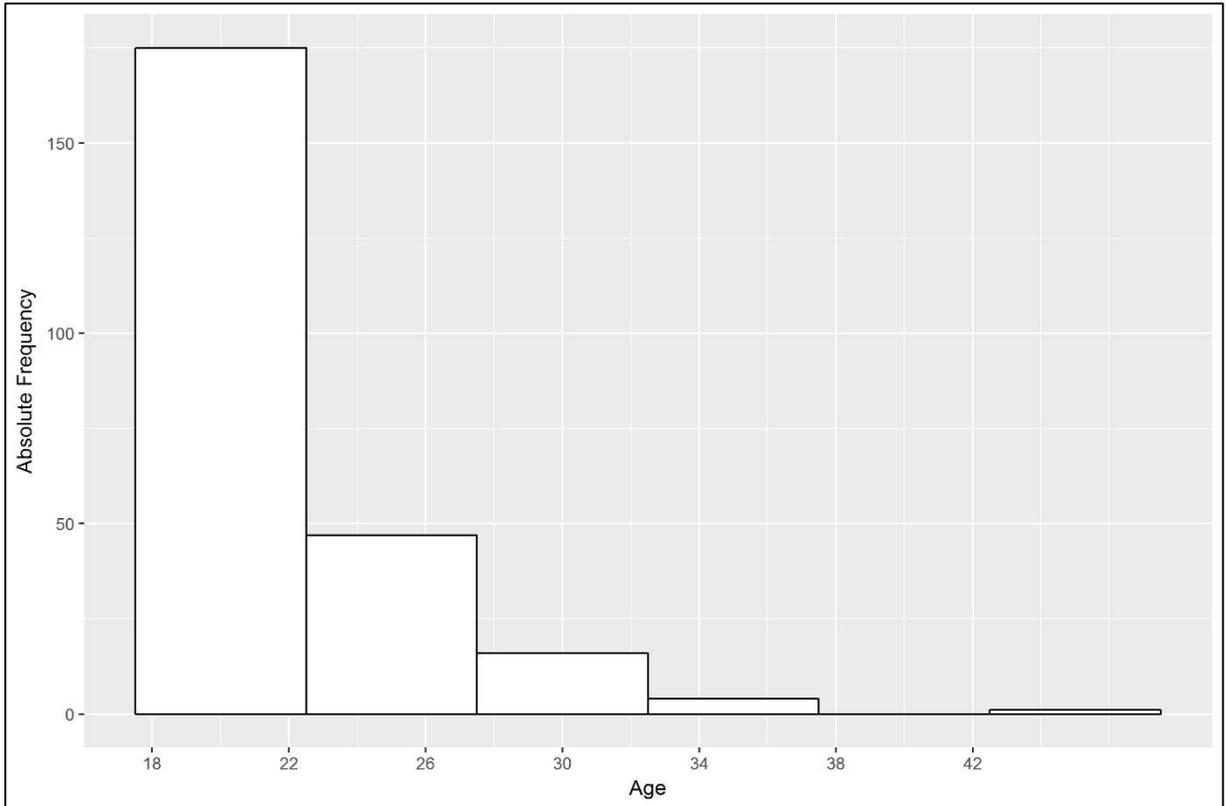
insurance policy for the student in case an accident happens in the development of the internship activities.

Once the internship is over, students must present a final report to a board of professors. This board of professors is composed of the advisor and two guest professors. After the presentation is over, professors ask questions about the internships and the students solve doubts. A grade is attributed to the student based on the presentation done. This same board, without the presence of the on-site supervisor determines if the student is approved or failed in the internship, many times solely based on the student's presentation skills of the final report. The person who could best assess the student which is the company supervisor is not invited for the presentation.

In this system there are several problems. Due to its mandatory nature, some students who work in different areas as those of accounting nature must leave their jobs (in which some are well paid) and start an internship program often without any pay at all. This is normally more common among students in the last two semesters, who already had time to establish themselves professionally. To worsen the scenario, even students who already work with an accounting role in companies must resign and formalize an internship contract for at least 432 hours, thus harming incomes of students. It would be prudent if students who already work with accounting could be dismissed from mandatory internships.

## 4.2 DESCRIPTIVE ANALYSIS

First, the descriptive statistics will be presented regarding all of the 247 observations. The vast majority of students is under 23 years of age. Only two students who responded the questionnaire are over 35 years of age.



*Figure 2:* Age histogram of the 247 observations

Source: developed by the author (2017)

There is also a predominance of female students (60%) among the respondents. This complies with a study made by the Conselho Federal de Contabilidade (Brazilian Accounting Council) (2016) that has shown that accounting has become a somewhat feminine dominated course.

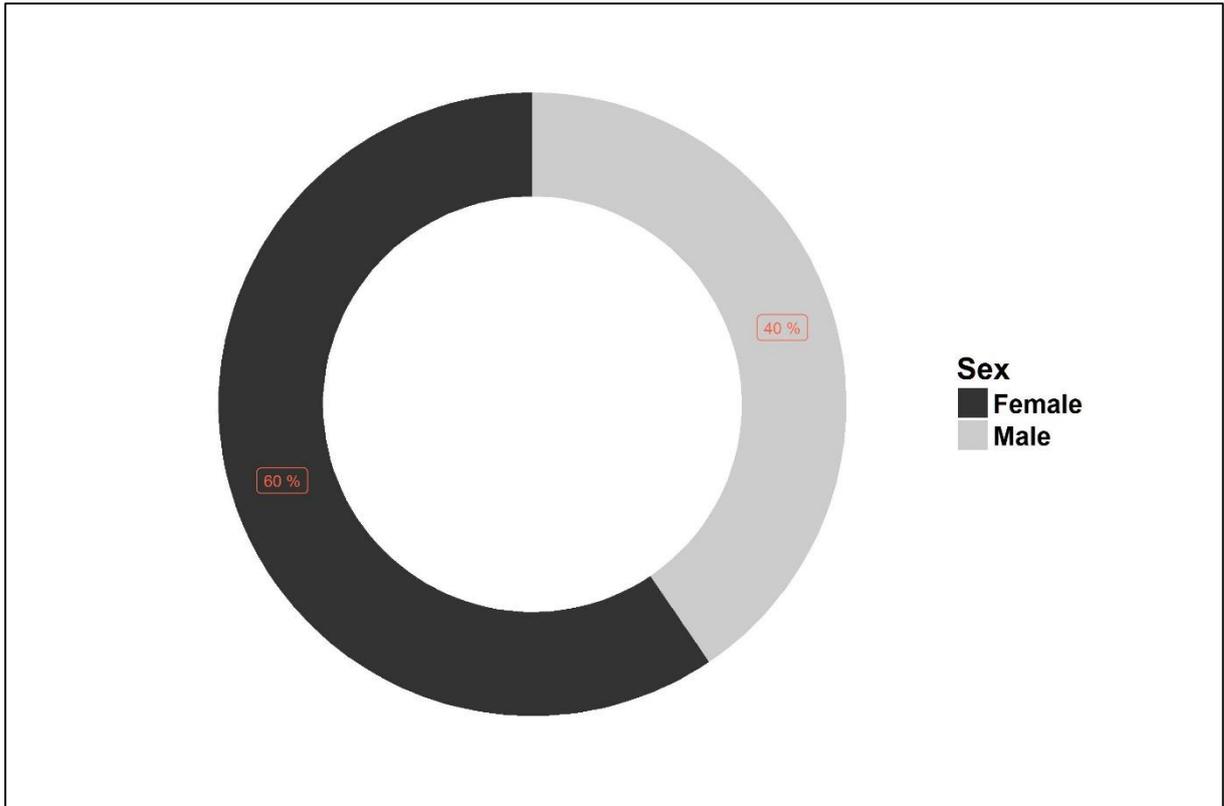


Figure 3: Sex distribution

Source: developed by the author (2017)

Regarding the learning styles of the 247 responses, the majority of students are identified as Assimilators (111). The second most popular learning style within the respondents is the Converger (57) followed by the Divergers (46). At last, the learning style with the least amount of representatives within the sample are the Accomodators with 33 observations. In the study of Kolb & Kolb (2005b), it is said that accountants are in majority convergers, which is the second most popular learning style within the students of Accounting at UEM.

Table 5: Predominant learning styles distribution within sexes

Sex	Styles				Total
	Accomodator	Assimilator	Converger	Diverger	
Male	11	49	27	13	<b>100</b>
Female	22	62	30	33	<b>147</b>
All	33	111	57	46	<b>247</b>

Source: developed by the author (2017)

When we make mean scores of Concrete Experience (CE), Active Experimentation (AE), Reflective Observation (RO) and Abstract Conceptualization (AC), and use these

numbers in a graph, as a result we get a visual idea of what the average UEM accounting student looks like, as can be seen on Figure 5.

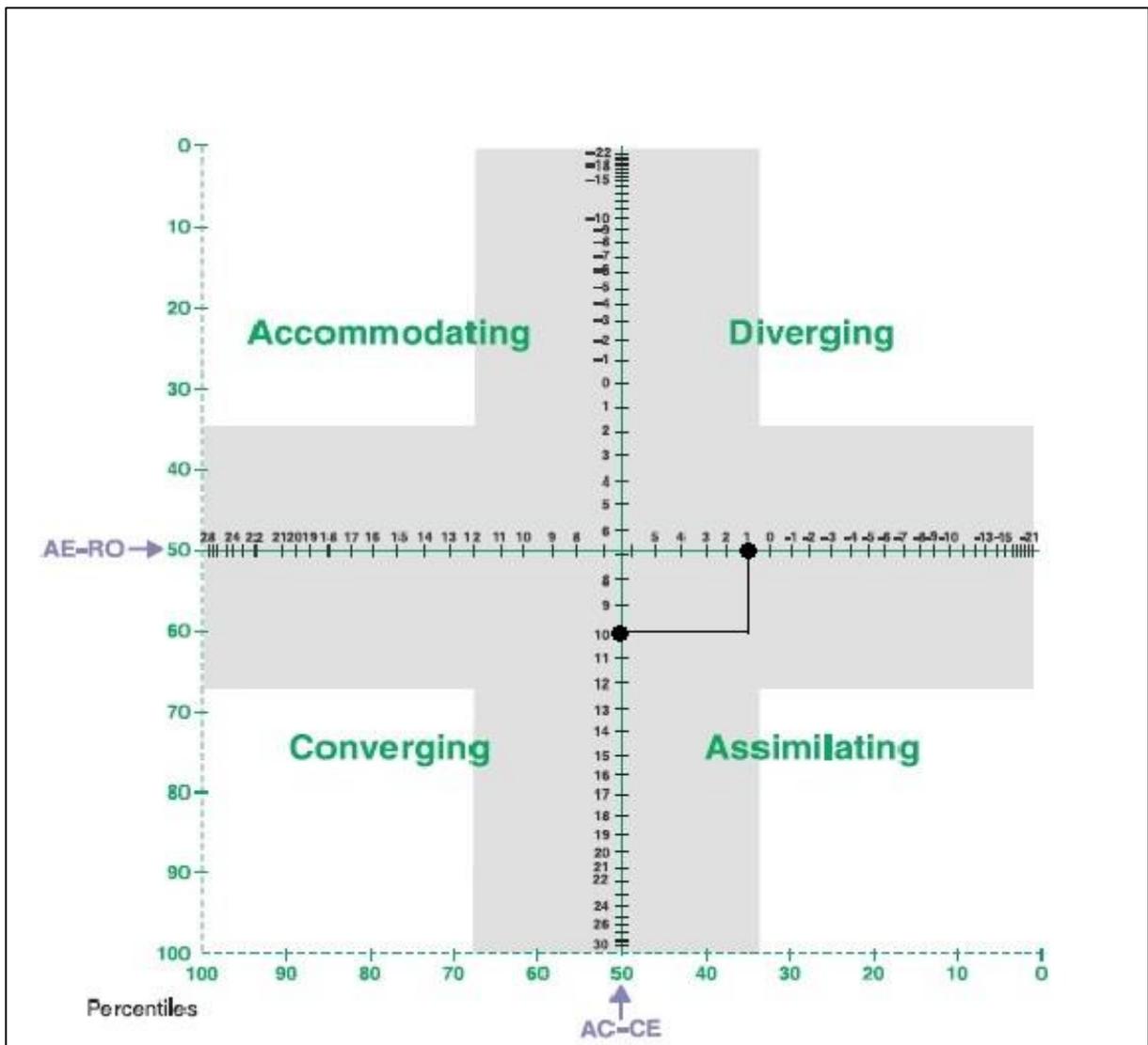


Figure 4: Mean learning style of UEM accounting students, considering 247 observations  
Source: developed by the author (2017).

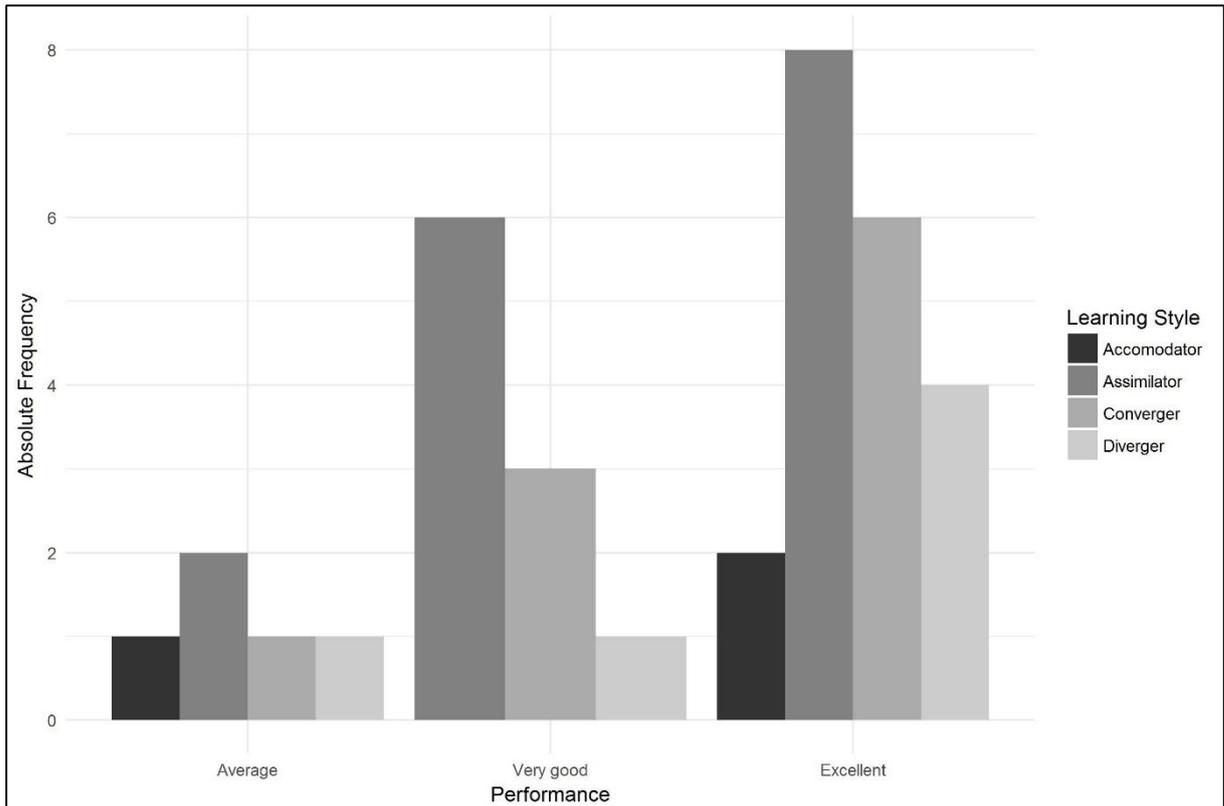
This result of the majority of students being assimilators complies with the study of Nogueira & Espejo (2010), which coincidentally was done with students from a University which is in the same state and only about 500 kilometers away from UEM. Similar results in terms of predominant learning styles were also found in the studies of Baker, Simon and Bazeli (1987) done with students of an American HEI, Geiger (1992) and partially in the study of Auyeung & Sands (1996) done with students from Australia, Taiwan and Honk Kong.

Since the majority of students are assimilators, it is interesting to enforce lectures and papers, being this is the way that assimilators best learn according to Kolb & Kolb (2008). On the other hand, in order to benefit the majority of students, a professor would have to refrain from simulations, case studies, mutual cooperation and hands on activities that would benefit a small portion of the students who are the opposite or accommodators (Kolb & Kolb, 2008).

There are many specific areas of the accounting field where students took internships in. Of the 163 students who had already taken or were still taking internships, 80 of them work with tax accounting. This high number was already expected since the majority of employers of UEM's accounting students are tax accounting offices. In the management spectrum, 40 of these 163 students reported doing some work of managerial accounting. In the public sector, 22 students worked in city halls, education departments, revenue departments and other public institutions doing public accounting. Regarding payroll accounting, 17 of the 163 students reported that they did activities related to calculation of salaries, employee resignations and other tasks related to payrolls. Lastly, 8 students reported working with accounting in the third sector. These 8 students worked in Non-Governmental Organizations (NGOs) or worked in accounting offices doing the accounting of such organizations. Students could respond that they worked with many different areas simultaneously.

In regards to performance, it is important to note that out of the 88 respondents who had taken (and finished) internships, nobody graded themselves below average. All of the responses were of average, very good or excellent, in other words, there is small variability of results.

Regarding the final sample of 35 students, the low variability of answers in terms of self-performance assessment remained, which indicates that students approve their performance and feel as if they are meeting requirements. Such responses can be seen in figure 6, alongside the learning styles.



*Figure 5: Learning styles and self-assessment of performance, considering 35 observations*  
Source: developed by the author (2017).

With regards to the company supervisors' opinions, the results show that the overall performance of UEM's accounting students is above average. The supervisors were asked to grade 17 elements from 1 (lowest score) to 10 (highest score) about the trainees' competencies. These elements were:

- Q1. Enthusiasm at work;
- Q2. Ability to learn;
- Q3. Initiative;
- Q4. Quality of the work done;
- Q5. Trustworthiness;
- Q6. Interpersonal relationship;
- Q7. Professional demeanor;
- Q8. Productivity;
- Q9. Decision-making;
- Q10. Attendance;
- Q11. Punctuality;
- Q12. Work management;

Q13. Use of technology and systems;

Q14. Strategic and critical reasoning;

Q15. Industry/Sector Analysis;

Q16. Legal/Regulatory Perspective;

Q17. Following of company guidelines;

The responses to all of these elements were highly positive. The lowest score found was a 4. Analyzing all of these elements, we note that there is a homogeneous behavior amongst all respondents, as can be seen on Figure 7.

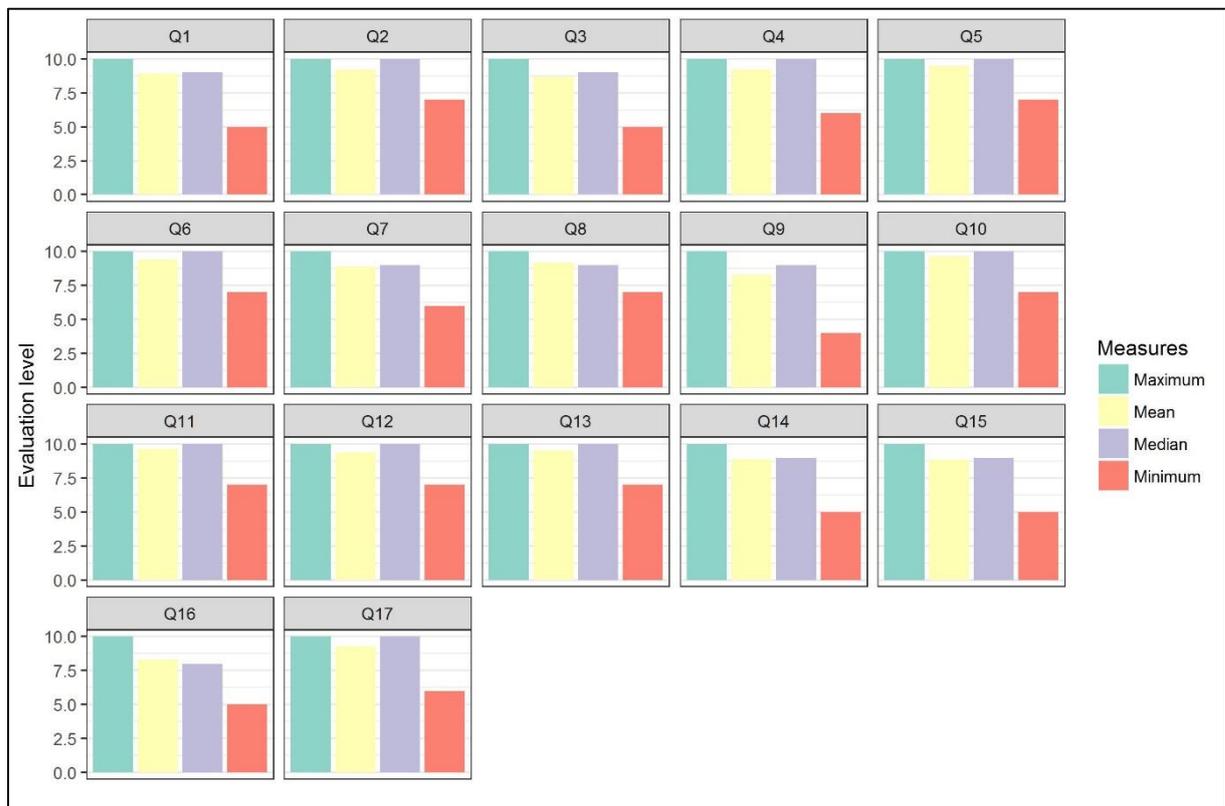
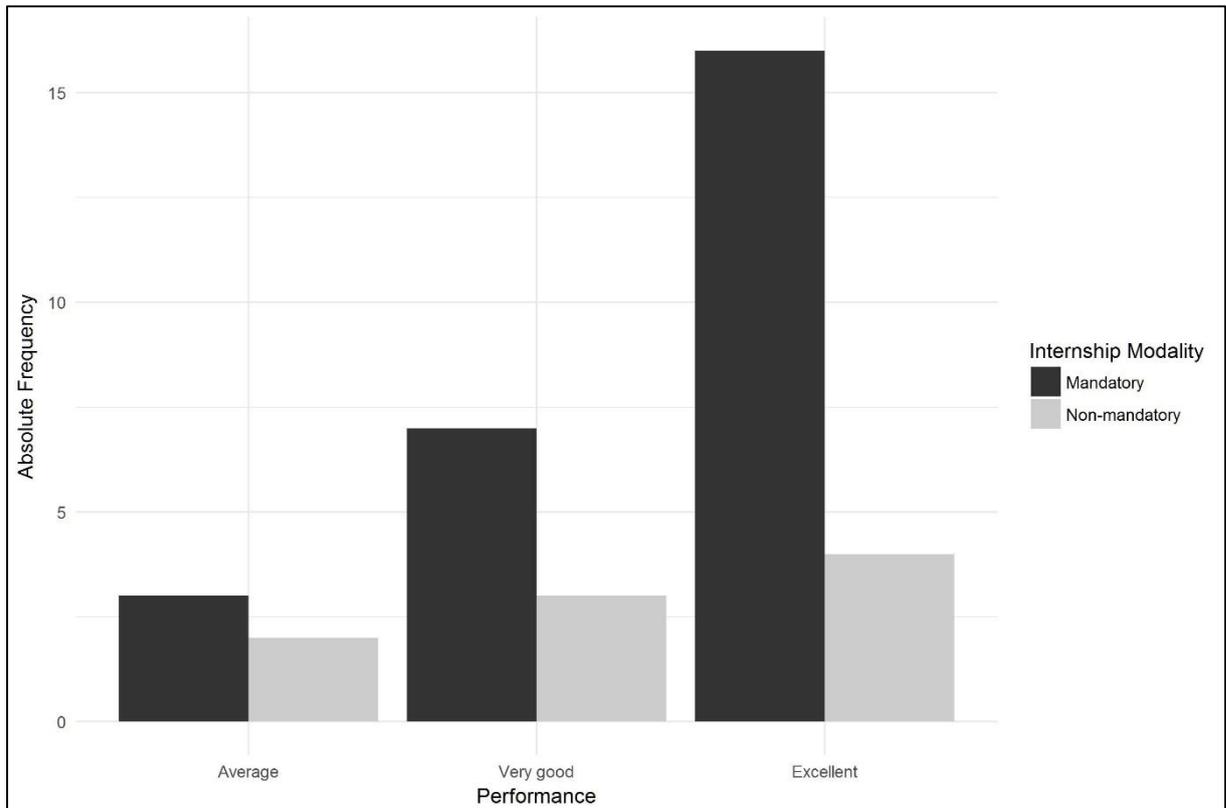


Figure 6: Supervisor's perception regarding students, considering 35 observations

Source: developed by the author (2017).

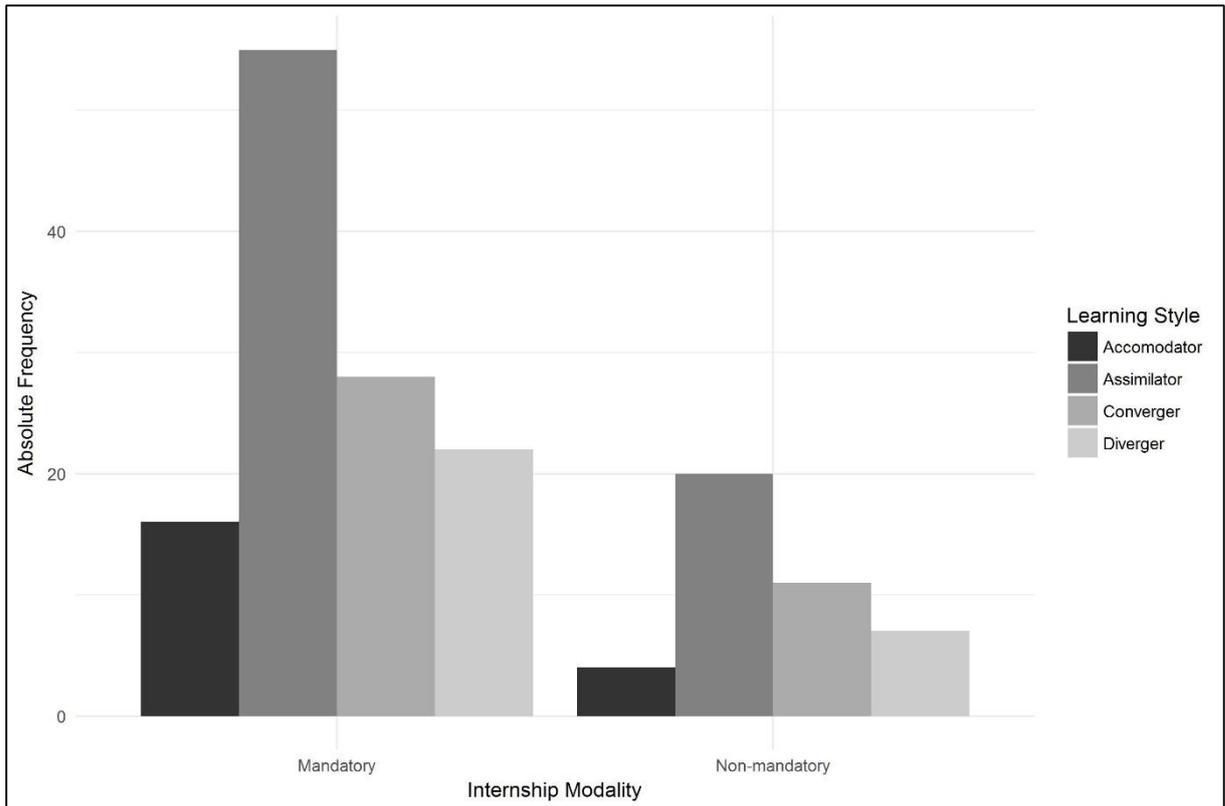
Another explored benefit of internships is in regards to employability. Excluding the 7 students working at public offices which have limited time contracts with no potential of renewal, all but eight of the 28 remaining students in the final sample were offered a chance to continue in the company as an effective full time worker. This represents a potential employability rate of 80% after the internship is over. Of the 20 students who were offered the chance to continue working in the company, however, only 12 accepted (60%), in other words, 40% of students declined to continue working in the company. The reasons for the refusals or acceptances were not explored in the study.

Regarding the modality of internship amongst the 35 respondents, the majority of them underwent obligatory internships, as can be seen on Figure 8.



*Figure 7: Performance and internship modality, considering 35 observations, Source: developed by the author (2017).*

It can be also withdrawn that in both modalities of internships, the frequency of learning styles is similar, evidencing a low visual variability of internship modality and learning styles, which can be seen on Figure 9.



*Figure 8:* Learning style and internship modality, considering 35 observations  
Source: developed by the author (2017).

The results listed in the figures above, will be tested and further analyzed by the use of statistical tools in the segment ahead.

#### 4.3 HYPOTHESES TESTING

In order to test the hypotheses concerning internship performance and learning styles, the mean score statistic technique was used, in which the following hypothesis was:

H1: Accounting internship performance is impacted by learning styles.

When tested, the following results were obtained:

*Table 6: Internship performance and learning style*

Learning style	Performance			Total
	Average	Very good	Excellent	
Accommodator	1	0	2	3
Assimilator	2	6	8	16
Converger	1	3	6	10
Diverger	1	1	3	5
<b>Total</b>	5	10	20	35
Statistics $Q_s = 0.3513$	p-value = 0.9501			

Source: developed by the author (2017).

The results presented on Table 6 elicit that we reject the hypothesis (H1), in this form, we verify that the internship performance is not impacted by the learning style for the sample tested. These results are contrary to the premise that the learning style of an individual directly affects their performance in internships, which led to the creation of these hypotheses. The low variability of performance itself would already suggest that the learning styles do not play a significant role in internship performance. There are two possible explanations that may have affected this outcome. Firstly, the sample size of 35 respondents could be a key factor to explain the low variability of performance. The second aspect to observe is the type of job the interns are doing. The majority of students perform activities with low requirements for critical thinking and technical knowledge, most students simply record financial transactions in an accounting system. The low complexity of the activities itself may explain the above average performance which was observed. In summary, these factors or the combination of factors may have led to the low variability of answers and consequently the non-relation between learning styles and internship performance.

The second hypothesis to test was:

H2: Students of mandatory internships have different predominant learning styles of their non-mandatory counterparts.

In order to test this, the Chi-square technique was used, since the data met its requirements. This technique verifies distribution in frequencies.

Table 7: Learning style and internship modality

Internship modality	Learning style				Total
	Accomodator	Assimilator	Converger	Diverger	
Mandatory	16	55	28	22	121
Non-mandatory	4	20	11	7	42
<b>Total</b>	20	75	39	29	163
Statistics Qp = 0.5409	p-value = 0.9098				

Source: developed by the author (2017).

The results indicate that we reject the hypothesis H2, in other words, students that underwent mandatory and non-mandatory internships have the same predominant learning style. This is opposite to the premise that motivated the hypothesis creation where students who sought non-mandatory internships would have a different learning style. It is obvious that if there is no advantage in taking non-mandatory internships if there is a legal requirement to take one, few students will undergo such arduous and energy consuming experience. With the sample of 163 students, only about one fourth of students decided to take non-mandatory internships. The reasons for this were not explored in this study. One observation that can be made from Table 8 is that unlike the other learning styles who took non-mandatory internships in the estimated proportion of 1:4, the assimilators are more likely to engage in non-mandatory internships, to an estimated proportion of 1:3.

In order to test the last hypothesis, the mean score technique was used once again:

H3: Non mandatory accounting internship performance is different than mandatory accounting internship performance.

When tested, the following results emerge:

Table 8: Internship performance and modality

Internship modality	Performance			Total
	Average	Very good	Excellent	
Mandatory	9	7	16	26
Non-mandatory	2	3	4	9
<b>Total</b>	5	10	20	35
Statistics Qs = 0.9154	p-value = 0.3387			

Source: developed by the author (2017).

The results presented in Table 7 show that we reject the hypothesis (H3), or in other words, the internship performance is not in any way related to the modality of internship. Once again, this goes contrary to the premise that originated the hypotheses which is that in a free initiative system where a student could chose if he would like to do an internship or not, this would impact the performance. It is worth arguing that the existence of the obligatoriness

of internships demotivates students to attempt to pursue a more value adding experience. This can be seen solely by looking at the proportion of students who undergo optional internships in relation to those who take mandatory ones (all of the students). If a more equivalent amount of students underwent optional internships, more comparisons could be drawn.

## 5 CONCLUSION AND RECCOMENDATION

### 5.1 CONCLUSION

Internships are very important when it comes to providing students skills that they will carry and further develop throughout the rest of their careers. Not only the skillset is begun to be acquired but also the trainees start to make decisions that will impact their professional life, for example, when deciding about a specific field inside the area or if the course which they are studying is in fact what they wish to do for a living.

The knowing of different learning styles by professors can play a significant role in order to develop a more student friendly curricula, including the tailoring of internship programs since once they know how students learn, they can implement and enforce best practice strategies into the curriculum. The majority of students of the sample were assimilators, which is style that appreciates theories and do not need practical experimentation in order to foster knowledge. Thus, it is somehow adequate that students who are doing tax accounting internships seem to have above average performance, since legislation is theory.

This study sought to correlate the performance of internships and learning styles. To do so, a sample of 247 accounting students were surveyed.

It was found that the internship performance is not impacted by the students' learning styles since there is no relevant statistical disparity among learning styles regarding performance. This result goes contrary to the premise that motivated the study. On the other hand, it complies partially with the study done by Nogueira & Espejo (2010). The result of this hypotheses test indicates that any type of learner can benefit from internships and not only learners who best learn from concrete experiences, which, in essence, is what internships are. For the host institution, it means that there should be no efforts taken to tailor different types of internships for students with different learning styles in order to improve performance. For the host companies, this implies that the performance of the trainees will not be altered by what and how work experiences are provided.

Although non-mandatory internship showed superior performance, it cannot be inferred that it is statistically relevant. Thus, the internship performance is not in any way related to the modality of internship. This result means that the continuation of mandatory internships by UEM promotes employment and good performance, since the performance

average was high by according to both students and supervisors. For students, the implication of this result is that the modality of internship is not the determining factor that affects their performance, or in other words, they can achieve high performance levels in both modalities of internships. Since to the best of our knowledge there is no other study with the scope of these hypotheses by searching on the CAPES database, we cannot compare findings.

Regarding performance as a whole, since it was overwhelmingly well assessed and since the majority of interns work with tax accounting, it might indicate that the high performance is due to the low level of complexity involved with the activities the interns are doing. Much of the time spent at the internship is doing repetitive low mental effort tasks such as registering electronic invoices and other business transactions in the system with a bar code.

As a result of chi-square statistical test, it is stated that there are in fact no differences in the predominant learning style of students opting for different internship modalities. The implications of this result is that students do not view non-mandatory internships as different from mandatory ones. Students might feel as if there is no advantage in taking non-mandatory internships since they will necessarily have to go through a mandatory one. It can be inferred that this current system of mandatory internships may be demotivating students to seek opportunities in companies for non-mandatory internships. In other words, the modality of internship does not attract student's attention based on their learning style but in other aspects, maybe based on their perception of necessity (financial, perhaps) and other potential benefits. Since to the best of our knowledge there is no other study with the scope of these hypotheses by searching on the CAPES database, we cannot compare findings.

## 5.2 RECCOMENDATION

It is recommended that this study be replicated in order to confirm or refute the results obtained. Since the final sample was small in number in relation to the population, the data could be distorted. Thus, it would be interesting for upcoming studies focus on obtaining a larger sample to minimize this effect. It would also be fulfilling if a study focused on the choice of non-mandatory internships and thus determine the motives that lead students into taking non-mandatory internships where there is a legal requirement for mandatory ones.

Studies with the same methodology should consider other courses rather than accounting, like business administration and economics, in order to compare predominant learning styles and the performance of internships. It would be curious to test learning styles

and performance of mandatory credit and optional credit disciplines in post-graduate courses of accounting, economics and business administration. Perhaps in a higher academic level, learning styles can play a more significant role in performance.

For the HEI which was base for this study, according to the results, the legal requirement for the doing of internships should be kept, as the evidence shows that students approve their performance and the benefits of such programs are clear, specially in terms of self-perception of performance and the potential of employability.

Future research should also concentrate on making a qualitative study on the contributions that internships bring to students' skillset, the enhancement of academy and business ties and the benefits left for the company after having the student finish the programs.

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**APPENDIX A – DATA COLLECTION QUESTIONNAIRE FOR STUDENTS IN  
PORTUGUESE LANGUAGE (WITHOUT KLSI)**

Nome: \_\_\_\_\_

E-mail (caso queira receber o resultado da pesquisa):

\_\_\_\_\_

Modalidade do estágio:

- Obrigatório
- Não-obrigatório

Já trabalhava na empresa antes do estágio?

- Sim
- Não

Como você avalia seu desempenho geral no estágio?

- Excelente
- Muito bom
- Média
- Abaixo da média
- Não satisfatório

Já terminou o programa de estágio?

- Sim
- Não

Já defendeu estágio?

- Sim
- Não

Carga horária diária: \_\_\_\_\_

Carga horário total: \_\_\_\_\_

Área do estágio (assinalar mais de uma opção se necessário):

- a) Contabilidade fiscal
- b) Contabilidade gerencial
- c) Contabilidade do terceiro setor
- d) Contabilidade pública
- e) Custos
- f) Auditoria
- g) Perícia
- h) Outros: \_\_\_\_\_

**APPENDIX B – KOLB’S LEARNING STYLE INVENTORY (KLSI V. 3.1.)**

(By force of contract, the questionnaire cannot be displayed here)

**APPENDIX C – DATA COLLECTION QUESTIONNAIRE FOR SUPERVISORS IN  
PORTUGUESE LANGUAGE**

Nome do aluno \_\_\_\_\_  
Supervisor \_\_\_\_\_

Instruções: O supervisor deve avaliar o aluno de forma objetiva, atribuindo uma nota de 1 a 10, sendo 1 a pior nota e 10 a melhor.

**Entusiasmo em relação ao trabalho**

**Habilidade para aprender**

**Iniciativa**

**Qualidade do trabalho**

**Confiabilidade**

**Relação interpessoal**

**Maturidade e equilíbrio**

**Produtividade**

**Julgamento (tomada de decisão)**

**Presença**

**Pontualidade**

**Gestão do trabalho**

**Uso de tecnologia/sistemas**

**Raciocínio crítico/estratégico**

**Análise setorial (ambiente em que a empresa está inserida)**

**Perspectiva legal/regulatória**

**Adequação às normas internas da empresa**

	<b>Desempenho Geral</b>			
Excelente	Muito bom	Média	Abaixo da média	Não satisfatório

Ao aluno foi oferecida uma chance de permanecer na empresa?

- Sim  
 Não

Se sim, o mesmo aceitou?

- Sim  
 Não

**APPENDIX D – AICPA CORE COMPETENCIES AND SUPERVISOR  
QUESTIONNAIRE CORRESPONDENCE**

<b>Questionnaire</b>	<b>AICPA Core Competencies</b>
Enthusiasm at work	<b>Functional Competencies</b>
Hability to learn	
Initiative	Decision modeling
Work quality	Risk analysis
Trustworthiness	Measurement
Interpersonal relation	Reporting
Maturity and balance/professional demeanor	Research
Productivity	Leverage technology to develop and enhance functional competencies
Judgement/decision making	<b>Personal Competencies</b>
Presence/attendance	
Ponctuality	
Work management	
Use of technology and systems	
Strategic and critical reasoning	
Industry/sector analysis	
Legal/regulatory perspective	
Following company guidelines	
	Problem-solving and decision-making
	Interaction
	Communication
	Project management
	Leverage technology to develop and enhance personal competencies
	<b>Broad Business Perspective Competencies</b>
	Strategic/critical reasoning
	Industry/sector analysis
	Legal/regulatory perspective
	Leverage technology to develop and enhance broad business perspective