

MASTER'S THESIS

Bridging the gap between theory and practice in accountancy education in the Netherlands through experiential learning.

Alkema, Marieke

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*Bridging the gap between theory and practice in accountancy
education in the Netherlands through Experiential Learning*

Marieke Alkema

Master Onderwijswetenschappen

Open Universiteit

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Naam begeleider: Prof. dr. Marjan Vermeulen & Slaviša Radović PhD

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Bridging the gap between theory and practice in accountancy education in the Netherlands through Experiential Learning

Summary

Accountancy has received some critiques about their performance. As the amount of new accountants is declining, improvement of the accountancy education is desirable, with special regard to the integration of theory and practice.

In this study, Experiential Learning is used as a model to improve integration between theory and practice, as more Experiential Learning is linked to better learning outcomes. The mARC model from Radović, et al. (2020b) was used to investigate how to implement Experiential Learning by stimulating Authenticity, Reflection and Collaboration.

The research consisted of two parts, comprising a survey and interviews to let the students explain their answers. For the interviews, the lowest scoring item of each subscale was used. Through principle component analysis subscales were formed and these subscales were analysed using Spearman's Rank Correlation Coefficient.

The survey and the interviews indicate that students of accountancy education agree that the programme has Authenticity, although some subjects are taught too in-depth to be useful. Students have indicated that Reflection is present, although it is more geared towards the assignment, not towards the knowledge and insights of the student. Collaboration is hardly present in the programme, as students usually work individually.

The two subscales of Authenticity relate to each other. The same is true for the subscales of Collaboration, which all relate to each other. However, not all subscales of Reflection relate to the other subscales. The subscales of Authenticity and Collaboration were related. Reflection does not relate to Authenticity and only some subscales of Reflection relate to some subscales of Collaboration. Within the three pillars Authenticity, Reflection and Collaboration, the subscales were related with the Experiential Learning scale, although two of the subscales of Reflection do not have a relation to one or two of the subscales of Experiential Learning.

A limitation of this study is the small amount of respondents, so some caution with generalisations of the quantitative findings is required. There are some practical implications that can be drawn. It is expected that more emphasizing of the pillars of Experiential Learning improves the integration of theory and practice and the learning outcomes of the students. To improve the amount of Authenticity in the programme, less in-depth information could be taught. As the current programme stimulates lower levels more than higher levels of Reflection, the stimulation of higher levels of Reflection may also improve the learning outcomes. Finally a larger amount of Collaboration may improve learning outcomes as well.

Keywords: Accountancy Education; Experiential Learning; Authenticity; Reflection; Collaboration

1. Introduction

In the last few years there have been various reports about accountants' performance (see e.g. Commissie Toekomst Accountancysector, 2020; De Vries & Herrijgers, 2018; Monitoring Commissie Accountancy, 2020). According to these reports, the overall reliability of their work should improve. Furthermore, according to De Vries and Herrijgers (2018) there is a high workload on young professionals, which makes it hard to combine their job with the post-initial education for accountants. Due to a lack of new accountants, it is not likely that this workload will decline in the upcoming years (NBA, 2020). The Commissie Toekomst Accountancysector [Commission Future Accountancy Sector] (2020) advised that the appeal of the profession should be improved, by improving the work-life balance of accountants and prospective accountants. The work-life balance of prospective accountants can be improved by integrating the theoretical and the practical (De Groot, 2020). Currently, the educational system for accountants is divided in two parts, a theoretical part and a practical part. (For more information about the educational system for accountants in the Netherlands, see 1.1.1). These two components are organized by two different institutions, which makes it difficult to integrate the theoretical part and the practical part. It is not only hard for students to use what they have learned in the theoretical part into their practice, but to transform their experience of the practical education into knowledge is hard as well.

A theory that can help the integration of theory and practice is *Experiential Learning*. Experiential Learning is defined by Kolb (1984), who described learning as an iterative process of concrete experience, reflective observation, abstract conceptualisation, and active experimentation (a further description of Experiential Learning can be found in section 1.1.2). In their literature review of Experiential Learning, Radović et al. (2020a) state that Experiential Learning works well with professionalisation and has multiple benefits for students. By integrating theory and practice, research suggests that students become more thoughtful, reflective and critical, and have a better understanding of the profession and practice (Radović et al., 2020a). The introduction of Experiential Learning into accountancy education can close the gap between the theoretical training and the practical training for accountants and ease the path to the accountancy profession. Recent research by Butler et al. (2019) indicated that by using Experiential Learning more critical thinking and problem-solving activities can be introduced in accountancy education. However, no research on Experiential Learning in accountancy education in the Netherlands has been found.

Therefore, this research focusses on to what degree Experiential Learning, as defined by Radović et al. (2020b), has been implemented in accountancy education in the Netherlands. Based on this theory, it can be expected that more Experiential Learning in accountancy education may be a solution to the experienced gap between theory and practice. Therefore, the goal of this research is to find out how Experiential Learning can be implemented further to improve the integration of theory and practice in accountancy education.

1.1 Theoretical framework

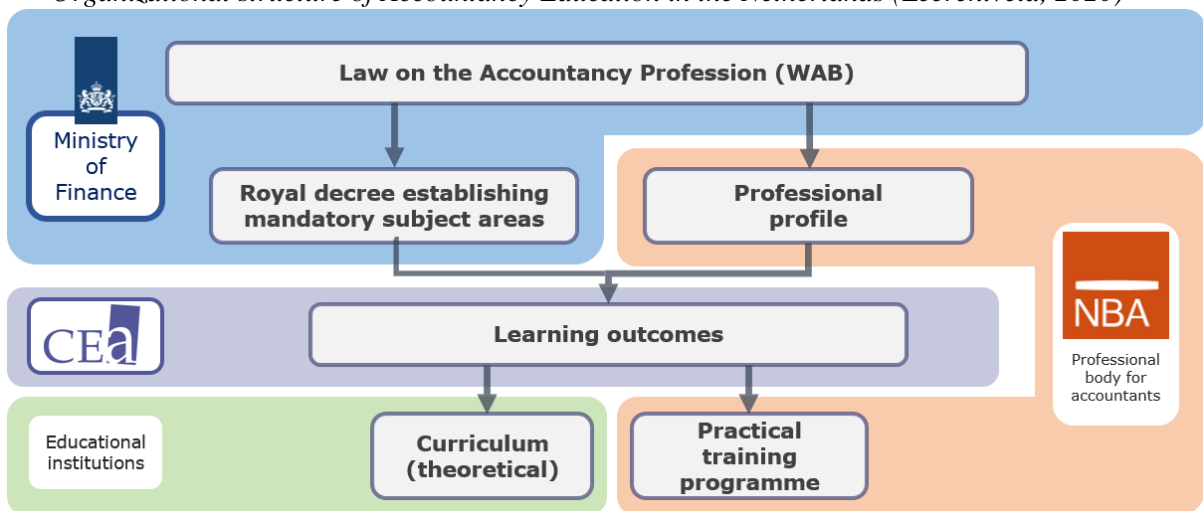
This section gives an overview of the relevant context of accountancy, education and Experiential Learning. The first section will explain how accountancy and accountancy education is structured in the Netherlands. The definition of Experiential Learning and what is known about its purposes and limitations will be discussed in section 1.1.2.

1.1.1 Accountancy & education in the Netherlands

To be registered as an accountant at the Royal Dutch Professional Body of Accountants (NBA) one must have completed an educational programme that complies with the learning outcomes that have been set by the Accountancy Programme Learning Outcomes Committee (CEA) (Leerentveld, 2020). The organization of accountancy education is anchored in the Law on the Accountancy Profession (WAB) (see Figure 1).

Figure 1

Organizational structure of Accountancy Education in the Netherlands (Leerentveld, 2020)



By this law, CEA has been appointed to establish the learning outcomes for the theoretical and practical training programmes and to guard the execution of the training programmes. Institutions of higher education organize the theoretical programme and the NBA organizes the practical programme. There are eight academic universities (CEA, 2018a) and nine professional universities that have a theoretical programme (CEA, 2018b). This makes it more complicated to merge these two forms of education, although multiple organizations have stated that integration is a desirable option (see e.g. De Vries & Herrijgers, 2018; De Groot, 2020; CEA, 2019a). The integration could not only ensure a more efficient learning experience (De Groot, 2020), but could make accountancy education more attractive for potential students (De Vries & Herrijgers, 2018). In conclusion, the amount of organizations that are involved in the education of future accountants, makes it more complicated to integrate the practical and theoretical part of education. More research on how this can be achieved is

needed (De Groot, 2020). Therefore, this research focusses on how Experiential Learning can be implemented into accountancy education to support more integration of theory and practice.

1.1.2 Experiential Learning

The learning cycle of Experiential learning is based on the theories of Experiential learning by Lewin, Dewey, Piaget and others (Kolb, 1984). Since then, several theories have added their findings to this model, but using this model in higher education maintains an issue (Radović et al., 2020a). This section describes how Experiential Learning is developed and what factors contribute to Experiential Learning. The section ends with some critics of Experiential Learning and why it is used in this study.

1.1.2.1 What is Experiential Learning?

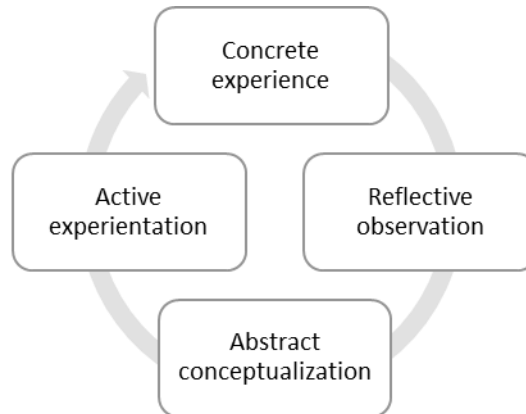
Kolb (1984) defined learning as: “the process whereby knowledge is created through the transformation of experience” (Kolb, 1984, p. 38). In Figure 2, the cycle of learning as proposed by Kolb is showed. The learner has to go through all four steps that are defined in this model to complete the learning process (Kolb, 1984). This process is only complete if the learner applies new knowledge in practice (contextualising knowledge), gaining new knowledge by concrete learning experiences and convert this into abstract generalizations (de-contextualising knowledge) and finally, applying this new generalized knowledge in other learning experiences (re-contextualising knowledge) (Radović et al., 2020a). To design education that fully supports the complete cycle of Experiential Learning, an instructional model was developed: the mARC design model (Radović et al., 2020b). The mARC model has three pillars that stimulate Experiential Learning in education grounded in three principles of Authentic, Reflective and Collaborative learning instructions (Radović et al., 2020b).

Authentic learning instruction means that “learning is a cyclic process related to the nature of the “real” world beyond the classroom” (Radović et al., 2020b, p. 4). Designing authentic instruction ensures that students perceive learning as relevant and it helps learners in transforming the knowledge into new situations (Van Merriënboer & Kirschner, 2013). Not all authentic activities require the student to be actively involved in the situation; activities such as observation can also be a method for a student to experience an authentic work situation (Radović et al., 2020a).

Reflective learning instruction means that learners are supported to contemplate on their previous knowledge and experience (Radović et al., 2020b). Reflection promotes learning and higher order thinking skills, develops professional practice and facilitates and structures learning through experience (Coulson & Harvey, 2013).

Figure 2

The cycle of learning with the four steps of Experiential Learning



Note. Adapted from Experiential Learning, by D.A. Kolb, 1984, Prentice Hall.

Collaborative learning instruction means that “learning is situated and mediated in a social context” (Radović et al., 2020b, p. 4). Learners do not learn individually, but do so in interaction with each other. This means that the relations between the learner’s process and their social context should be addressed when designing instruction (Billett, 2014).

1.1.2.2 Stimulating factors of Experiential Learning

There are multiple factors that can contribute to Experiential Learning. These factors can be divided into three categories: student factors, education and environment factors, and other mediating factors (Radović et al., 2020a).

The first category, student factors, may include demographic factors like age, personality traits and previous experience of the student (Radović et al., 2020b). For example, Bain et al. (1999) found that students aged 30 years or older reached higher levels of reflection. Some personality traits like integrity and openness to experience may help the student to progress (Chi, 2013). On the other hand, if a student lacks relevant knowledge, this may be hindering to Experiential Learning. (Bain et al., 1999). Research suggests that the variety of previous experience may support reflection (Radović et al., 2020b).

The second category, education and environment factors that facilitate Experiential Learning processes, can be grouped within the three pillars of Authenticity, Reflection, and Collaboration. Within the first group, it is acknowledged that authenticity in the course can be essential for learning (Radović et al., 2020a). Several factors are mentioned: strong relationship between learning and real world outside the classroom, engaging learners in more meaningful learning, and providing opportunities for learners to explore different perspectives (Aiken & Day, 1999). Furthermore, research suggests that authenticity can improve the problem-solving skills of students and enjoyment during learning (Lohmann et al., 2019). Reflection, the second group of factors, can promote deep learning about accounting in practice, as it turns the experience into knowledge by practicing a range

of cognitive processes such as summarising, analysing, deduction and elaboration (Brown & McCartney, 1998). Reflection supports an indepth analysis of a student's experience, beliefs, and personal assumptions (Radović et al., 2020a). It can also support deeper and more critical thinking, which can improve the link between theory and practice (Radović et al., 2020a). Within the third group, it is acknowledged that when collaboration is integrated in accounting education, it is constructed as a social activity. This further improves the learning process (Friedman & Kass-Shraibman, 2012). Several factors implied that cohort building, group field trips, authentic learning activities, jointly constructing new knowledge and positive members' interdependence lead to better involvement in complex learning. (Radović et al., 2020a).

Finally, Radović et al. (2020a) mention mediating factors in Experiential Learning, namely approaches to learning and students' perception of the environment. These include how relevant the task is for the student and how connected the student feels to other students. While it is acknowledged that each of the pillars alone can support learning, the greatest benefits of Experiential Learning are expected to be achieved when they are tied together and combined (Radović et al., 2020b).

1.1.2.3 Possible benefits and critics of Experiential Learning

In the last few years, there has been an increase in the emphasis on Experiential Learning (Roberts, 2018). The studies that have been conducted, state several benefits of the use of Experiential Learning. There are positive effects on a personal and professional level, on the obtained knowledge and on the overall learning experience (Radović et al., 2020a). On a personal level, the motivation and attitude towards learning improves with Experiential Learning (Hursen, 2016). Furthermore, it supports students in being more creative (Harford & MacRuairc, 2008). On a professional level, students understand their profession more, and become more critical of their own behaviour (Hagevik et al., 2012). Research suggests that students can achieve deeper levels of knowledge with Experiential Learning (Hursen, 2016; Sutherland & Markauskaite, 2012). Finally, students themselves perceive experiential learning as necessary for their own training (Aiken & Day, 1999; Bain et al., 1999). Butler, Church, and Spencer (2019) state that Experiential Learning is a natural enhancement for accountancy education, as it challenges the student to think critically and look further than just the numbers. Furthermore, it helps the student to become more ethically aware (Dellaportas & Hassall, 2013), which is important to detect and inhibit fraud if accountants come across this.

Apart from the mentioned benefits, there are some critics of Experiential Learning. Kirschner et al. (2006) stated that Experiential Learning lacks the guidance that students need. This is especially true if the educational design stimulates the student to construct essential information by themselves, with no guidance of an expert who offers the essential information to the student beforehand. Another point of criticism is the small emphasis of Experiential Learning on social conditions of learning (Miettinen, 2000). In the original Kolb theory, experience is seen as highly individual, where modern theories have more emphasis on the social part of learning. Furthermore, Castelijns et al. (2013) state that it is

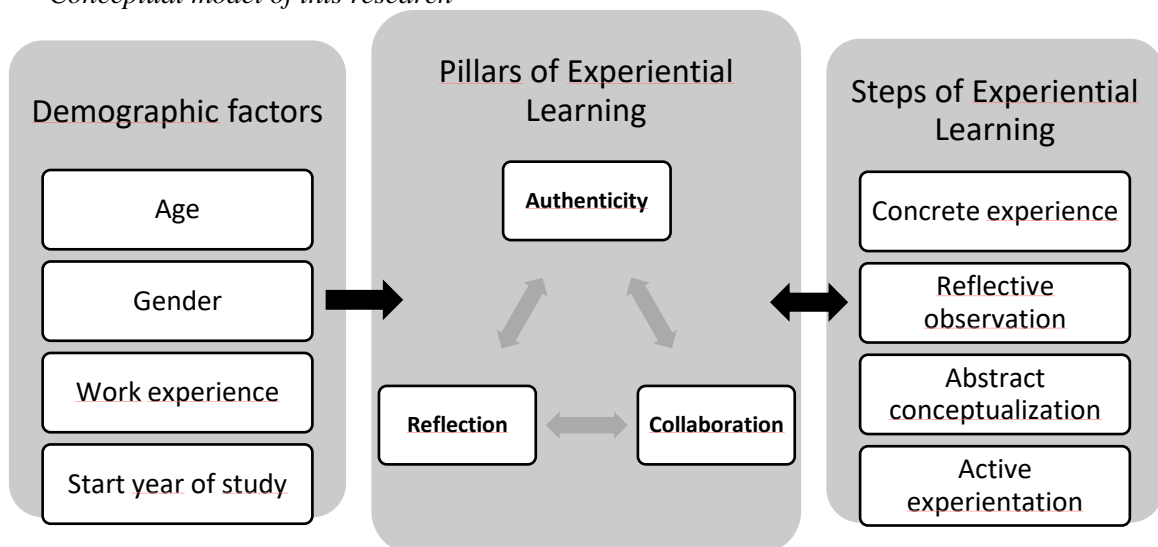
complicated to ensure all conditions are met for collective learning, as there tends to be a lack of time to form a common focus for learning. Using a theory that can work is not enough, as everybody involved needs time to adjust to the consequences of the implementation of a new educational design. Therefore, using Experiential Learning means that special attention should be given to the amount of guidance, social conditions of learning and the time spend on collective learning. Roberts (2018) stated that few studies have been conducted inside of the classroom, so to further determine when and how Experiential Learning works, more studies in real life settings are needed.

1.2 Research questions

The aforementioned studies of Experiential Learning have been done in multiple countries, yet none of these studies were conducted in the Netherlands in the context of accountancy education. Therefore, the goal of this thesis is to find out how Experiential Learning can be implemented further to improve the integration of theory and practice in accountancy education. The three pillars of Experiential Learning as proposed by the mARC model, are used as a framework to determine 1) the extent to which Experiential Learning is integrated in the accountancy education in the Netherlands as perceived by the students, and 2) to give an indication on how theory and practice in accountancy education can be improved. See figure 3 for an overview of the conceptual model used in this study. On the left, the demographic factors that may influence the pillars of experiential learning are showed. On the right, the steps of experiential learning are added, as it is theorized that if students fulfil all these steps, the gap between theory and practice is narrowed. The pillars of experiential learning are what contribute to these steps of experiential learning.

Figure 3

Conceptual model of this research



Based on the above theoretical framework and research goal, the six specific research questions of this study are the following:

1. What is the students' perception of authenticity in the curriculum of the post-initial theoretical and practical programme?
2. What is the students' perception of the extent to which reflection is stimulated in the curriculum of the post-initial theoretical and practical programme?
3. What is the students' perception of the extent to which collaboration is stimulated in the curriculum of the post-initial theoretical and practical programme?
4. How are the students' perceptions of authenticity, reflection and collaboration correlated with each other and with students' perception of Experiential Learning?
5. Do students' demographic factors affect their perceptions of authenticity, reflection and collaboration?
6. What positive and negative elements do students and educators perceive regarding the separate theoretical and practical programmes?

2. Method

2.1 Design

To answer the first five research questions, a survey was used. Using a survey allows to ask many students at once about their experiences with accountancy education. The sixth research question is answered by semi-structured interviews to further explore the specific experiences of students and to identify which instructional elements are missing (to provide clues how the integration between theory and practice can be improved). As this research entails an initial qualitative data collection, followed by quantitative data collection and analysis, with a final phase of integration of data from the two separate phases, it can be considered as explanatory sequential mixed method design (Creswell, 2014).

2.2 Participants

Every year around 650 students finish the post-initial practical programme (NBA, 2020). For the theoretical programme, around 850 students finish the programme (CEA, 2019b). Students who have started the practical programme must also be enrolled in or have finished the theoretical programme, so these students will be the target population in this study. For this study, the implementation of Experiential Learning in both programmes is studied. Participants of this survey will have the opportunity to indicate if they are interested in an interview to elaborate their answers (second phase of the data collection).

2.3 Materials

The first phase of data collection of the study contains a survey with four scales to answer the first five research questions. All items of the survey are measured with a five-point Likert scale from completely disagree to completely agree. See Table 1 for the Cronbach Alpha's of all subscales.

For the first research question, the Five-Dimensional Framework of Authentic Assessment instrument by Gulikers, et al. (2004) will be used to measure the perception of authenticity. This first scale will measure the students' perception of authenticity by three dimensions: course authenticity (A.CA) (three items), task authenticity (A.TA) (three items), and physical context (A.PC) (four items) (Gulikers, et al., 2004).

The second research question will be answered by using the Reflection Questionnaire by Kember et al. (2000). This instrument consists of four dimensions which measure students' perceptions of different levels of reflection in learning: Habitual Action (R.HA), Understanding (R.U), Reflection (R.R) and Critical Reflection (R.CR) (each measured by four items).

The third research question will be answered by using the Cooperative Learning Application Scale by Atxurra et al. (2015). The instrument has multiple dimensions, of which the following will be used: Positive Interdependence (C.PI) (nine items), Interaction (C.I) (four items), Social Skills (C.S) (seven items), Group Reflection (C.GF) (seven items) and Heterogeneity (C.H) (four items).

The fourth scale of the survey is constructed with the Experiential Learning Evaluation Framework by Young, et al. (2008). Through this instrument, an overall students' perception of the Experiential Learning can be measured. The Experiential Learning Evaluation Framework consists of four dimensions, referring to the stages of Kolb's learning cycle: Concrete Experience (E.CE), Reflective Observation (E.RO), Abstract Contextualisation (E.AC) and Active Experimentation (E.AE). Each of these dimensions has three items. The used scales are all validated in earlier research and have a sufficient alpha (see Table 1).

Finally, the survey collected the following demographic data: age (D.A), gender (D.G), work experience (D.E) and start year of post-initial study (D.SY). These data were analysed in relation to the former dimensions, to answer the fifth research question. The last part of the survey will be an option to volunteer for the following semi-structured interviews to elaborate on their experiences.

Table 1*Cronbach alpha's of all original subscales*

Subscale	Cronbach's α	Number of items
Authenticity (Gulikers, et al., 2004)		
Course authenticity (ACA)	0,91	3
Task authenticity (ATA)	0,74	3
Physical context (APC)	0,87	4
Reflection (Kember et al., 2000)		
Habitual action (RHA)	0,78	4
Understanding (RU)	0,79	4
Reflection (RR)	0,77	4
Critical reflection (RCR)	0,69	4
Collaboration (Atxurra et al., 2015)		
Positive interdependence (CPI)	0,91	9
Heterogeneity (CH)	0,94	4
Social Skills (CS)	0,90	7
Group reflection (CGR)	0,85	7
Interdependence (CI)	0,87	4
Experiential Learning (Young, et al. 2008)		
Concrete experience (ECE)	0,89	3
Reflective observation (ERO)	0,80	3
Abstract contextualisation (EAC)	0,80	3
Active Experimentation (EAE)	0,92	3

The second phase of data collection of the study contains a semi-structured interview to answer the last research question. There will be questions about the lowest rated items of each of the subscales. The question for every item will be about the students' positive and negative experiences, so that the students can elaborate on the questions of the survey.

2.4 Procedure

The first phase of the data collection was the survey. On January 26th 2022 an online newsletter was sent to all enlisted students of the practical programme with a link to participate in the survey. After this newsletter was sent, only one participant had completely filled in the survey. Therefore on February 15th a separate email was sent to half of all students with a link to the survey. Because there weren't enough respondents, a second email was sent to all enlisted students on February 24th and on March 17th the students were asked again to fill in the survey via the internship agencies. After these invitations to participate in the survey, 42 people had filled in the survey entirely. Of those 42 people, three of the entries had filled in that they had started the practical programme before 2000. As it is impossible that these people are still enlisted in the practical programme, these entries were deleted, which made the entire n of the survey 39.

For the second phase of the data collection, the mean of all items were calculated and the lowest scored item of each subscale was added to be asked in the interviews (see appendix A). In the

interviews, the students and educators are asked for their opinions about how Experiential Learning in accountancy education could be improved.

Of the 39 participants of the survey, nine students had given their email address to participate in the interviews. On May 26th these people received an email with various dates and times for the online interview. Three of the nine students enlisted for one of the dates, so various people within the accountancy education were asked to personally invite people for the interview. Four students volunteered for the interview, which brings the total amount of interviews to seven. Of these students, four studied or had studied at a professional university and three at an academic university. After conducting the interviews, the interviews were transcribed and analysed. Recurring themes were identified to form a conclusion on how well Experiential Learning is integrated in the programmes and to answer the sixth research question.

2.5 Data analysis

First, a principal component analysis was done on all scales to determine if the subscales in this research population were the same as those of the original scales. The use of non-parametric tests are necessary, as the survey had a low number of respondents. However, there is no alternative to the principle component analysis and therefore the principle component analysis was done and the subscales were calculated on the chosen scales related to the pillars of the mARC model, not on the questionnaire as a whole This principal component analysis was done with a Oblimin with Kaiser Normalization rotation as it is expected that the components relate to each other. Only factor loadings of 0,5 and higher are considered in the analysis. Then, the scale's reliability and internal consistency will be measured by using Cronbach's alpha. After that the mean and standard deviation of the (new) subscales were calculated.

Based on the principle component analysis, the (new) subscales were composed. With these new subscales, the correlations between the demographic data and the subscales and the correlations between authenticity, collaboration, reflection and experiential learning is calculated using Spearman's Rank Correlation Coefficient. Spearman's is used as the n of 39 is too low to use parametric statistics. Spearman's rank correlation coefficient will also be used to measure the correlation between the scales of the survey and the demographic data.

In the second phase of the data analyses, the interviews were transcribed. These transcriptions were analysed to find recurring themes in the answers. These themes were listed and compared to determine how Experiential Learning is integrated in both programmes. This answers the sixth research question about the positive and negative elements students experience. Combined with the data analyses of the first phase an extensive overview of the integration of Experiential Learning in accountancy education can be given.

3. Results

3.1 Descriptive statistics

The survey was completed by 39 people (see Table 2). Of those 39 people, most of them were between the ages of 26 to 30 (56,4%) and had an experience within the accountancy profession of four to six years (43,6%). Of the respondents, 69,2% was male, 30,8% female. Finally, most respondents started with their education in 2017-2019 (41,0%) with 2020-2022 as close second (35,9%).

According to the NBA (2022), of all trainees in the practical programme, 64% is male and 36% is female. Most trainees are between the ages of 26 to 30 (60%). These numbers are close to the numbers of this survey, which means that the representation regarding these demographics seems to be close to what was expected.

Table 2

Students' demographic information

Category	n	%
<i>Gender</i>		
Male	27	69,2
Female	12	30,8
<i>Age</i>		
21-25	8	20,5
26-30	22	56,4
31-35	8	20,5
41-45	1	2,6
<i>Experience</i>		
1 - 3 years	10	25,6
4 - 6 years	17	43,6
7 - 9 years	8	20,5
10+ years	4	10,3
<i>Start year of education</i>		
2020 to 2022	14	35,9
2017 to 2019	16	41,0
2014 to 2016	6	15,4
2011 to 2013	2	5,1
Before 2010	1	2,6

3.2 Principal component analysis

To to determine if the subscales in this research population were the same as those of the original scales, a principal component analysis was done for Authenticity, Reflection, Collaboration and Experiential Learning. Due to the low amount of respondents, the subscales were calculated on the chosen scales, not on the questionnaire as a whole. Because it is expected that the components will relate with each other, the rotation method of Oblimin with Kaiser Normalization was used. Only factor loadings of 0,5 and higher were used.

3.2.1 Authenticity

The scale Authenticity had ten items and had four subscales in the original scale. For this scale, no alterations were needed to form two components: ‘Orientation’ (AO) with items 1 to 5 and 8, and ‘Context’ (AC) with items 6, 7, 9 and 10 (see Table 3). These two components explain 73% of the variance. These scales have hardly any resemblance with the original scales from Gulikers, et al. (2004). For example, there are items of the original subscale Physical context in both new components and the first component has items of three of the original subscales. The new subscale Orientation has items on how the tasks and theories in the programme resemble the tasks of an actual accountant. The subscale Context has items that refer to the context of the task and how well they are comparable to the context of an accountant.

Table 3

Pattern Matrix for Authenticity (n = 39)

Item	Component	
	1	2
The programme is oriented to my future profession of accountancy (ACA1)	0,958	
The programme is clearly oriented to professional requirements (ACA2)	0,951	
The programme prepares me for my future profession (ACA3)	0,893	
The programme represents an important part of the accountancy profession (ATA2)	0,753	
The programme resembles the tasks of a real accountant (ATA1)	0,611	
The context in which I have to perform the programme looks like the professional practice of an accountant (APC2)	0,605	
The context in which I have to perform the programme is realistic (APC4)		0,919
The context in which I have to perform the programme looks just like the real world (APC3)		0,845
^The programme differs from the tasks of a real accountant (ATA3)		0,790
^The context in which I have to perform the programme is fake (APC1)		0,563

[^] *This item was reversed coded.*

3.2.2 Reflection

The scale Reflection consisted of 16 items with four subscales in the original scale. In the first principal component analysis, item 11 (*I often reflect on my actions to see whether I could have improved on what I did*; RR3) was related to three of the five found components, all below 0,5. This item was removed from the principal component analysis. This resulted in a pattern matrix with four

components, where item 13 (*As a result of the programme I have changed the way I look at myself;* RCR1) had two factor loadings around 0,5, therefore this item was removed.

Table 4

Pattern matrix for Reflection (n = 39)

Item	Component			
	1	2	3	4
^In the programme, we do things so many times that I started doing them without thinking. (RHA2)	0,881			
^If I follow what the lecturer says, I do not have to think too much on this programme. (RHA4)	0,718			
^As long as I can remember handout material of the .programme, I do not have to think too much. (RHA3)	0,631			
^When I am working on the programme, I can do them without thinking about what I am doing. (RHA1)	0,572			
I often re-appraise my experience so I can learn from it and improve for my next performance. (RR4)		0,814		
I need to understand the material taught in the programme in order to perform practical tasks. (RU3)		0,810		
In the programme you have to continually think about the material you are being taught. (RU4)		0,794		
To pass the programme you need to understand the content. (RU2)		0,625		
The programme requires us to understand concepts taught by the lecturer. (RU1)		0,610		
I like to think over what I have been doing and consider alternative ways of doing it. (RR2)			0,943	
I sometimes question the way others do something and try to think of a better way. (RR1)			0,940	
During the programme I discovered faults in what I had previously believed to be right. (RCR4)				0,837
The programme has challenged some of my firmly held ideas. (RCR2)				0,763
As a result of the programme I have changed my normal way of doing things. (RCR3)				0,711

^ *This item was reverse coded.*

The third pattern matrix, with items 11 and 13 removed, had four clear components (see Table 4). These are: “Habitual action” (RHA) with items 1 to 4, “Understanding” (RU) with items 5 to 8 and 12, “Alternative methods” (RAM) with items 9 and 10, and “Critical Reflection” (RCR) with items 14 to 16. The four components explain 71% of the variance.

There are some similarities to the original scales. The new component RHA is the same as the subscale in the original scale from Kember et al. (2000). The other components are similar, but have a few items added or missing compared to the original subscales. The new subscale Understanding has items about how much understanding of the taught concepts is actually needed. The subscale Alternative methods has two items that both ask about if the respondent ever thinks about alternative methods for their own or other people’s methods. Finally Critical Reflection has items about how much the programme has changed their minds about theories taught in the programme.

3.2.3 Collaboration

A principal component analysis for Collaboration resulted in only one component. Five of the items had factor loadings with two or more components. After these items were removed, another item was related to two components. In the next analysis, there were four components found, but four items had no factor loadings with these components. When these items were removed, two items did not relate to the four components, which resulted in an analysis where an additional item did not relate to the components. Finally, another item had to be removed because it was related to two components, which means that 14 of the 31 items had to be removed due to lack of factor loading. Because the n of this research is low and because removing 14 of the 31 items leads to a lower content validity, the original five subscales of the Cooperative Learning Application Scale from Atxurra et al. (2015) are used. See Table 1 for an overview of the Cronbach alpha’s of these subscales. The subscales of this scale are: Positive Interdependence (CPI) (nine items), Interaction (CI) (four items), Social Skills (CS) (seven items), Group Reflection (CGF) (seven items) and Heterogeneity (CH) (four items). As these scales were not formed using Principle Component Analysis, how much these components explain the variance is not known.

3.2.4 Experiential Learning

The scale Experiential Learning had 12 items and the original scale had four subscales. The principal component analysis of the scale Experiential Learning resulted in two components, where item three (*The programme presents me with a "real world" experience*; ECE3) had two factor loadings below 0,5, so this item was removed from the analysis. In the second analysis, item 9 (*The programme makes me organize the course concepts into a meaningful format*; EAC3) had two factor loadings below 0,5, so this item was removed. After that, item 2 (*The programme gives me a concrete experience that helps me learn the course materials*; ECE2) had two factor loadings around 0,5, so this item was removed.

After item 2, 3 and 9 were removed, two clear components were seen (see Table 5). These two components explain 75% of the variance. This resulted in two subscales: “Experience and learning” with items 1, 4 to 8, and “Active Experimentation” with items 10 to 12. The latter component is the same as the subscale in the original scale. The other component is a combination of all other three original subscales. The subscale Experience and learning consisted of items about experience and how the programme assists in learning the concepts that belong to those experiences. Active experimentation has items about how to experiment with those concepts.

Table 5

Pattern matrix for Experiential Learning (n = 39)

Item	Component	
	1	2
The programme requires me to think how to correctly use the terms and concepts. (EAC1)	0,930	
The programme causes me to think how the course concepts are inter-related. (EAC2)	0,860	
The programme helps me relate my personal experiences to the content of this course. (ERO2)	0,855	
The programme aids me in connecting the course content with things I learned in the past. (ERO3)	0,790	
The programme assists me in thinking about what the course material really means to me. (ERO1)	0,588	
The programme provides me with a direct practical experience to help understand the course concepts. (ECE1)	0,532	
The programme makes it possible for me to try things out for myself. (EAE1)		-0,975
The programme permits me to actively test my ideas of how the course materials can be applied. (EAE2)		-0,921
The programme allows me to experiment with the course concepts in order to understand them. (EAE3)		-0,854

The subscales were constructed and the Cronbach’s alphas of the subscales were calculated (see Table 6). All subscales had a Cronbach’s alpha higher than ,78. This means that the Cronbach’s alpha is relatively high, considering the amount of items in the scales. The scales seem to be sufficient internal consistent enough (Taber, 2018), as all subscales had an alpha of 0,8 or higher, with exception of the subscales Reflection Habitual Action (which is 0,78) and Reflection Critical Reflection (which is 0,73).

Table 6*Cronbach's alpha of all subscales*

Subscale	Cronbach's α	Number of items
Authenticity		
Orientation (AO)	0,93	6
Context (AC)	0,83	4
Reflection		
Habitual action (RHA)	0,78	4
Understanding (RU)	0,81	5
Alternative methods (RAM)	0,90	2
Critical reflection (RCR)	0,73	3
Collaboration		
Positive interdependence (CPI)	0,91	9
Heterogeneity (CH)	0,94	4
Social Skills (CS)	0,90	7
Group reflection (CGR)	0,85	7
Interdependence (CI)	0,87	4
Experiential learning		
Experience and learning (EEL)	0,85	6
Active Experimentation (EAE)	0,92	3

3.3 Descriptive statistics after principal component analysis

The mean and standard deviation of all constructed subscales were calculated (see Table 7). For the scale Authenticity, the subscales are around the theoretical mean. The scale Reflection has three subscales above 3,54, which is above the theoretical mean, while the subscale Critical Reflection has an average of 2,85. This is the lowest mean of all subscales. Collaboration has scores from 3,06 to 3,51, with Positive interdependence having the lowest score and Interdependence the highest. The subscales of Experiential Learning are slightly above the theoretical mean. The mean and standard deviation of all items of the survey are found in appendix B.

Table 7

Mean and standard deviation of all subscales

Subscale	Mean	Std. Deviation
Authenticity		
Orientation	3,56	0,80
Context	3,23	0,77
Reflection		
Habitual Action	3,54	0,61
Reflection	3,79	0,52
Alternative methods	3,55	0,83
Critical Reflection	2,85	0,78
Collaboration		
Positive Interdependence	3,06	0,81
Heterogeneity	3,30	1,02
Social Skills	3,27	0,82
Group Reflection	3,30	0,73
Interdependence	3,51	0,82
Experiential Learning		
Experience and Learning	3,56	0,69
Active Experimentation	3,32	0,97

3.4 Spearman's

Using Spearman's correlation coefficient, the demographic data was compared with all other scales (see Table 8).

Table 8

Spearman's rho of demographics and subscales (n =39)

		Age	Gender	Experience
Authenticity	Orientation	ns	0,39*	-0,36*
	Context	ns	ns	ns
Reflection	Habitual Action	ns	0,44**	ns
	Understanding	ns	0,35*	-0,38*
	Alternative methods	ns	ns	ns
	Critical reflection	ns	ns	ns
Collaboration	Positive interdependence	ns	ns	-0,33*
	Heterogeneity	-0,43**	0,35*	-0,32*
	Social skills	-0,39*	ns	-0,35*
	Group reflection	ns	ns	ns
	Interaction	ns	0,32*	ns
Experiential Learning	Experience and learning	ns	0,49**	-0,34*
	Active experimentation	ns	0,32*	-0,33*

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

For age, only collaboration heterogeneity and collaboration social skills correlated significantly (-,43 and -,39). Gender correlates significantly for 7 of the 12 subscales, where women tend to respond that there is more authenticity, reflection, collaboration or experiential learning. Experience has (negative) correlations with seven subscales, which means that more experience means that they respond that there is less of the subscales of (the pillars of) experiential learning. Finally, start year of education had no significant correlations with any of the subscales.

The Spearman's correlation coefficient of all subscales was calculated (see Table 8). The subscales of Authenticity correlate with each other, and the same is true for the subscales of Collaboration. For reflection, only the subscales Habitual action and Understanding correlate with each other. The other subscales are not related.

The subscales of Authenticity correlate with all Collaboration subscales and with two of the four subscales of Reflection. Reflection does have some correlation with the Collaboration subscales, but it is not a clear-cut image. For example, the subscale Reflection Habitual Action has a significant correlation with Collaboration Social Skills and Collaboration Interaction, while the subscale Reflection Alternative Methods has a correlation with Collaboration Heterogeneity, Collaboration Group Reflection and Collaboration Interaction. Reflection subscales Critical Reflection and Understanding do not correlate with any other subscale of Reflection, but do correlate with all subscales of Collaboration. Of the subscales of Correlation, there is one which correlates with all other subscales: Correlation Interaction.

Furthermore, most subscales of the pillars of Experiential Learning (Authenticity, Reflection and Collaboration) have a correlation with the scale Experiential Learning. The subscales Authenticity Orientation, Reflection Understanding and Collaboration Heterogeneity have a high correlation of $>,60$. The subscale Reflection Alternative Methods has no correlation with either subscale. The subscales Reflection Habitual Action and Reflection Critical Reflection correlate with one subscale of Experiential Learning (Experience and Learning and Active Experimentation, respectively).



3.5 Interviews

There were seven interviews, four with trainees from a professional university and three from an academic university. According to the NBA (2022), 75% of all trainees have studied or study at an academic university for their theoretical programme, so the interviews are not representative. The responses from the trainees from a professional university are very different from the responses from the trainees from an academic university, so in the results, both views are described separately.

The interviews were focused on all pillars and experiential learning in general. See appendix A for an overview of all questions. After the interviews, the interviews were transcribed and summarized into five subjects: authenticity, reflection, collaboration, experimental learning and positive and negative elements.

3.5.1 Authenticity

Trainees mentioned that the authenticity of the programme differs per subject. For students who study or have studied at a professional university, the subject Tax is too elaborate to be authentic to the situation of an accountant. As one of the interviewees stated: “When you actually get a tax assignment at work, you’d ask a specialist”.

The trainees who study or studied at an academic university, indicate that there is not one subject specifically that is less authentic than others. They do mention that the theoretical programme tends to be on a much higher level than what they would work on in practice. A lot of subjects are taught on a very high level, while an accountant would not work on those cases alone or without the help of a specialist.

3.5.2 Reflection

In the interviews, the impression arose that reflection is not stimulated very much in the theoretical and in the practical programme, although students mention that it depends on the teacher and how much they emphasize that students should reflect. The students mention that the reflection is more targeted towards the assignments, not towards the task itself. They reflect on how to ‘get a good grade’ or ‘how to adapt to the assignment’s format rather than how they could or should improve.

3.5.3 Collaboration

Of the seven students participating in the interviews, only one mentioned that they had had group assignments in the theoretical programme, where the students worked on the same assignment. All other students said that they sometimes worked together, but that it was mostly voluntary or that the grade was not dependent on the work of others, only on their own reflection. Furthermore, students

mention that it is very hard to work together, as almost all students combine work and study, so it is hard to organize when to work together. Like mentioned for the theoretical programme, the practical programme did not have group assignments, although there is an 'intervision' group, which entails a group discussion about work subjects.

3.5.4 Experiential Learning

Some of the interviewed students who study at a professional university, are enlisted in the theoretical and the practical programme at the same time, which makes it easier to immediately practice the theoretical concepts that are learned. They do mention that most work has a very different form in the programme, compared to the actual reports and finished tasks as an accountant.

The students at academic universities start with the practical programme when they already finished the theoretical programme. This does not support the application of the learned theoretical concepts. One student said that testing new ideas is only possible when you strictly follow all existing rules.

3.5.5 Positive and negative elements

Students from a professional university mention that a good element is that students are taught in depth knowledge about the subjects. Even if this knowledge isn't immediately used, it is good to know the concepts. Two students mentioned that having to work on higher level tasks in the programme ensures that their employer provides these tasks. This means that the students advance more quickly in their job. One student mentioned that even though the role of an advisor is not a reflection of the current job of an accountant, being thought this may change the work environment, as the students take their experience with them in their job. Negative elements that are mentioned by students from a professional university is that the programme emphasizes too much on certain tasks and subjects, for example tax.

Students from an academic university mention that they are taught in depth knowledge, which is useful in practice. Even if the knowledge does not completely line up with the practical tasks, understanding the concepts helps in completing these tasks. One student mentioned that it helps that teachers worked in accounting, so they are familiar with the actual tasks of an accountant. A negative element is that a lot of what is taught is on a much higher level than they will use at that moment. One student said that the theoretical programme teaches on the level of a 'manager' in an accounting company, not as a starting accountant. The practical programme is called 'redundant' by two students. They explain that the practical programme doesn't teach new concepts, but that the trainee only has to 'prove' that they are able to complete certain tasks by writing down what they did.

4. Discussion

The goal of this study was to find out how to improve the integration of theory and practice in accountancy education by further implementing Experiential Learning. The three pillars of Experiential Learning as proposed in the mARC-model were used as a model to get more insights. There were six research questions, which will be answered here.

4.1 Question 1: What is the students' perception of authenticity in the curriculum of the post-initial theoretical and practical programme?

The means for the subscales of Authenticity were 3,56 for Orientation and 3,23 for Context. This means that they somewhat agree with the statements given about Authenticity, as the mean is around the theoretical mean (3) of the distribution. The students have indicated in the interviews that the authenticity depends on the subject in the programme. Students of professional universities indicate that the subject Tax is not really authentic, as accountants do not need as much information about this subject. They usually work together with a tax specialist on tasks like the ones practiced in the programme. For students of academic universities it is not so much one subject, but the theoretical programme as a whole is on a much higher level than what recently graduated accountants do. Previous research has suggested that implementing authenticity in the programme, can not only improve learning, but also improve the student satisfaction of the programme (Pallant, et al. 2022). The organisation of the programme by different organizations can make it harder to improve the authenticity of the programme, as previous research suggested that lacking coordination between different organisations is a reason the programme is perceived as less authentic (Ajjawi, et al., 2020).

4.2 Question 2: What is the students' perception of the extent to which reflection is stimulated in the curriculum of the post-initial theoretical and practical programme?

The means of the subscales Habitual Action, Reflection and Alternative Methods varied between 3,54 to 3,79. The subscale reflection had a mean well above the theoretical mean (3,79). The subscale Critical Reflection had a mean of 2,85. This means that students somewhat agree that critical reflection is not very present in the programme, while they did think the other types of reflection were present.

In the interviews, students stated that reflection in the programme is present, although it is more geared towards the assignments than the tasks itself. Which means that students reflect on how to get a good grade, not on how to improve their knowledge and skills. This study only focused on the students' perception of the reflection in the programme. Other studies (see e.g. Radović et al., 2021; Ghanizadeh, 2017) that focussed on how the students reflect, stated that the level of reflection (e.g. critical reflection is higher than habitual action) is important and that students tend to stay on the lower levels of reflection unless asked for higher levels by their teachers or as an assignment. Another study found that students do not have the skills to use critical reflection, which means they have to be

instructed and supported to do so (Sheppard, et al., 2022). The results of the survey suggest that in accountancy education critical reflection, one of the higher levels of reflection, is not as present as the lower levels of reflection. If students were instructed in the programme to use more critical reflection, higher levels of learning outcomes may be expected (Radović, 2022).

4.3 Question 3: What is the students' perception of the extent to which collaboration is stimulated in the curriculum of the post-initial theoretical and practical programme?

The means of the subscales Collaboration varied between 3,06 and 3,51. This means that students are neutral to somewhat agreeing to the statements that collaboration is present in the programme. Interdependence had the highest mean of 3,51, which is above average, while Positive Interdependence was around the theoretical mean. Interdependence solely asked about the amount of contact students have with other students. Positive Interdependence, however, asked about the amount of dependence students had on other students to learn.

In the interviews, students elaborated that collaboration is hardly present in the programme. When students work together, it is voluntarily, or the assignment is only to reflect on the collaboration and there is no assessment of the collaboration by a teacher. Vygotsky stated that critical thinking happens in a social and collaborative activity of dialogue (Grey, 2006). This means that by stimulating more collaboration, students can learn in a social environment, which translates in more critical thinking on their own too. Previous research suggests that collaboration in combination with reflection (collaborate reflection) stimulates learning in students (Prilla, et al., 2020).

4.4 Question 4: How are the students' perceptions of authenticity, reflection and collaboration correlated with each other and with overall perception of Experiential Learning?

The two subscales of Authenticity were related. The subscales of Reflection did not relate with each other, with exception of the subscales Habitual Action and Reflection which are related. All five subscales of Collaboration were related with each other.

This study found that the pillar Authenticity and the pillar Collaboration were related, based on the relation between all subscales of Authenticity and all subscales of Collaboration. There were two subscales (Habitual Action and Understanding) of Reflection that were related to the subscales of Authenticity. The relation between Reflection and Collaboration is more complicated, as two subscales of Reflection (Understanding and Critical Reflection) relate to all subscales of Collaboration and the other two subscales of Reflection relate to two to three subscales of Collaboration. As stated in paragraph 4.2, the amount of Critical Reflection is considered less present in the programme than the other levels of reflection. In the interviews, the students elaborated that the reflection that is present in the programme is geared towards the assignment and not the content of the programme. Therefore, it might be that only the higher levels of Reflection, which are focussed on the content, have a strong relation with the pillars Authenticity and Collaboration.

The three pillars, Authenticity, Reflection and Collaboration were related with the Experiential Learning scale, although two of the subscales of Reflection do not have a relation to one or two of the subscales of Experiential Learning. The subscales of Experiential Learning do not reflect the four steps of Experiential Learning: Concrete Experience, Reflective Observation, Abstract Conceptualization and Active Experimentation. The first three steps are joined together in one subscale: Experience and Learning. This might have implications for the relations between the four steps and the pillars of mARC, as it is theorized that the pillars stimulate the four steps of Experiential Learning (Radović, et al., 2020b). It is possible that the way reflection is stimulated, is not as it is meant in the pillars of mARC. Students are supposed to contemplate on their previous knowledge and experience (Radović et al., 2020b), not on the assignment itself. This may explain the lack of relation between some of the subscales of Reflection and the subscales of Experiential Learning, as Reflection in the mARC-model is meant as a reflection the student's own knowledge and skills (Radović, 2022).

Some subscales of the pillars have a strong relation with the subscales of Experiential Learning, like Authenticity Orientation, which could be an indication that in the validation process the meaning of the scale Experiential Learning has been changed in comparison to the individual steps of Experiential Learning.

4.5 Question 5: Do students' demographic factors affect their perceptions of authenticity, reflection and collaboration?

Students were asked about their age, gender, the amount of experience they have in accountancy and the start date of their study. Women tend to view the pillars and experiential learning as more present in the programme than men. Experience is correlated negatively, so more experience means they respond that the pillars and experiential learning are less present in the programme. This may mean that more experience in the field means that they can see better what they missed within their programme. As the start date of the study does not correlate with the pillars and experiential learning, it does not suggest that the programme has incorporated more or less pillars of experiential learning in the last few years.

4.6 Question 6: What positive and negative elements do students and educators perceive regarding the separate theoretical and practical programmes?

In the interviews, students have mentioned some positive factors of the programme. The students find that the programme offers in depth knowledge that is useful for future use. Some of the skills that are taught, may not be used instantly, but it is possible that the emphasizing of these skills (e.g. advising customers) changes the accountancy profession for the better, as there are more students who are able to practice these skills when they have finished their study. Another positive element is the teachers in the theoretical programme, as students mention that they have good knowledge about the actual practice, as most of them have worked or still work in practice.

Students mention the amount of knowledge that they have to learn as a negative element of the programme. A lot of what is taught is not needed as a starting accountant, or not needed at all, because in “real life” an accountant would not work on similar tasks on their own, but would ask a specialist. Another negative element, that is specifically mentioned by students from academic universities, is that the practical programme is not necessary for learning. The practical programme is described as “writing down what you already did”, while not learning anything new.

4.7 Limitations and practical implications

This study has some limitations that need to be addressed. The first limitation is that the amount of participants is low. The survey was sent multiple times to all enlisted students of the practical programme, but only 42 students filled in the complete survey. It is possible that the amount of respondents is influenced by the Covid-19 pandemic and the fact that students tend to have a high workload with work and their study (De Vries & Herrijgers, 2018). The interviews were meant to get more in-depth information, but the same limitations are true for finding respondents for the interviews. There were multiple ways used to find new respondents, but it was proven very hard to find people who were able and willing to be interviewed.

The scales needed to be validated, as these had not been validated within the specific context of accountancy education in the Netherlands. With the small amount of respondents, the use of non-parametric testing was necessary. However, there is no alternative for a principle component analysis, so this form was chosen nevertheless. Furthermore, the only possible way was to conduct a principle component analysis of every scale. This led to new subscales, or slightly altered subscales. Therefore the conclusions should be weighted with caution. Future research should focus on the validity of these new subscales in this or a similar context.

Some items were removed during the principle component analysis. Two items were removed from Reflection, one from the original subscale Reflection and one from the subscale Critical Reflection. The original subscale ‘reflection’ is not reflected in the new scales, as only two of the four items are still represented in one subscale (Alternative methods) and one item is part of the new subscale Understanding. This means the levels of reflection, as reflected in the original scale (Kember et al., 2000), are different in the new scale and that the third level ‘reflection’ has been changed entirely.

For the scale Experiential Learning, three items of the original scale of 12 items were removed, two of which were from the original subscale Concrete Experience and one from Active Experimentation. The new subscales do not represent the steps of Experiential Learning, but only show two steps, the first one being learning new concepts to using these concepts in situations and the second one is active experimenting. Compared to the pillars, the new scales still focus on other subjects, as the items of the scales are focused on what students do to learn.

Moreover the small amount of respondents require some caution with generalisations of the quantitative findings. However, the data that was found in the interviews do confirm the quantitative findings, although the interviews show less characteristics of the pillars than what the survey outcomes suggested. In the interviews, students stated that they had negative experiences with the programme and state that the theoretical programme is too focused on in-depth knowledge and the practical programme feels unnecessary, which makes the programme less authentic. Furthermore, the students stated that reflection was focused on 'getting a good grade', rather than reflecting on students' performance. Finally, when asked about collaboration, most students indicated that they felt collaboration was voluntarily and not really stimulated by the programme. A more dynamic relation between the theoretical and practical programme could improve the students' experience, especially as these two programmes are organized by two separate organisations. A more integrated relationship can improve job performance as well as professional knowledge (Kraiger & Ford, 2021). Experiential Learning is a method to improve the integration between theory and practice (Roberts, 2018). The pillars of mARC were used in this study as a framework, where the pillars are a stimulation of Experiential Learning. This study found a relation between the pillars of mARC and Experiential Learning, so it is theorized that in line with other research (e.g. Radović, 2022), the improvement of the pillars of mARC may lead to a programme with a more integrated theory and practice.

To improve the authenticity of the programme, the amount of information that is taught, could be greatly limited. It is also possible that the information that is taught, is taught within a realistic context and students are shown how the information is relevant. For example, to improve the authenticity of Tax in the programme, students could work together with students or experts of Tax, which is also an improvement of the pillar Collaboration.

Further research is needed to investigate what level of reflection is currently stimulated. Based on the study by Radović et al. (2021) higher reflection leads to more learning outcomes than lower level reflection and in this study the amount of critical reflection in the accountancy programme seemed less present than the other levels of reflection, while critical reflection is the highest level of reflection.

Collaboration is important as learning and reflecting on learning is done within a social context, which means that if collaboration is a greater part of the educational context of the programme, better learning outcomes are expected (Radović, 2022). In this study it was found that the subscales Collaboration were related to both the other two pillars and Experiential Learning. Improving the social context may also help to stimulate the other two pillars, which in turn may stimulate Experiential Learning.

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Appendices

Appendix A Questionnaire

Demographic information:

Name interviewed:

Age:

RA/AA:

University TP: (finished: ...)

Started PP:

Work experience: where / how long

Authenticity

1. (ACA) How do the assessments prepare you for your future profession? / Hoe bereiden de opdrachten je voor op je toekomstige beroep?
2. (ATA) How do the tasks of the assessments differ from the tasks of a real accountant? / Op welke manier verschillen de taken van de opdrachten van die van een echte accountant?
3. (APC) In what way differs the context in which you have to perform the assessments from the real world? / Op welke manier is de context waarin je de opdrachten dient te doen, anders dan in de echte wereld?

Reflection

4. (RHA) Can you elaborate on how much in the programme you can do without thinking about what you are doing. / Hoeveel in het programma kun je doen zonder dat je er over na hoeft te denken wat je doet?
5. (RU) How much do you need to understand the material taught in the programme in order to perform practical tasks? / In hoeverre moet je de theorieën die je worden aangeleerd echt begrijpen om praktische taken te doen?
6. (RR) How often do you question the way others do something and try to think of a better way? / Hoe vaak bevraag je de manier waarop anderen iets doen en bedenk je een beter manier?
7. (RCR) In what way has the programme challenged some of your firmly held ideas? / Op welke manier heeft het programma ideeën of theorieën die je had, "gechallenged"?

Collaboration

Subquestion: How often do you work together with other students? / Hoe vaak werk je samen met medestudenten?

8. (CPI) When you work in groups, can you elaborate if you need the ideas of all of the team members in order to achieve success? / Wanneer je in groepen werkt, in hoeverre heb je de ideeën van alle teamleden nodig om succes te bereiken?
9. (CH) How diverse are the group members? / Hoe divers is de groep medestudenten?
10. (CS) How does the programme teach to properly manage in-group situations? / Hoe leert het programma je om te gaan met groepssituaties?
11. (CGR) What tools does the programme provide to reflect on how you are working in the group? / Wat voor tools geeft het programma je om te reflecteren op hoe je werkt met een groep?

12. (CI) In the programme, how much interaction with your fellow group members is necessary in order to carry out the tasks? / Hoeveel interactie in het programma heb je echt nodig met groepsleden om de opdrachten te voltooien?

Experiential Learning

13. (ECE) Can you elaborate on the programme presents you with a “real world” experience? / Kun je toelichten in hoeverre het programma je een ervaring geeft zoals in de “echte wereld”?
14. (ERO) How does the programme assists you in thinking about what the course material really means to you? / In hoeverre helpt het programma je in nadenken over wat de materialen daadwerkelijk voor jou betekenen?
15. (EAC) How does the programme make you organize the course concepts into a meaningful format? / In hoeverre helpt het onderwijs je om de concepten die je daarin leert, om te zetten naar een betekenisvolle format?
16. (EAE) How does the programme permits you to actively test your ideas of how the course materials can be applied? / Op welke manier kan je in het programma je ideeën over hoe de concepten toegepast kunnen worden uittesten?

Appendix B Mean and standard deviation of all items

	Mean	Std. Deviation
1 ACA1 The programme is oriented to my future profession of accountancy	3,74	,818
2 ACA2 The programme is clearly oriented to professional requirements	3,79	,833
3 ACA3 The programme prepares me for my future profession	3,51	,885
4 ATA1 The programme resembles the tasks of a real accountant	3,44	1,046
5 ATA2 The programme represents an important part of the accountancy profession	3,56	1,046
6 ATA3 ^The programme differs from the tasks of a real accountant	3,18	,914
7 APC1 ^The context in which I have to perform the programme is fake	3,36	1,063
8 APC2 The context in which I have to perform the programme looks like the professional practice of an accountant	3,33	,955
9 APC3 The context in which I have to perform the programme looks just like the real world	3,13	,894
10 APC4 The context in which I have to perform the programme is realistic	3,26	,910
1 RHA1 ^When I am working on the programme, I can do them without thinking about what I am doing.	3,62	,847
2 RHA2 ^In the programme, we do things so many times that I started doing them without thinking	3,56	,680
3 RHA3 ^As long as I can remember handout material of the programme, I do not have to think too much.	3,56	,821
4 RHA4 ^If I follow what the lecturer says, I do not have to think too much on this programme.	3,44	,821
5 RU1 The programme requires us to understand concepts taught by the lecturer.	3,72	,647
6 RU2 To pass the programme you need to understand the content.	4,13	,732
7 RU3 I need to understand the material taught in the programme in order to perform practical tasks.	3,62	,847
8 RU4 In the programme you have to continually think about the material you are being taught.	3,69	,655
9 RR1 I sometimes question the way others do something and try to think of a better way.	3,59	,818
10 RR2 I like to think over what I have been doing and consider alternative ways of doing it.	3,51	,914
11 RR3 I often reflect on my actions to see whether I could have improved on what I did.	3,77	,627

12 RR4 I often re-appraise my experience so I can learn from it and improve for my next performance.	3,79	,522
13 RCR1 As a result of the programme I have changed the way I look at myself.	3,10	1,095
14 RCR2 The programme has challenged some of my firmly held ideas.	2,56	,852
15 RCR3 As a result of the programme I have changed my normal way of doing things.	2,87	,978
16 RCR4 During the programme I discovered faults in what I had previously believed to be right.	3,10	1,071
1 CPI1 In the programme, each group member has to make an effort in order to help the group achieve their results.	3,10	1,046
2 CPI2 The better each group member carries out their task, the better the group's grades will be.	3,41	1,141
3 CPI3 When we work in groups, we have to make sure that we all learn.	3,08	1,061
4 CPI4 In a group we assess the performance of each one of us and we provide guidelines for improvement.	2,90	,940
5 CPI5 In the programme I need the help of my fellow group members in order to fulfill the tasks.	2,82	1,097
6 CPI6 When we work in groups, each member has a task to contribute to.	3,36	1,063
7 CPI7 When we work in groups, we can't fulfill a task unless everybody contributes.	2,74	1,117
8 CPI8 When we work in groups, we need the ideas of all of us in order to achieve success.	2,79	1,128
9 CPI9 When we work in groups, we have to share materials or information in order to complete the task.	3,36	1,038
10 CH1 The members of my group have skills and abilities that complement each other.	3,28	1,123
11 CH2 Group members have different capabilities that facilitate the completion of the tasks.	3,26	1,093
12 CH3 In our group we have a diversity of views, which helps us in our learning.	3,33	1,108
13 CH4 Group members are diverse in a number of ways, which enriches us.	3,33	1,108
14 CS1 The programme teaches us to properly manage in-group situations.	2,95	1,075
15 CS2 The programme provides us with guidelines to solve conflicts that might arise in the group.	2,97	1,063
16 CS3 In the programme, one of the goals is to learn how to engage with others.	3,31	1,173

17 CS4 All the group members together, we identify which actions help the group and which don't.	2,79	1,080
18 CS5 In the programme, we exercise our social skills.	3,46	1,097
19 CS6 In the programme, we have the opportunity to share our opinions with group members.	3,79	,894
20 CS7 In the programme, respect in group relationships is encouraged.	3,59	,880
21 CGR1 The programme helps us identify and define the difficulties in group work.	3,15	1,113
22 CGR2 During the programme, we have time to reflect on our ways of working in the group and how to improve.	3,18	1,023
23 CGR3 In the programme the lecturers propose activities which encourage individual reflection on learning.	3,44	,912
24 CGR4 The programme provides us with tools for us to reflect on how we are working in the group.	3,00	1,026
25 CGR5 As we work, we receive feedback from the lecturers in order to improve.	3,49	,997
26 CGR6 The programme encourages us to freely express our points of view.	3,41	1,044
27 CGR7 The lecturers in the programme monitor the tasks fulfilled by the group and each of the group members, and helps us improve.	3,41	,938
28 CI1 The programme allows me to interact with my fellow group members.	3,77	,902
29 CI2 In the programme, interaction with my fellow group members is necessary in order to carry out the tasks	3,21	1,031
30 CI3 The programme creates opportunities for us to interact with others.	3,54	,942
31 CI4 In the programme we communicate and share information with fellow group members through diverse media (face-to-face, online).	3,51	,970
1 ECE1 The programme provides me with a direct practical experience to help understand the course concepts.	3,64	,811
2 ECE2 The programme gives me a concrete experience that helps me learn the course materials.	3,46	,822
3 ECE3 The programme presents me with a "real world" experience.	3,36	,959
4 ERO1 The programme assists me in thinking about what the course material really means to me.	3,23	,902
5 ERO2 The programme helps me relate my personal experiences to the content of this course.	3,44	,821
6 ERO3 The programme aids me in connecting the course content with things I learned in the past.	3,62	,782
7 EAC1 The programme requires me to think how to correctly use the terms and concepts.	3,77	,872

8 EAC2 The programme causes me to think how the course concepts are inter-related.	3,64	,873
9 EAC3 The programme makes me organize the course concepts into a meaningful format.	3,49	,790
10 EAE1 The programme makes it possible for me to try things out for myself.	3,36	1,063
11 EAE2 The programme permits me to actively test my ideas of how the course materials can be applied.	3,28	,944
12 EAE3 The programme allows me to experiment with the course concepts in order to understand them.	3,31	1,104