# Preparing Study Resources: Research on the suitability of a manual as a study aid for IT Tallaght Accounting Students

By

Loretta Kyne

A dissertation by practice submitted in partial fulfilment of the requirements for MA in Training and Education (QQI)

Centre for Promoting Academic Excellence

Griffith College Dublin

August 2017

I hereby certify that this material which I now submit for assessment on the programme of study leading to the award of MA in Training and Education, is my own; based on my personal study and research, and that I have acknowledged all material and sources used in its preparation. I also certify that I have not copied in part or whole or otherwise plagiarised work of anyone else, including other learners.

Signed: ___Loretta Kyne_____ Student number 2899494

Date: __22/8/2017_____

***Abstract***

***This dissertation studies the suitability of an accounting manual as a study aid for IT Tallaght accounting and finance students. Research of the literature was carried out to assess the pedagogical approaches to be used in preparing this resource. Sample chapters were written based on that literature review and the chapters were then used as a resource in class with feedback on their appropriateness being obtained from students. Students were surveyed to answer the research questions as to the suitability of such a manual as a study resource for independent learning and the appropriateness of the approaches used therein for the learning needs of students. Student feedback overwhelmingly favoured the compilation of such a resource and the approach used in the sample chapters was positively received with students finding that the inclusion of many worked examples gave them the "scaffolding" they needed to move from novice learners to more expert learners in the topics covered. Further positive feedback was also received together with some suggestions from students for additional material to be included therein. The availability of this resource for IT Tallaght students will provide them with a resource useful in encouraging their learning both now and in the "real world" when they put that learning into practice.***

# Abbreviations used

| | |
|---|---|
| HE | Higher education |
| EU | European union |
| UK | United Kingdom |
| IOT | Institute of Technology |
| ITT | Institute of Technology Tallaght |
| BBS | Bachelor of Business Studies |
| SRL | Self-regulated learning |
| ZPD | Zone of proximal development |
| CLT | Cognitive Load theory |
| CPD | Continuing professional development |
| IAS | International Accounting Standard |
| IFRS | International Financial Reporting Standard |
| IASB | International Accounting Standards Board |

# Contents


| | | | Page |
|---|---|---|---|
| 1 | Introduction | | 7 |
| 2 | Why a manual? | | 10 |
| 3 | Approach to writing the manual | | 13 |
| | 3.1 | Zone of proximal development | 14 |
| | 3.2 | Cognitive Load theory | 15 |
| | 3.3 | Approaches to learning | 17 |
| | 3.4 | Concept approach to teaching International Accounting Standards | 19 |
| | 3.5 | Use of accounting textbooks | 20 |
| | 3.6 | Impact of literature on the approach to writing the study manual | 22 |
| 4 | Methodology | | 23 |
| 5 | Analysis of data | | 26 |
| 6 | Conclusion | | 35 |
| 7 | Bibliography | | 36 |
| 8 | Appendices | | 41 |

## Acknowledgements

I would like to thank the following who have helped me throughout the compilation of this dissertation:
My supervisor, Lloyd Scott, for his assistance, direction and feedback.

My colleagues in IT Tallaght for their support and advice, particularly Dr Garvan Whelan and Pasqueline Tierney, and also former colleague Simon Magennis.

The third year BBS Accounting and Finance students in IT Tallaght 2016/2017 who gave wonderful feedback on the sample chapters and without whom this dissertation would not be possible.

## 1. Introduction

"The practice of accounting requires a skill set that is different from that required in other disciplines" (Hart and Wang 2016, P94) and employers who recruit accounting graduates now expect them, to not only have technical accounting knowledge, but to be able to analyse and interpret both financial and non-financial information. (Pan and Pereira 2012). These required capabilities are evidence of a change in the type of work carried out by accountants in recent times where previously the emphasis was more on the "quantitative recording, financial calculation and historical accounting for stewardship of resources" (ibid, P.92). Combined with these changes in the accounting profession, significant changes in higher education (HE) have occurred and "Higher education internationally has witnessed massive growth in recent decades, with participation rates of 50% and above being relatively commonplace." (Keane 2011, P.707). Ireland is no exception to this trend and participation rates have increased to 56% (Expert group on future funding for higher education 2015) and beyond. Further change in the HE sector has arisen from the Bologna Process which started in 1998 as a result of an agreement between 4 EU countries – France, Germany, Italy and the UK. One year later, in 1999, the Bologna declaration was signed by 29 countries including Ireland. The aim of this declaration was multi-dimensional but included the improvement of mobility of students between third level institutions. The impact of these changes in HE has been greater diversity of the student cohort in the third level class room where "the range of ability within classes is now considerable" (Biggs and Tang 2011, P.4). These differences are further impacted by the "special needs" of international students learning through a second language and often suffering from "cultural isolation" (ibid P.4).

Irish HE is divided into two sections – universities occupying one section and the Institutes of Technology (IOTs) and private colleges occupying the other. In Irish HE, "the nature of demand and points required for entry mean that universities are much more selective in terms of admissions than institutes of technology" (McCoy and Smith 2011, P.254). This means that students attending IOTs tend to have lower points and are often less able to cope with the demands of third level.

Institute of Technology, Tallaght (ITT) runs a Bachelor of Business Studies(BBS) programme in Accounting and Finance. Students generally follow a four-year

Honours degree programme whether studying on a full time or part time basis. Normally, a cohort of full-time students enters the four- year programme directly from school. Other students on both the full and part time courses are mature learners studying at third level who may have been previously employed for a number of years. Finally, a cohort of students gains direct entry to the third year of the degree programme having previously completed a two - year accounting technician programme. Most of this latter group of students have previously been out in the workplace and are now anticipating improving their future job prospects by completing a degree.

In addition to the variety of backgrounds and prior knowledge of students coming into the third year of the degree programme, the student group includes both Irish and international students. Sikkema and Sauerwein (2015, P.79) advise us that

> "If accounting educators intend to meet the demands of a globalized accounting profession and higher education system, then the interaction of culture and learning must be appropriately considered and addressed."

Given the many changes in the Accounting profession and HE in recent times, it was decided to develop a study resource for ITT accounting students. This study resource will be particularly aimed at third year students with the purpose of facilitating the face to face teaching of the subject where the underlying principles and practice of company accounts and accounting standards studied in first and second year will be revisited and covered in more detail. This study aid will also encourage self-regulated learning (SRL) by students.

The purpose of this research is to consider the appropriateness of an accounting manual as that study resource and to obtain guidance on the form that the study manual should take. Research was based both on the background literature review, followed by a survey of students taking the programme and from a lecturing colleague where the developed material was made available to both the lecturer and students.

Given the "cumulative nature of accounting material" (Stice and Stice 2006, p.85), it was considered vital that all students be familiar with relevant material covered, in some cases prior to their entering the programme. "Studies in many disciplines show that a learner's prior knowledge" is a significant indicator of future comprehension of

material (Tan and Laswad 2015, P.389) and the addition of this manual as a resource for these students will improve their knowledge of material previously covered thereby assisting them in learning new material.

The approach taken was to write the three chapters, included in Appendix 5, whilst being cognizant of the relevant literature. This task was carried out between December 2016 and February 2017. The three chapters were then used as class material with both fulltime and part time students and following that period of instruction during March and April 2017, students were surveyed to obtain their feedback on the sample chapters.

The necessity of this study resource arises mainly from the varied routes of entry of students into the third year of the BBS in Accounting and finance programme. To ensure all students are aware of what has previously been studied and have a basis for building further knowledge of the topic of company accounts and International standards, this study resource is being compiled based on the research carried out and will help these students throughout their remaining studies. It will also be a useful tool for those who take up a career in the accounting profession.

## 2. Why a manual?

The requirement for this study resource derives from a range of needs. The current system of text book usage for the financial accounting modules in the ITT Accounting degree programme, though appropriate for each individual year, is not compatible for usage over the four years of the degree. Much of the material covered in each semester builds on that covered in the previous semesters. Students currently use different text books in first year, second year and a final textbook in third and fourth year. The purpose of this manual is not to replace those text books but rather to complement them. It is intended that this manual will be used by students, largely in their own time, to revise and review material covered in previous semesters, as an additional aid to study the more difficult material being covered in the current year and to provide the opportunity to review some material in advance of studying it in class. The availability of this manual is considered particularly important as an aid to smoothing the transition of students coming from the accounting technician course into year 3. It will bring together students' prior knowledge of company accounts and related accounting standards, allowing them to link that knowledge with new material. This builds on a constructivist approach to learning where:

> "New ideas and experiences are matched against existing knowledge, and the learner incorporates these to make sense of the world." (Learning Theories 2016)

The study manual will also be a resource that students can use when they graduate, to assist them in the practical application of material covered therein.

Module lecturers will be able to use the manual to supplement material in the current text books. They together with the head of department, have recognised the need for additional study resources to use with the existing textbook. Students in previous years have given feedback that the text book does not give sufficient guidance on the correct approach to the many complex examples studied at this level. No alternative textbook has been found to better satisfy these needs and so the addition of this resource is intended to fill this gap. As the manual is to be used in class it will be made available to students both in hard copy and on moodle[1].

[1] Moodle: Modular Object-oriented Learning Environment – this is a "learning platform" which allows lecturers to create individual course learning environments (moodle.org)

Accounting is a very practical subject and being able to read and assimilate information from different parts of an example are important skills in such a process. Using an electronic version of the manual would make these tasks more difficult for the learner and so the hard copy version was deemed to be more suitable for students in these circumstances. As highlighted by Nicholas and Lewis (2011, p353), many students who were given access to free e-books still preferred the print version as they felt they “better fit their learning style”.

This manual is important in recognising and satisfying the different learning styles of students. Although lecturers aim to make the classroom as interesting a place as possible with diverse tasks being carried out where feasible, invariably a significant portion of lectures involve students in a passive way. The third year of the BBS progamme in ITT is an important year in the context of exemptions from accounting bodies and this coupled with the pressure of syllabus coverage means that students often spend a significant amount of time taking notes on the theory of accounting standards and following examples solved by the lecturer. Cameron et al (2015, P.219), warn us that “the way students learn is important, as instructors need to deliver the material in the most appropriate manner in order to achieve the appropriate outcomes for accounting graduates”. The addition of this manual should encourage all students to take a more active approach to their learning and will encourage active learners to engage in SRL techniques. This active approach will be encouraged through the wide variety of examples available in the study manual for class room and independent study. Tan and Laswad (2015, P.384) highlight the need for instructors to “diversify learning and assessment approaches as one single type of learning and assessment may disadvantage some students over others”

Finally, the study manual will include examples considering a combination of topics typical of both real-life situations and exam questions. This type of example is not available in the current text book and the addition of such examples will be important in preparing students not only for exams but also for the workplace. The “End of Section Example” in Appendix 5 is an example of this type.

The requirement for the study resource to be in the form of a manual stems from the need for extra material which is not included in the existing textbook or similar textbooks. This need has been recognised by lecturers and students alike. Students

need to be able to easily look back at relevant material covered in previous semesters to ensure that new material is built on a solid base and a hard copy version of the manual is suitable for this purpose. The inclusion in the study manual of a range of examples both worked and others for students to solve themselves, will be of benefit particularly to students who like to actively involve themselves in their learning.

## 3. Approach to writing the study manual

Research of the relevant literature was carried out to gain an understanding of the pedagogical approach that would be required in a manual which would be used largely by students in their own time but also, to a limited extent, within the classroom. From this review, a number of themes emerged which were important in the preparation of a study tool for accounting students:

| **Pedagogical approach** | **Outline of approach** | **Seminal author** | **Work** |
|---|---|---|---|
| Vygotsky's zone of proximal development | Teaching should focus on the gap between what a learner can achieve on his/her own and that which he/she can achieve with assistance. | L.S. Vygotsky | Mind in society: the development of higher mental processes |
| Critical load theory | This theory is based on the idea that a person's working memory has limited capacity to process new material | J. Sweller | Cognitive load during problem solving: Effects on learning |
| Self-regulated learning | This concept emphasises the importance of learning carried out by the students themselves, while also assessing their own learning needs. | P. Pintrich. | A process oriented view of student motivation and cognition |
| Active learning | Active engagement of the student in the learning process | C. Bonwell and J. Eison | Active learning: Creating excitement in the classroom |
| Concept based approach | Approach to teaching International Financial Reporting Standard that starts with basic underlying rules | Barth M. | Global Financial Reporting: Implications for US academics |

These approaches are detailed below:

### 3.1 Zone of proximal development

The zone of proximal development (ZPD) as theorised by Vygotsky (1978, P. 86) is:

> "the distance between the actual development level as determined by independent problem solving and the level of potential development as developed through problem solving under adult guidance or in collaboration with more capable peers"

This theory gives guidance on the approach to instruction. To successfully teach students, it is necessary to start by considering their existing knowledge (Harland 2003). This aligns with constructivist learning theory which posits that through linking new knowledge to their existing knowledge, learners construct their own "subjective representation of objective reality" (Learning-theories.com 2016). Having taken cognisance of students' existing knowledge, the teacher then needs to set tasks that students can complete with assistance - using their existing knowledge and assistance from the teacher or other sources.

Vygotsky's theory was concerned with the development of young children but a number of researchers have sought to adapt his theory for teaching older students, including teaching at third level. Wass and Golding (2014) indicate that by getting students to work on tasks within their zone of proximal development and by ensuring that assistance is available to help them, students will learn to carry out these tasks on their own. This assistance is referred to as scaffolding:

> "the process of providing higher levels of initial support for students as they entered the ZPD with the gradual dismantling of the support structure as students progressed towards independence" (Harland 2003, P.268)

As mentioned, Vygotsky's theory was developed in relation to small children and did not consider assistance that can be garnered from textbooks, worksheets and other written resources, as well as technological resources (Fani and Ghaemi, 2011). Such resources would be relevant in a HE context as alternative sources of assistance together with help from a teacher or more able peer. (Wass and Golding, 2014). The study manual being developed is intended as a type of "scaffolding" for students which through the guidance provided therein will help students to understand and assimilate new material.

### 3.2 Cognitive load theory

Cognitive load theory (CLT) is an instructional design approach that “leverages what has been learned about human cognitive architecture to improve instructional design” (Johnson and Slayter 2012, P. 102). Cognitive load refers to “any demands on working memory storage and processing of information” (Schnotz & Kurschner 2007, P.471). It is also believed that as working memory is very limited once its capacity is exceeded, overload occurs and learning is hindered (Johnson and Slayter, 2012). An example of this is given by Johnson and Slayter (2012) in an accounting context where they study the benefits of giving introductory accounting students a limited number of similar transactions to practice their bookkeeping skills rather than immediately introducing a large range of transaction types.

CLT posits that novice learners need to rely heavily on working memory when learning new material (Johnson and Slayter 2012). Expert learners however can make use of their long - term memory which is much more extensive and “contains huge amounts of domain-specific knowledge structures that can be described as hierarchically organized schemas” (Kalyuga et al 2003, P.23). These schemas reduce the burden on working memory as they facilitate the processing of multiple elements of information as one element (Schnotz and Kurschner 2007). Furthermore, where such schemas are repeatedly applied, they become automated thereby freeing working memory for other tasks (Van Merrienboer and Sweller 2005). The ability of more expert learners to use these schemas implies that the instructional approach for such learners should differ to that used when dealing with novice learners. This is referred to as the expertise reversal effect (Kalyuga et al 2003) which asserts that, whereas novice learners need high levels of support in their learning, this is not the case with learners who have gained a greater level of expertise and who can draw on their previously developed schemas to direct them in problem solving activities (Blayney et al 2015). Furthermore, Schnotz and Kurschner (2007) highlight the fact that based on this knowledge of students learning, the tasks assigned to novice and expert learners should take account of this difference in abilities. This emphasises the link between CLT and ZPD as identified by Schnotz and Kurschner (2007, P.501) where the CLT approach of aligning “task difficulty with the learner’s expertise is equivalent to adapting instruction to the learner’s … ZPD”.

In an accounting context, the impact of cognitive load theory has been considered by a number of researchers including Blayney at al (2015), Halabi et al (2005) and Johnson and Slayter (2012). Blayney et al (2015) studied the need to adapt instructional approaches to levels of learner expertise in accounting education. Whilst more complex instructional formats were found to benefit experienced learners, novice learners were seen to benefit from a less complex format focusing on “isolated elements” (ibid, p.200). Reducing the cognitive load of a task has a positive impact provided that the task level stays within the zone of proximal development. However, if it falls below this level it has a negative learning effect (Schnotz and Kurschner 2007). In the context of compiling the study manual, material was included that builds on previously learned material whilst also introducing new elements to challenge students.

Accounting practice requires a large amount of practical problem solving. Cognitive load in problem solving can be reduced by first showing students the solution to a worked example – setting out the solution from beginning to end allows novice learners to see how the problem is solved without having to actually solve it (Kalyuga et al 2003). Worked examples were included throughout the sample chapters to help students understand the new material. In their research, Kalyuga et al (2003) found that novice learners benefitted from instruction that included a lot of guidance which is in keeping with researchers in other subject areas. Renkl and Atkinson (2003), for example, discovered that whereas worked examples were appropriate for novice learners in the science areas, more expert learners who had acquired the requisite underlying skills, were able to solve problems themselves. Although this finding relates to research in the science disciplines, the assumption has to be that it would apply to accounting also and that once learners have learnt the essential skill, worked examples are no longer required and may even hamper learning. In compiling the sample chapters, the end of each chapter included student examples which learners were required to solve themselves once they had completed the worked examples in the chapter.

Research carried out with science students by Chi et al (1989) considered why good students learn so much better from worked examples and concluded that self-explanations (the way these students made sense of the material for themselves) was the key to a detailed understanding.

> ‘The function of students’ explanations seems to be both the enhancement of their initial understanding and generation of new understanding.’ (Chi et al 1989, p.180).

Renkl and Atkinson (2003, P.18) emphasise the use of “principle based explanations” as being an important element of such self-explanations. This aligns with using the “Concept approach to teaching accounting,” as explained below, which advises commencing explanations of individual accounting standards with the underlying principles.

There are problems associated with cognitive load theory in particular that of measuring the levels of expertise of learners and designing appropriate material to meet their needs. This problem is further accentuated when designing material to suit the needs of a range of learners. As noted by Renkl and Atkinson (2003), when a student is acquiring a complex skill, that student may be at different learning stages for the various sub-elements of the complex task – meaning that the type of instructional approach to assist them in mastering this skill is likely to fit their needs for some elements but not others. When designing the sample chapters sufficient worked examples were included to ensure weaker students understood the topic. It is intended that some of these would be solved by more able students themselves without the aid of the step by step solution.

A further problem of cognitive load theory is determining the cognitive load of learners and measuring distinct types of load. As explained by Blayney et al (2015), no measure exists currently for measuring the different types of cognitive load. However in recent developments in this area, Lepping et al (2014) describe a recently developed psychometric text that appears to measure the different elements of cognitive load although further research is required on this.

### 3.3 Approaches to learning

The Pathways Commission was set up in the US to develop a strategy for Accounting Education. Its initial report (2012) included a set of core competencies required of accountants, including an ability to engage in SRL. SRL is a form of learning where the learners “have control over their own learning” and are able to

direct that learning towards achieving a specific “learning goal” (Loyens et al 2008, P.416). Pintrich and De Groot (1990) recognise three components of self regulated learning: firstly strategies for “planning, monitoring and modifying their cognition” (P.33), also “being able to maintain their cognitive engagement in the task” (ibid) and finally the use of “cognitive strategies that students use to learn, remember and understand the material”(ibid)

The Accounting Education Change Commission (1990) pointed out that it is not possible to teach accountants all that they need to know for their professional careers because of the amount of changes that take place in accounting rules and legislation. Instead, accountants need to be equipped with “life-long learning skills” which will allow them to improve their knowledge and skills and use these in problems solving throughout their life time (Smith 2001, P.664).

Some students will already have developed such skills prior to entry into HE. Byrne and Flood (2005) point out however, that for the many students entering HE in Ireland who do so directly from second level education, the teaching and assessment practices experienced in that environment are often not suited to developing such skills. Where students are given the opportunities at third level to engage in SRL activities, these skills can however be improved (Kim et al 2014). Ferguson (2010) found that some students considered accounting textbooks particularly useful for SRL. The addition of the study manual is intended as an aid to improving students’ ability to recognise shortfalls in their learning and to address these shortfalls.

Active learning which is defined as “any instructional method that engages students in the learning process” (Prince 2004, p.223) adheres to a constructivist approach to learning. Eison (2010) considers active learning to include material completed by students either within the classroom or outside of it.

Active learning can include a range of techniques designed to involve the student. An example of active learning techniques given by Brickner and Etter (2008) includes in an accounting context, quantitative examples from the textbook and other sources. The benefits of active learning include improved understanding of material and taking a greater responsibility for their own learning (Teaching Commons 2016).

All professionally qualified accountants are expected to undertake continuing professional development (CPD). This requires accountants to keep up to date by undertaking both structured and unstructured learning annually. SRL and active learning skills developed at third level will be important skills to use in identifying and participating in such learning. CPD if properly channelled, "will help professional accountants be more successful in their current roles, move effectively into new roles and pursue more varied and longer careers" (Lindsay 2016, P.10). This is particularly important in an era of changing accounting roles. The development of approaches to learning that will be useful in their future professional careers is something that third level students should seek to develop. (ibid). The use of the study manual will help to foster these skills.

### 3.4 Concept approach to teaching international Accounting Standards

"Financial reporting is the communication of financial information…. to external users" (Connolly 2015, P.4). It is regulated by rules set out in company law, by the stock exchange (listed companies only) and accounting standards[2] (ibid). In June 2002, the EU Council of Ministers introduced a requirement with effect from 1 January 2005 for all companies listed on an EU stock exchange to prepare their Consolidated (group) Financial Statements in accordance with International Accounting Standards (IAS), also referred to as International Financial Reporting Standards (IFRS). In common with many other Irish and UK third level institutions and professional bodies, ITT teaches company accounts based on IAS/IFRS.

IAS and IFRS are issued by the International Accounting Standards Board (IASB). The aim of the IASB (2015) as explained by Barth (2008, P1161) is to develop a "single set of high quality global accounting standards that are accepted worldwide," thereby helping to ensure consistency in accounting reporting throughout the world.

Documents published by the IASB include the Conceptual Framework for Financial Reporting. This document, which is in the process of being updated by the IASB and

[2] Accounting standards are Accounting standards are rules which set out the "method by which financial statements should be prepared and presented" (Connolly 2015, P.7).

is expected to be completed by the end of 2017, is a tool that sets out the basic concepts which underpin the accounting standards, and :

> " assists the IASB in develop Standards that are based on consistent concepts" (IASB 2015, p.6)

The IASB supports the approach recommended by Barth (2008) which recommends that financial reporting education should start with the concepts included in the Conceptual Framework as it "is the foundation on which financial reporting standards are built" (Barth 2008, pp. 1163-1164). As part of their education in financial reporting, students need to learn to make judgements on how to correctly apply their accounting knowledge to practical situations - this a very significant part of the role of an accountant.

> "Understanding the conceptual framework will enable students to make more informed financial reporting judgements because they will understand what financial reporting is trying to accomplish and how" (Barth 2008, p.1165).

In developing the study manual, this approach was used to initially emphasise the underlying concepts relevant to each accounting standard before moving on to explain the precise rules of the standard and how those rules tie in, or in some cases do not tie in, to the underlying concepts in the framework.

### 3.5 Use of accounting textbooks

The use of accounting textbooks both by instructors and students has been the subject of some research. Much of this research has considered the perceived over-reliance on textbooks in accounting education throughout the world. From an instructor's perspective, Ferguson et al (2010, P509) found that the textbook made a "significant contribution" to the content of accounting courses and their research indicated that the textbook covered much of the material included on their course and this was, in a number of cases, the appeal of the book. Furthermore, Ferguson et al (2010) found that instructors were supplementing the text book by giving students additional material to encourage critical thinking skills and to provide different viewpoints which contradicts the idea that lecturers are over-reliant on textbooks.

To gain a better understanding of Accountancy text book usage across the third level sector in Ireland, I carried out extensive research on the textbooks used by other third level colleges. The focus was the recommended text book used in the final year of three-year accounting degrees and that used in the third and fourth years of four-year accounting degree programmes. Appendix 6 gives an analysis of the findings from this research. Two categories of books were found to be in use – one category specifically geared towards studying for the professional accounting exams and another category used for general purpose accounting education. Though both categories have their merits there are also problems with both – those geared towards the professional accounting exams are not very detailed as they are designed to be used with other lecture material available only to providers of such professional education. The general - purpose accounting education books cover topics individually but do not tend to have examples covering a number of topics simultaneously which differs from the idea of providing students with real world examples as the accounting profession suggests should be done (Gupta and Marshall 2010).

Berry et al (2011, p.31) have a positive view of textbooks and consider them "an integral course component providing the linkage between lectures, assignments and examinations." From a student perspective, Ferguson (2010) found that students felt that the textbook should more closely align to the course being taught. Considering the student perspective also, Jones (2011) studied how students use financial accounting textbooks. His research indicates that student usage of textbooks was related to completing homework assignments and many students relied on the textbook to learn material that was not adequately explained during class. His research further indicated that the textbook was considered an important part of a students' learning of financial accounting. Of particular note, is that students believed that "step by step" examples were a particularly important element of the content of the textbook (Jones 2011). Jones (2011, P.35) concluded that textbooks should be designed to take account of the manner in which they are used by students:

> "highlighting key review concepts and providing clear examples that illustrate these concepts".

In writing the sample chapters, these ideas have been reflected through the use of worked examples and the highlighting of important "points to note".

Research on the use of e-books compared to hard-copy textbooks has provided a mixture of results. Shepperd et al (2008, p.2) highlight benefits of e-books including that they are “less expensive, lighter, less bulky, and environmentally friendly” but they also have disadvantages including the fact that a computer or reader is needed to learn from them (Ibid). Research carried out by Daniel and Woody (2013) on usage both in a laboratory and in the students’ own homes found that students took longer to read material on an e-book compared to the paper version. Despite this, there was no perceptible difference in the results attained by the students when they were tested on the material read. Hard copies of the sample chapters used in class were distributed to students prior to the commencement of the topic and were also made available on moodle to allow for students’ preference in this regard.

### 3.6 Impact of literature on the approach to writing the study manual

When compiling the accounting manual, the material included was informed by the themes discussed above. ZPD and CLT caution the need to balance sufficient new material with not overwhelming the students with complex material. These theories were reflected in the use of worked examples showing students new material in a step by step fashion followed by end of chapter student examples available to practice once the material had been learned. The use of the worked examples were also included to encourage SRL by students. The highlighting of important “points to note” reflected information that students generally find useful when revising for exams. The “concept approach” was used in the sample chapters to introduce each chapter, starting with the basic underlying concepts before explaining the details of the relevant accounting standard. Aligning the sample chapters to the module being studied and including the end of section example to practice all three topics in an exam type question reflected students’ requirements in relation to textbooks. Finally, making the chapters available both in hard and soft copy allowed for flexibility in accessing the material.

## 4. Methodology

As mentioned above, the purpose of this research was to gain an understanding of the suitability of a study manual for year 3 ITT accounting degree students and to inform the approach to writing that study manual. To that end three sample chapters, see Appendix 5, were written for third year students and tested in class during April 2017. Three class groups were involved in the testing; two full time groups consisting of 65 students in total and a part time group – 35 students. The author tested the chapters on one day group (3B) and the part time group whilst another lecturer tested the chapters on the other full time group (3 A).

For the two class groups lectured by the author, the chapters were given out in hard copy in class and were available on moodle also. The sample chapters were used as a basis for teaching the material in class. Students were then encouraged to independently attempt the student examples so that they could assess their understanding of the material covered in these chapters. This material represented about 4 weeks of a 12 week semester (plus one week revision). All three topics were stand-alone topics and did not directly link to each other or to any other topics (although knowledge of basic accounting treatment of assets and liabilities was important). All three topics contain difficult elements and this is the reason that they are taught towards the end of semester 6 rather than in semester 5 or in year 2. The deferred tax chapter, Chapter 3 is an introduction to that topic only as it is quite complex and is studied in more detail in year 4. Students were aware that all three topics would be examined in the end of semester exam in May and this was likely to have increased the motivation of some students to learn this material.

With regard to the group (3A) taught by another member of the department, chapter 2 on construction contracts was used as class material. The chapter one (financial instruments) material was given out in class towards the end of the coverage of the relevant topic and the third chapter on deferred tax was made available to that class group on moodle after the semester was completed.

The strategy chosen for this research was to gather information from students through the use of a survey. Denscombe (2014, P.4) emphasises the importance of choosing a strategy that “is likely to be successful in achieving the aims of the research”. In particular he focusses on whether the strategy chosen will produce

findings which can answer the research questions, will it be feasible to get the information required and is the research strategy ethical.

In order to ensure that that the research would produce sufficient findings to answer the research questions, students were asked if they would like to participate in a follow-up interview. This allowed for the possibility of obtaining more information from a small number of students if sufficient data was not received from the survey. Having carried out the survey, it was felt that sufficient data had been received to answer the research questions and consequently no follow up interviews were held.

It was always felt that obtaining information from students, both full time and part time, was entirely feasible because of the regular access to students in class and through moodle.

Webster et al (2014) indicate that for ethical reasons, it is usually helpful to carry out research on the basis that the participant may feel under pressure to partake in the research. For this reason, the fact that students did not have to complete the survey if they chose not to, or could partially complete it if they chose to do so was mentioned in the information sheet (see appendix 2) and was also restated in class prior to the completion of the survey.

All three class groups were surveyed using the student survey (see appendix 1). As classes covering the material in these chapters were only completed approximately 10 days before the end of the semester it was decided that a paper survey of students would be carried out in the last week of the semester to obtain feedback from students. Earlier in the semester students had been informed that a survey would be carried out and its purpose explained. This was also stated in the information sheet given to students prior to their completing the survey. (see appendix 2)

The student survey consisted of 10 questions. Questions were a mixture of open - ended and closed - ended questions. Open-ended questions are “those for which no response options are provided” allowing respondents to “elaborate on their answers” (Toepoel 2016, P.30). It was felt that these would provide valuable explanations and elaboration of the answers given in the closed-ended questions.

Prior to the survey of the three class groups, the survey was tested by another staff member with experience in the research area.

Of the 100 students in the class groups, 62 students completed the survey either partly or fully. As class attendance was 77% for those classes, this represents a response rate of slightly over 80%.

To provide further evidence of the suitability or otherwise of the study manual, it was decided that an understanding of the views of a colleague who was lecturing on the same programme and used the study manual material should also be sought. This information was obtained through surveying that staff member using the staff survey (see Appendix 3).

The advantages of using surveys as enumerated by Denscombe (2014, P.29) include the fact that they are an efficient and relatively cheap means of collecting data, the data gathered is real world data, and surveys can be used with large-scale or small scale research as is the case here. Surveys, again as is the case here, can be used to collect both quantitative and qualitative data.

The questions which the research was attempting to answer are:

1. Would the accounting manual be a useful tool for students to learn material independently?
2. What is the opinion of the students who have used the sample chapters on the approach taken and is it one that will encourage their learning?

## 5. Analysis of data

A mixed methods approach was used to analyse the data from the surveys. This type of approach recognises that:

> "all methods individually are flawed, but these limitations can be mitigated through mixed methods research which combines methodologies to provide better answers to our research questions" (Turner et al 2017, P.243).

Denscome (2014,p.146) recognises further advantages of using a mixed methods approach, which include: gaining a better understanding of what is being surveyed through "viewing research problems from a variety of perspectives"; and using these different perspectives because it makes practical sense to do so.

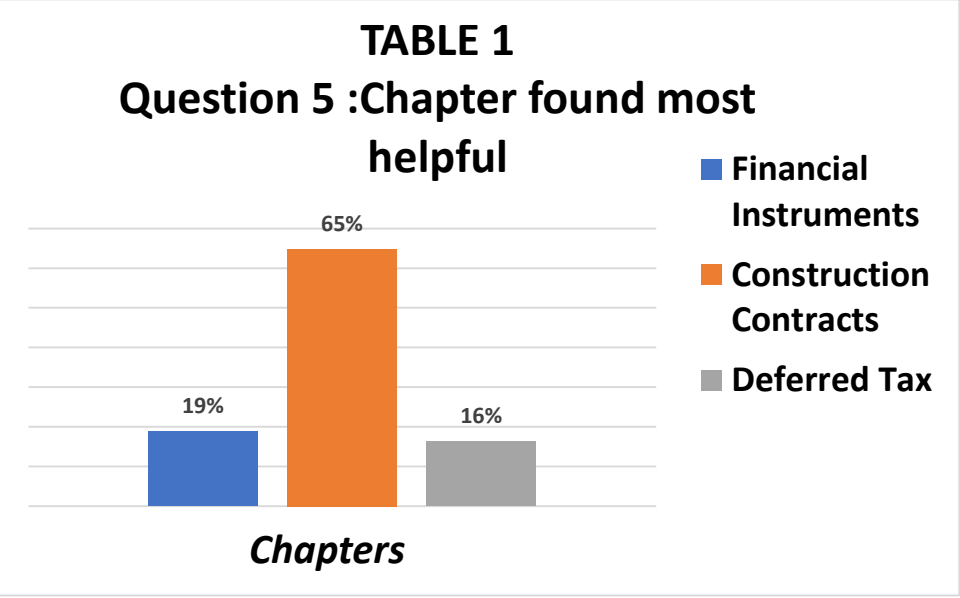
The student and staff surveys were interpreted using a quantitative approach to analyse the closed-ended questions followed by a qualitative analysis of the responses from the open- ended questions.

Quantitative research is carried out to "generate numerical data that can be used for statistical testing" (Toepoel 2016, P.2 ). The benefits of such an approach include the production of numerical data that is independent of the researcher and is not overly influenced by the researcher (Denscombe 2014)

Qualitative research is "primarily used to gain an understanding of underlying reasons, opinions or motivations" (Toepoel 2016, P.2 ). It is an approach to research which has a different emphasis from quantitative research in that the qualitative researcher's "background, values, identity and beliefs might have a significant bearing on the nature of the data collected and the analysis of that data" (Denscombe 2014, P.245).

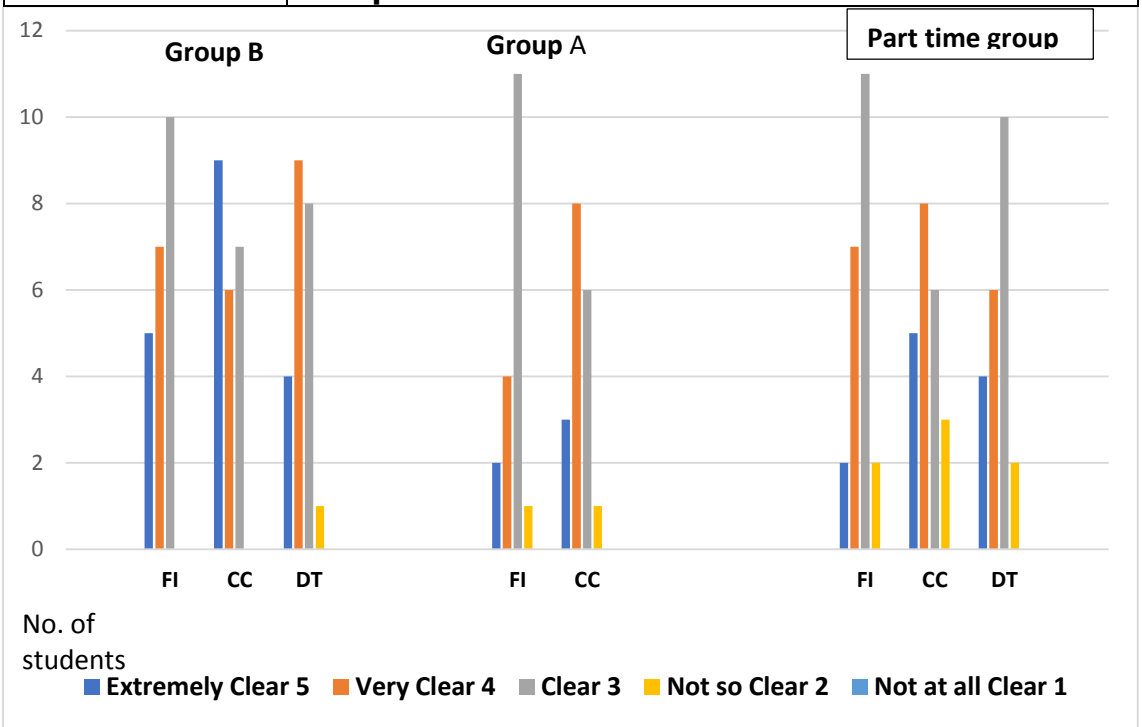
In order to achieve a full understanding of the students' and staff opinions of the sample chapters and to fully answer the research questions, a combination of both quantitative and qualitative analysis was deemed appropriate in carrying out this research

Analysis of the answers to question 5 of the student survey indicates that all three groups, two full-time groups and one part-time group, believed that the material in chapter 2 on construction contracts was the most helpful for their study needs. This was also the outcome of the staff survey.




This answer was consistent with student responses to question 4 which required students to indicate their opinion of the clarity of the three chapters over 5 possible ratings from extremely clear to not at all clear. In the case of group A who had not received a copy of the notes on deferred tax at the time this survey was completed, their answers relate to the other two chapters only. The results of this question from all three class groups are summarised in the chart below:

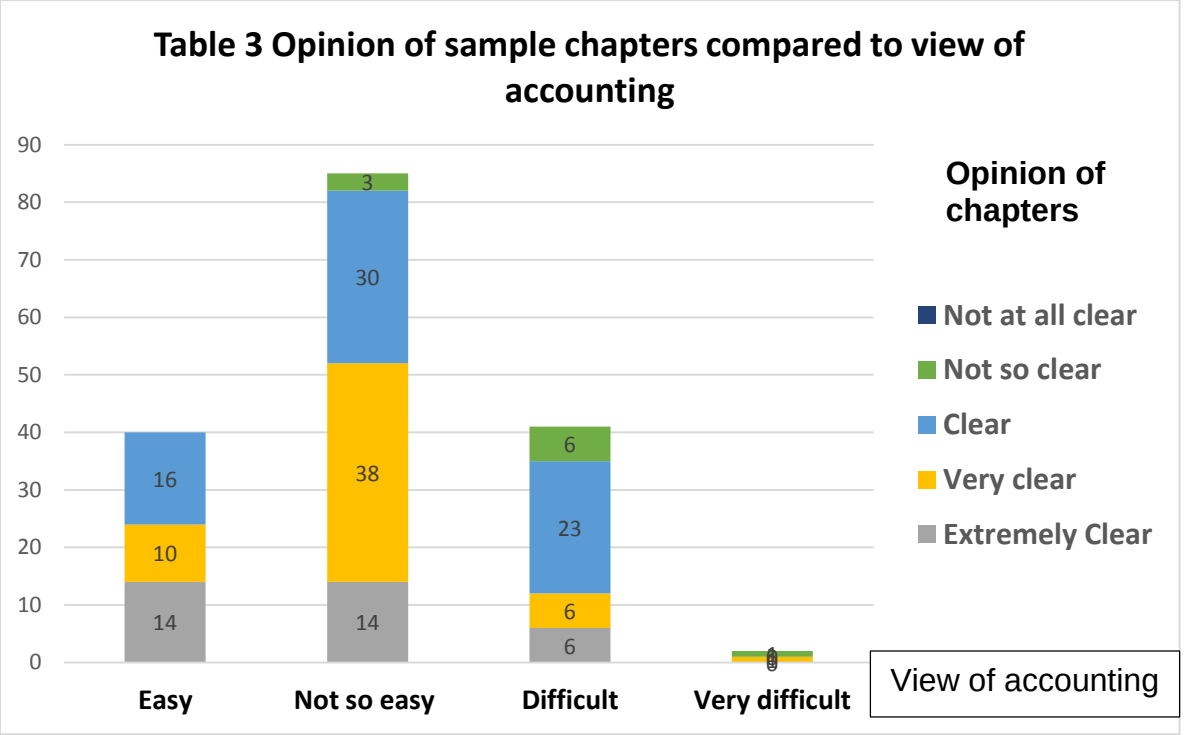
| Table 2 – Question 4 – opinion of each chapter by class group | |
|---|---|
| FI | Chapter 1 Financial Instruments |
| CC | Chapter 2 Construction contracts |
| DT | Chapter 3 Deferred tax |




The responses from all three groups include a greater number of extremely clear and combined extremely clear and very clear answers in relation to construction contracts than for either of the other chapters. These being 9 and 15 (9 +6) respectively for group B (compared to 5 and 12 (5+7) for financial instruments and 4 and 13 (4+9) for deferred tax) 3 and11 (3+8) for group A (compared to 2 and 6 (2+4)for financial instruments) and 5 and 13 (5+8)for the part time group (compared to 2 and 9 (2+7) for financial instruments and 4 and 10 (4+6) for deferred tax). This was in keeping with the response from the staff survey also. When the comments from question 6 (what parts of the chapter selected as most helpful did you particularly like?) were analysed it again was obvious from that data that they found construction contracts easiest to follow, with a number of students in all three groups emphasising that fact. Many students who explained their choice of construction contracts chapter as the most helpful focussed on the worked examples as the most helpful element. In particular the way the examples built one on the other as one Group B student described it. “building up the understanding of the chapter slowly and thoroughly” Other students mentioned the worked examples as being something

that they liked about all chapters. This opinion is consistent with the CLT approach which indicates that novice learners require a good deal of scaffolding and this is enabled through the use of the worked examples which move through the solving of solutions on a step by step basis. This is in keeping with the findings of Kalyuga et al (2003) in relation to CLT. This step by step approach is particularly evident in the Construction Contracts chapter which may be the reason students generally found that chapter the most helpful.

Further data from the student survey showed that of 62 students studying for a degree in accounting and finance, no student considered financial accounting to be very easy, which was a surprise. This may be a reflection of the technical nature of the subject however and the large syllabus content in year 3 of the degree programme. Building on respondents' opinion of accounting and linking it to their opinion of the sample chapters gives the information set out in table 3 below. Here each student ranked each individual chapter that they had studied, which in the case of 3A, as explained above, was two of the three chapters and in the case of the other groups all three chapters were ranked:




From this table it is evident that almost all students found the sample chapters clear, very clear or extremely clear. This is particularly true of the students who find accounting easy but also true of those who find it not so easy and even those who

find it difficult. From this we can deduct that the chapters appealed to a range of abilities and had relevance both to students who struggle with accounting and also for those who are more competent.

Further analysis of this data was carried out by attaching a value to each ranking from 5 for extremely clear down to 1 for not at all clear. The results of this are included in table 4:

## Table 4

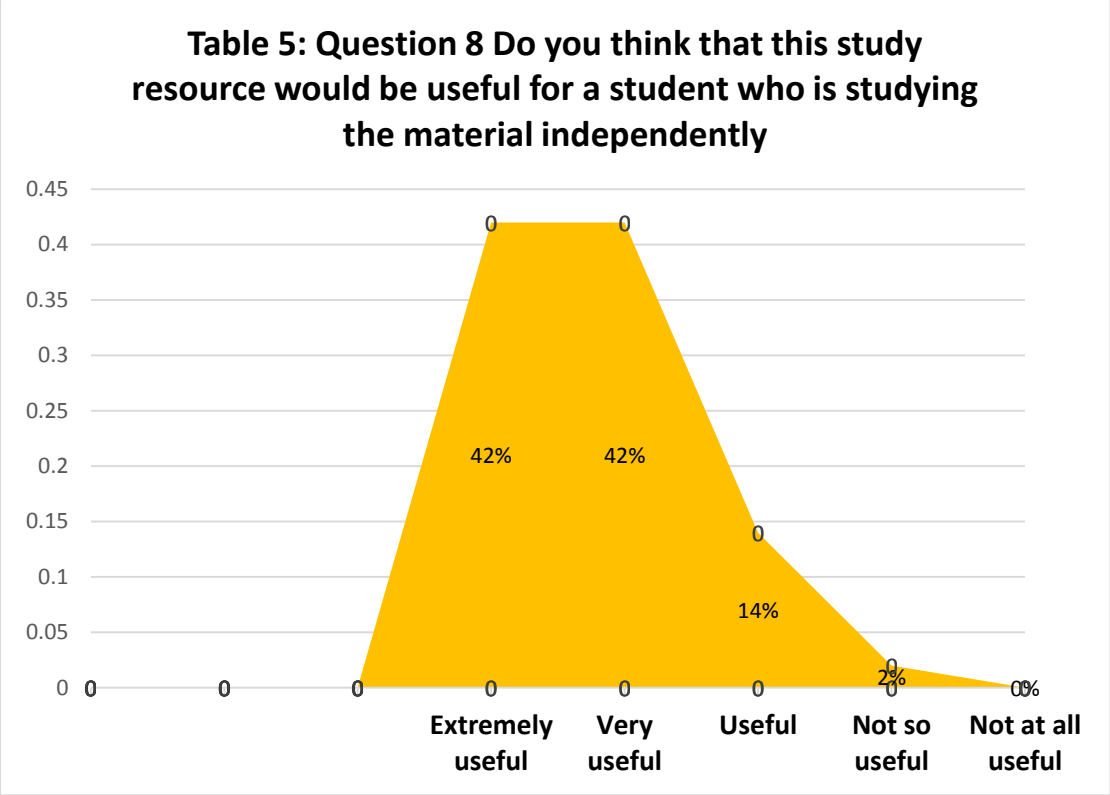
**Analysis of student opinion of sample chapters compared to their view of Financial Accounting**

| | **Extremely Clear** | **Very clear** | **Clear** | **Not so clear** | **Not at all Clear** | **Total** | **Mean** |
|---|---|---|---|---|---|---|---|
| **Ranking value** | **5** | **4** | **3** | **2** | **1** | | |
| Find accounting Easy | 70 | 40 | 48 | 0 | 0 | 158 | 3.95 |
| Not so easy | 70 | 152 | 90 | 6 | 0 | 318 | 3.74 |
| Difficult | 30 | 24 | 69 | 12 | 0 | 135 | 3.29 |
| Very difficult | 0 | 4 | 0 | 2 | 0 | 6 | 3.00 |
| | 170 | 220 | 207 | 20 | 0 | 617 | 3.67 |

Clearly from the data in table 4 above, those who find accounting easier also find the material clearer with the average rating of these students being 3.95. Even those students who find accounting difficult still find the material clear while students who find financial accounting very difficult on average rating the material at 3.0.

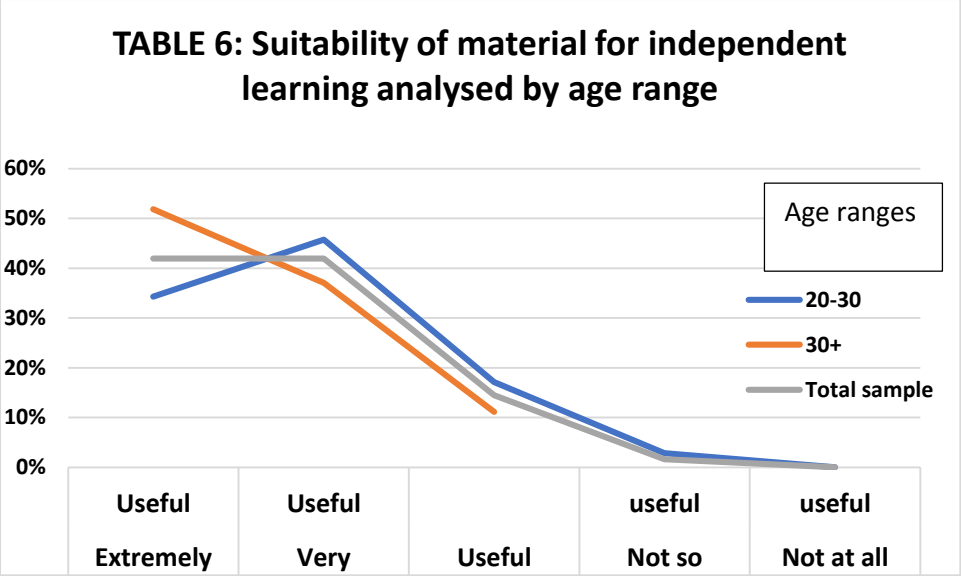
Calculating the standard deviation from the mean of these scores of 3.67 gives us 0.4749 indicating that even taking account of inherent volatility in these scores the average student will rate the material above 3 (clear).

Interestingly students' ratings of the suitability of the chapters for independent learning (Question 8) was higher than the ratings set out above, with 84% (52 of 62) of students surveyed believing that the sample chapters would be extremely useful or very useful for independent learning as indicated in table 5 below:




This compares to 53% considering the material to be extremely clear or very clear based on the answers to question 4. There may be a number of different reasons for this disparity including the fact that the question 4 responses were given on a chapter by chapter basis whilst the question 8 responses were given in total. Also students may have found that these chapters are more suitable particularly for independent learning than any other available resources.

Looking at the data from question 8 by age range also gives some interesting data with the older students (30+) being much more positive towards the material than the younger students as demonstrated in table 6 below:




From the information in table 6, we clearly see that more than half of the students (52%) in the 30+ range found the material "extremely useful" for independent learning this compares with 34% in the 20-30 year age group. Knowles, as cited in Fry et al (2009) explains a number of principles of adult learning including that "as a person matures they become more self-directed" (P.14) indicating that the older student is more capable of SRL which ties into the evidence from table 6.

Summarising the information obtained through analysing the quantitative data indicates that a study manual would indeed be useful for independent learning and that students who have used the sample chapters in class, are in general very positive towards the approach taken. Looking at the qualitative data derived from the student surveys allows us to garner further information. "Many analyses of qualitative data begin with the identification of key themes and patterns" (Coffey and Attkinson 1996, P.26). Such patterns and themes can be identified from analysing the data through allocation of codes as part of the process of "organization, retrieval, and interpretation of data" (p.27). As part of the study of students' responses to the open-ended questions an analysis of the data derived from these responses was carried out on a themed basis. This was done to help in answering the research question as to the elements of the sample chapters which particularly appealed to students and the extra material that they believed should be included in the study manual.

The main theme from the open-ended responses of students referred to above, was that students liked the number and detail of the examples in the sample chapters. In

particular the step by step approach of the worked examples appealed to students. There were some students who wanted even more examples and some real world examples and these two points in particular would also need to be considered before moving forward with further chapters.

A significant number of students also liked the explanations of the individual accounting standards. In contrast, a small number of students found the explanations of the accounting standards too detailed and would have preferred "bullet points". Consideration should be given going forward to including a bullet point summary at the end of each chapter of the manual which would be a useful quick revision tool.

Other students identified the "points to note" which highlighted important elements of the material, as being something that they particularly liked. This view is consistent with Jones (2011) who indicates that "highlighting key review concepts" is of help to students and is what they are seeking from a textbook.

A small number of students mentioned that the inclusion of debit and credit entries for various adjustments in the sample chapters was a positive point. This point was also highlighted by my colleague who completed the staff survey:

> "Illustration of the double entry of each adjustment assists the student in developing their understanding of the impact of such adjustments in financial statements. This is often absent from current accounting texts."

In general comments indicated a positive response to the sample chapters with one student stating that the sample chapters "were much better than the (recommended) textbook" and another student commented that "I think all course materials should be done like that" when referring to the sample chapters.

The outcome of this research is a very positive attitude towards both the idea of

the study manual itself, with a very positive response to question 1: Would the accounting manual be a useful tool for students to learn material independently? The numbers responding positively to question 8 of the survey was a clear indication of this. Similarly, students who had used the chapters had positive attitudes to the approach taken and their feedback indicates that it is an approach which will encourage learning.

Having completed the three sample chapters, the research indicates that moving forward with chapters covering other aspects of the financial accounting modules using the approach taken in the existing chapters, with some possible minor modifications, would also be well received by students and would greatly assist students learning both at third level and throughout their future careers.

## 6. Conclusion

The research carried out was to inform the preparation of a study manual for ITT students on the Bachelor of Business in Accounting and Finance degree programme. The manual is aimed at extending the accounting knowledge and practice of ITT students both during their time in ITT and when they move on into the workplace. This will be a valuable resource for those students and will help develop not only their accounting skills but also self-regulated learning skills which will be important throughout their professional careers.

The aim of this research was to assist in the design of a study manual that reflects what students actually want and based on the very positive feedback from students this had been achieved with the sample chapters. The next step is to extend the coverage of the manual to entire year 3 syllabus relevant to company accounts and IAS. The intention is that during the next two years, chapters will be written to cover the semester 5 syllabus with students coming into third year in 2018/2019 also being supplied with material relevant to the syllabus coverage of these topics in years 1 and 2. The approach used in the sample chapters has proven to be very “student friendly” and the lessons learned from compiling the sample chapters and carrying out this research will be reflected in the full study manual

As mentioned previously, no follow up interviews were carried out as it was felt that sufficient data had been gained from the student and staff surveys and that there was no need for such interviews at this time. Going forward, however follow up interviews with students who have moved into the Fourth year of the degree programme and are studying more advanced material may throw further light on approaches to be used in the study manual. Further opinions from staff within ITT and elsewhere who are involved in lecturing accounting in a third level college could also be useful in improving the design of the manual.

In conclusion, much has been achieved in compiling these chapters and researching students’ opinion of same. The overwhelming attitude of students toward the sample material was very positive and the resource, which will be available to ITT students in the future will give them a guide through the accounting impact of IAS that is not available to other students in the sector.

## 7. Bibliography


Accounting Education Change Commission (1990) Position Statement Number One 'Objectives of Education for Accountants' Available at http://www2.aaahq.org/aecc/pdf/position/pos1.pdf Accessed 30/7/2017

Barth, M. (2008) 'Global Financial Reporting: Implications for U.S. Academics' *The Accounting Review 83 (5)* pp.1159-1179 Available:doi: 10.2308/accr.2008.83.5.1159 Accessed 16 August 2017

Berry, T., Cook, L., Hill, N. and Stevens, K. (2011) 'An exploratory Analysis of Textbook Usage and Study Habits: Misconceptions and barriers to success' *College Teaching 59 pp. 31-39* Available:doi: 10.1080/87567555.2010.509376 Accessed 16 August 2017

Biggs, J.and Tang, C. (2011) *Teaching for Quality Leaning at University: What the Student Does* 4th ed., Maidenhead and New York: McGraw Hill

Blayney, P., Kalyuga, S. and Sweller, J. (2015) 'Using Cognitive Load Theory to Tailor Instruction to Levels of Accounting Students' expertise' *Educational Technology and Society 18(4), pp.199-210,* JSOR Journals, EBSCOhost, viewed 16 August 2017

Bonwell, C. and Eison, J.(1991) 'Active learning : creating excitement in the classroom' *ASHE-ERIC Higher Education report* Available: http://files.eric.ed.gov/fulltext/ED336049.pdf Accessed 21 August 2017

Brickner D.R. and Etter, E.R. (2008) 'Strategies for promoting active learning in a principles of accounting course' *Academy of Educational Leadership Journal, 12 (2)* pp.87-93 Available at http://commons.emich.edu/accfin_facsch/4/ Accessed 20 August 2017

Byrne, M. and Flood, B (2005) 'A study of accounting students' motives, expectations and preparedness for higher education' *Journal of Further and Higher Education Vol 29. No.2* pp. 111-124 Available: doi:10.1080/03098770500103176 Accessed 16 August 2017

Byrne, M., Flood, B., Hassall, T., Joyce, J., Montano, J.L., Gonzalez Gonzalez, J.M. and Tourna-Germanou, E. (2012) 'Motivations, expectations and preparedness for higher education: A study of accounting students in Ireland, the UK, Spain and Greece' *Accounting Forum 36 pp.134-144*
Available: doi: 10.1016/j.accfor.2011.12.001 Accessed 16 August 2017

Cameron, R., Clark, P., De Zwaan, L., English, D., Lamminmaki, D., O'Leary, C., Rae, K. and Sands, J. (2015) 'The Importance of Understanding Student Learning Styles in Accounting Degree Programs' *Australian Accounting Review No. 74 Vol 25 Issue 3 2015 pp. 218-231* Available:doi: 10.1111/auar.12065 Accessed 15 August 2017

Chi, M.T., Bassok, M., Lewis, M.W., Reimann, P. and Glaser, R. (1989) 'Self-Explanations: How Students Study and Use Examples in Learning to Solve Problems' *Cognitive Science 13* pp.145-182
Available: doi: 10.1207/s15516709cog1302_1 Accessed 16 August 2017

Coffey, A. and Atkinson, P. (1996) *Making sense of qualitative data: Complementary Research Strategies Thousand Oaks (Cal),*London, New Delhi: Sage Publications

Connolly, C. (2015) *International Financial Accounting and Reporting* 5th ed., Dublin: Chartered Accountants Ireland

Daniel, D.B. and Woody, W.D. (2013) 'E-textbooks at what cost? Performance and use of electronic v. print texts' *Computers and Education 62* pp. 18-23
Available: doi:10.1016/j.compedu.2012.10.016

Denscombe, M. (2014) *The Good Research Guide* 5th ed., Maidenhead and New York: McGraw Hill

Eison, J (2010) 'Using Active Learning Instructional Strategies to Create Excitement and Enhance Learning'. Available:
https://www.cte.cornell.edu/documents/presentations/Eisen-Handout.pdf Accessed 8/6/2016

Expert Group on Future Funding for Higher Education, (2015) 'The Role, Value and Scale of Higher Education in Ireland Discussion paper for stakeholder discussion January 2015' Available at https://www.education.ie/en/The-Education-System/Higher-Education/Higher-Education-Role-Value-and-Scale-of-Higher-Education-in-Ireland-Discussion-Paper-1-.pdf Accessed 26/7/2017

Fani, T. and Ghaemi, F. (2011) 'Implications of Vygotsky's Zone of Proximal Development (ZPD) in Teacher Education: ZPTD and Self-scaffolding' *Social and Behavioural Sciences, 29* pp 1549-1554
Available: doi: 10.1016/j.sbspro.2011.11.396 Accessed 16 August 2017

Ferguson, J. (2010) 'Introductory financial accounting students: Exploring their views of course texts' *International Journal of Management Education 9(1)*
Available:doi: 10.3794/ijme/91.301 Accessed 16 August 2017

Ferguson, J., Collison, D., Power, D. and Stevenson, L. (2010) 'The Views of 'Knowledge Gatekeepers' About the Use and Content of Accounting Textbooks' *Accounting Education: an international journal 19(5)* pp.501-525
Available: doi:10.1080.09639281003594294 Accessed 16 August 2017

Fry, H., Ketteridge, S. and Marshall, S. (2009) *Understanding student Learning* in Fry,H, Ketteridge, S. and Marshall, S. (eds) *A Handbook for Teaching and learning in Higher Education: Enhancing Acadenic practice* 2nd ed New York & London Routledge pp.8-26

Gupta, S. and Marshall, L.L. (2010) 'Congruence Between Entry-Level Accountants' Required Competencies and Accounting Textbooks' *Academy of Educational Leadership Journal Volume 14 No.1,* Business Source Complete, EBSCOhost, Accessed 16 August 2017

Halabi, A.K., Tuovinen, J.E. and Farley, A.A. (2005) 'Empirical Evidence on the Relative Efficiency of Worked Examples versus Problem-Solving Exercises in Accounting Principles Instruction' *Issues in Accounting Education* Vol.20 N0.1 pp. 21-32, Business Source Complete, EBSCOhost, Accessed 16 August 2017

Harland, T (2003) Vygotsky's Zone of Proximal Development and Problem-based Learning: linking a theoretical concept with practice through action research *Teaching in Higher Education, 8(2)* pp.263-272
Available: doi: 10.1080/1356251032000052483 Accessed 15 August 2017

Hart,D.L. and Wang, K. (2016) 'Teaching Accounting effectively: An examination of Accounting Students and Faculty Perceptions *Academy of Educational Leadership Journal Vol 20 No.1* PP93-107, Business Source Complete, EBSCOhost, Accessed 15 August 2017

IASB (2015) Conceptual Framework for Financial Reporting Exposure Draft May 2015) Available at http://www.ifrs.org/Current-Projects/IASB-Projects/Conceptual-Framework/Documents/May%202015/ED_CF_MAY%202015.pdf
Accessed 30/6/2016

Johnson J,G. and Slayter, E (2012) ' Impact of Structure of Early Practice on Student Performance in Transaction Analysis'. *Issues in Accounting Education 27*,pp.101-112 Available: doi: 10.2308/iace-50092 Accessed 16 August 2017

Jones, J.P. (2011) 'Enhancing Student Learning: An Examination Of The Student Use Of Textbooks In Financial Accounting' *American Journal of Business Education 4(1)* pp.29 – 36
Available : www.cluteinstitute.com/ojs/index/php/AJBE/article/view/1271/1255
Accessed 16 August 2017

Kalyuga, S., Ayres, P., Chandler, P., and Sweller, J. (2003) 'The expertise Reversal Effect' *Educational Psychologist, 38(1) 23-31,* Academic Search complete EBSCOhost Accessed 16 August 2017

Keane, E. (2011) 'Dependence-deconstruction: widening participation and traditional-entry students transitioning from school to higher education in Ireland' *Teaching in Higher Education Vol. 16, No. 6*, PP 707-718 (0nline) available: DOI:10.1080/13562517.2011.570437 (Accessed 15 August 2017)

Kim, R., Olfman, L., Ryan, T, and Eryilmaz, E. (2014) 'Leveraging a personalised system to improve self-directed learning in online educational environments' *Computers & Education 70* pp.150-160
Available at: doi:10.1016/j.compedu.2013.08.006 Accessed 16 August 2017

Learning theories (2016), Retrieved from http://www.learning-theories.com/constructivism.html Accessed June 6 2016

Leppink, J., Paas, F., Van Gog, T., Van der Vleuten, C. and Van Merrienboer J.J. (2014) 'Effects of pairs of problems and examples on task performance and different types of cognitive load *Learning and Instruction 30* pp 32-42
Available: doi:10.1016/j.learninstruc.2013.12.001 Accessed 21/8/2017

Lindsay, H. (2016) More than 'continuing professional development': a proposed new learning framework for professional accountants' *Accounting Education Vok 25(1)* pp,1-13 Available:doi: 10.1080/09639284.2015.1104641 Accessed 21 August 2017

Loyens, S.M.M., Magda, J. and Rikers, R.M.J (2008) 'Self-Directed Learning in Problem-Based Learning and its Relationships with Self-Regulated Learning' *Educational Psychology Review, 20 411-427*
Available: doi: 10.1007/s10648-008-9082-7 Accessed 16 August 2017

McCoy,S. and Smith,E. (2011) 'Higher education expansion and differentiation in the Republic of Ireland' *Higher Education March 2011* Vol. 61 PP. 243–260 Available at http://link.springer.com/article/10.1007/s10734-010-9375-x Accessed 15 August 2017

Moodle.org https://moodle.org/ Accessed 21/7/2017

Nicholas, A and Lewis, J. (2011) 'Is free really cost effective? A case study of open access e-textbook usage in several undergraduate business courses' *Proceedings of the Northeast business & economics association* pp 350-354 Available: Business source complete, EBSCOhost, accessed 19 August 2017

Pan, P. & Pereira, H. (2012) 'Market relevance of university accounting programs: Evidence from Australia' *Accounting Forum vol. 36* PP 91-108, Science Direct, EBSCOhost, accessed 15 August 2017

Pathways Commission (2012) 'Charting a National Strategy for the Next Generation of Accountants' *American Accounting Association Available at* http://www.aicpa.org/press/inthenews/pages/pathways-commission-on-accounting-higher-education
Accessed 30/7/2017

Pintrich, P.R. (1988) 'A process oriented view of student motivation and cognition' *New directions for institutional research issue 57*
Available: doi: 10.1002/ir.37019885707 Accessed 21 August 2017

Pintrich, P.R. and De Groot, E.V. (1990) 'Motivational and Self-Regulated Learning Components of Classroom Academic Performance' *Journal of Educational Psychology vol 82* pp33-40 Available:doi;10.1037/0022-0663.82.1.33 Accessed 21 August 2017.

Prince, M (2004) 'Does Active Learning Work? A review of the Research'. *Journal of Engineering Education* pp223-231
Available: doi:10.1002/j.2168-9830.2004.tb00809.x Accessed 21 August 2017

Renkl, A.,and Atkinson, R. K. (2003). 'Structuring the transition from example study to problem solving in cognitive skill acquisition: A cognitive load perspective' *Educational Psychologist, 38(1)* pp.15–22*,* Academic Search Complete, EBSCOhost, Accessed 16 August 2017

Schnotz, W. and Kurschner, W (2007) 'A reconsideration of cognitive load theory' *Educational Psychology Review, 19,* pp.469 – 508
Available: doi:10.1007/s10648-007-9053-4 Accessed 16 August 2017

Shepperd J.A., Grace, J.L. and Koch, E.J. (2008) 'Evaluating the Electronic Textbook: Is It Time to Dispense With the Paper Text?' *Teaching of Psychology 35* pp. 2-5 Available: doi: 10.1080/00986280701818532 Accessed 16 August 2017

Sikkema S.E. and Sauerwein, *J.A.(2015) '* Exploring culture specific learning styles in accounting education' *Journal of International Education in Business Vol 8 no. 2 2015* pp.78-91 ,Available: doi:10.1108/JIEB-08-2015-0019 accessed 15 August 2017

Smith, P. (2001) 'Understanding Self-Regulated Learning and its Implications for Accounting Educators and Researchers'. *Issues in Accounting Education 16(4)* pp.663-700 Academic OneFile, EBSCOhost Accessed 16 August 2017

Stice, E.K. & Stice, J.D. (2006) 'Motivation on day one: The use of Enron to capture student interest' *Journal of Accounting Education, Vol 24, Special edition:Colloqium on Change in Accounting Education* pp. 85 -96 Available:
doi: 10.1016/j.jaccedu.2006.07.008 Accessed 15 August 2017

Sweller, J. (1988) 'Cognitive load during problem solving: Effects on learning *Cognitive Science 12* pp 257-285 Available: doi: 10.1016/0364-0213(88)90023-7 Accessed 21/8/2017

Tan, L.M. and Laswad, F. (2015) 'Academic Performance in Introductory Accounting: Do Learning Styles Matter?' *Accounting Education: an international journal Vol 24, No.5* PP383-402 Available: doi: 10.1080.09639284.2015.1075315 accessed 15 August 2017

Teaching commons (2016)
https://teachingcommons.stanford.edu/resources/learning-resources/promoting-active-learning Accessed 8/6/2016

Terry, L.S. (2008) 'The Bologna Process and Its Impact in Europe: It's So Much More than Degree Changes' *Vanderbit Journal of Transnational Law Vol. 41,1 PP. 107-228* Academic Search Complete, EBSCOhost accessed 15 August 2017

Toepoel, V. (2016) *Doing Surveys Online* Los Angeles:Sage Publications Ltd

Turner, S.F. Cardinal, L.B. and Burton, R.M. (2017) 'Research design for mixed methods:A triangulation- based Framework and Roadmap' *Organizational Research Methods Vol 20(2)* pp. 243-267 Available:doi: 10.1177/1094428115610808 Accessed 16 August 2017

Van Merrienboer, J.J.G., and Sweller, J. (2005) ‘Cognitive load theory and complex learning: Recent Developments and Future Directions’. *Educational Psychology Review, 17,* pp 147-177 Available: doi: 10.1007/s10648-005-3951-0 Accessed 16 August 2017

Vygotsky, L.S. (1978) *Mind in Society: the development of higher mental processes* (Cambridge, Harvard University Press)

Wass, R and Golding, C. (2014) ‘Sharpening a tool for teaching: The zone of proximal development’ *Teaching in Higher Education, Vol 19(6)* pp.671-684 Available:doi: 10.1080/13562517.2014.901958 Accessed 15 August 2017

Webster, S., Lewis, J. and Brown, A. (2014) ‘Ethical Considerations in Qualitative Research’ in Ritchie, J., Lewis, J., McNaughton, C. and Ormston, R., eds *Qualitative Research Practice: A guide for social science students and researchers* 2nd ed , London, Thousand Oaks, New Delhi, Singapore: Sage Publications Ltd, pp 77-110

Wells, M.J.C. (2011) ‘Framework-based Approach to Teaching Principle-based Accounting Standards’ *Accounting Education: an international journal 20(4) P.303-316* Available:doi:10.1080/09639284.2011.569128 Accessed 16 August 2017

# Appendices


| | | Page |
|---|---|---|
| 1. | Student survey | 43 |
| 2. | Student information leaflet | 46 |
| 3. | Staff survey | 47 |
| 4. | Analysis of student survey data | 49 |
| 5. | Sample chapters and End of Section Example | 51 |
| 6. | Analysis of textbook usage on similar courses within the Irish third level sector | 157 |

# APPENDIX 1

## Student Survey

*The purpose of this survey is to obtain feedback from you on your opinion of the three sample chapters from the company accounts study manual resource. The three sample chapters are: Financial Instruments, Construction Contracts and Deferred Tax. The information contained in this survey is completely confidential and is to be used as the basis for a dissertation which I am compiling as part of a Masters in Training and Education. On completion of that Masters I will destroy all completed surveys.*

*Loretta Kyne*

When answering each question please tick √ the appropriate box or answer in the box provided.

1) Are you attending the full time or part-time course?

| | |
|---|---|
| Full time | |
| Part time | |

2) What age bracket are you in?

| | |
|---|---|
| 20-30 | |
| 30-40 | |
| 40+ | |

3) Do you find financial Accounting?

| | |
|---|---|
| Very easy | |
| Easy | |
| Not so Easy | |
| Difficult | |
| Very difficult | |

4) How clearly did the study resource chapters explain the course material?

| | Chapter 1 Financial Instruments | Chapter 2 Construction Contracts | Chapter 3 Deferred Tax |
|---|---|---|---|
| Extremely clearly | | | |
| Very clearly | | | |
| Clearly | | | |
| Not so clearly | | | |
| Not at all clearly | | | |

5) Which chapter did you think was the most helpful?

| | |
|---|---|
| Financial Instruments | |
| Construction contracts | |
| Deferred tax | |

6) What parts of the chapter selected at 5 above did you particularly like?

7) Were there any aspects of the sample chapters that you did not like?
Please Explain

8) Do you think that this study resource would be useful for a student who is studying the material independently?

| | |
|---|---|
| Extremely useful | |
| Very useful | |
| Useful | |
| Not so useful | |
| Not at all useful | |

9) Was there any other material that you think should have been included in these chapters?

| |
|---|
| |

10) Would you be willing to participate in a follow up interview regarding the material covered in these chapters and your opinion of same?
[*ANY INFORMATION GIVEN AT A FOLLOW-UP INTERVIEW WILL BE TREATED WITH ABSOLUTE CONFIDENTIALITY AND WILL BE DESTROYED ONCE MY DISSERTATION IS COMPLETED]*

| | |
|---|---|
| Yes | |
| No | |

If YES can you please supply your name and mobile phone number

Name_____

Mobile number_____

**THANK YOU FOR PARTICIPATING IN THIS SURVEY. YOUR FEEDBACK IS VERY IMPORTANT .**

# APPENDIX 2

**Information sheet for participants in survey**

My name is Loretta Kyne and I am currently studying for an MA in training and education. As part of that course I am carrying out a piece of research and reporting on my findings. In order to satisfy the requirements of the course and in anticipation of helping future IT Tallaght accounting students I have decided to compile a study resource. This study resource will be a company accounts study manual which will be available to future students to download and to use as part of their independent study. It may also be used in a limited way in class. This resource will be informed by the outcome of my research and findings will be taken into consideration in producing the final manual.

As part of my research, as explained to you some weeks ago, I have used this material in class over the last few weeks and I would now hope that many of you will do the survey which I have given out in class.

There is no obligation to take part but if you do so you will be helping to improve this study resource and to make it more useful for those students attending this course in the future.

All answers are anonymous – I will use the responses in my research to improve the study resource and to write up my findings as part of my dissertation.

If you decide to put your name forward for a follow –up interview details of your name and mobile number should be included on the survey. If you do not want to include them on the survey form but would like to participate in follow up interviews please send me your contact details by e-mail.

I give my assurance that all information gathered as part of this research will be destroyed after graduation or in 24 months, whichever is sooner.

If you wish to contact me before taking part in the survey my contact details as always are (01) 4042303 or by e-mail Loretta.kyne@ittdublin.ie

# Appendix 3

## Staff Survey

*The purpose of this survey is to obtain feedback from you on your opinion of the three sample chapters from the company accounts study manual resource. The three sample chapters are: Financial Instruments, Construction Contracts and Deferred Tax. The information contained in this survey is completely confidential and is to be used as the basis for a dissertation which I am compiling as part of a Masters in Training and Education. On completion of that Masters I will destroy all completed surveys.*

*Loretta Kyne*

**THANK YOU FOR PARTICIPATING IN THIS SURVEY. YOUR FEEDBACK IS VERY IMPORTANT.**

When answering each question please tick √ the appropriate box or answer in the box provided.

1) How clearly did the study resource chapters explain the course material?

| | Chapter 1 Financial Instruments | Chapter 2 Construction Contracts | Chapter 3 Deferred Tax |
|---|---|---|---|
| Extremely clearly | | | |
| Very clearly | | | |
| Clearly | | | |
| Not so clearly | | | |
| Not at all clearly | | | |

2) Which chapter did you think was the most helpful?

| | |
|---|---|
| Financial Instruments | |
| Construction contracts | |
| Deferred tax | |

3) What parts of the chapter selected at 2 above did you particularly like?

4) Were there any aspects of the sample chapters that you did not like? Please Explain

5) Do you think that this study resource would be useful for a student who is studying the material independently?

| | |
|---|---|
| Extremely useful | |
| Very useful | |
| Useful | |
| Not so useful | |
| Not at all useful | |

6) Was there any other material that you think should have been included in these chapters, or have you any suggestions to improve the material?

# Appendix 4

# Summary Analysis of data

# (responses to closed-ended questions only)

**Question 2 What age bracket are you in?**

| 20-30 | 30-40 | 40+ |
|---|---|---|
| 56% | 28% | 16% |

**Question 3 Do you find financial Accounting?**

| | |
|---|---|
| Very easy | 0% |
| Easy | 24% |
| Not so easy | 51% |
| Difficult | 23% |
| Very difficult | 2% |

**Question 4 How clearly did the study resource chapters explain the course material?**

| | FI | CC | DT |
|---|---|---|---|
| Extremely clearly | 14% | 27% | 18% |
| Very clearly | 29% | 36% | 34% |
| Clearly | 52% | 31% | 41% |
| Not so clearly | 5% | 6% | 7% |
| Not at all clearly | 0% | 0% | 0% |

**Question 5 Which chapter did you think was the most helpful?**

| | |
|---|---|
| Financial Instruments (FI) ) | 19% |
| Construction contracts (CC) | 65% |
| Deferred tax (DT) | 16% |

| **Question 8** | **Do you think that this study resource would be useful for a student who is studying the material independently?** |
|---|---|
| Extremely useful | 42% |
| Very useful | 42% |
| Useful | 14% |
| Not so useful | 2% |
| Not at all useful | 0% |

# Appendix 5 – sample chapters and end of section example


| | | Page |
|---|---|---|
| (1) | Financial Instruments chapter | 52 |
| (2) | Construction contracts chapter | 81 |
| (3) | Deferred Tax chapter | 129 |
| (4) | Girder PLC – end of section example and suggested solution | 147 |

# FINANCIAL INSTRUMENTS

This chapter explains the accounting treatment of financial instruments. It focuses on the following learning outcome:

On successful completion of this module the learner will be able to:

Apply and discuss the IFRS requirements in relation to the accounting treatment of Financial Instruments

**Introduction**

Financial instruments is a complex topic the accounting treatment and disclosure of which is detailed in three separate IFRS/IAS:

IAS 32: Financial Instruments: Presentation

IFRS 7: Financial Instruments: Disclosures

IFRS 9: Financial Instruments

The material in this chapter includes:

- Framework revision
- Relevant definitions
- Difference between equity and liabilities as highlighted in the treatment of redeemable and irredeemable preference shares.
- Accounting treatment of financial assets
- Accounting treatment of financial liabilities
- Accounting treatment of compound financial instruments
- Disclosures

**Framework revision**

**Definition: Asset Conceptual Framework Para 4.4**

“A resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity.”

**Recognition of an asset Conceptual Framework Para 4.44**

“An asset is recognised in the balance sheet when it is probable that the future economic benefits will flow to the entity and the asset has a cost or value that can be measured reliably.”

**Definition: Liability Conceptual Framework Para 4.4**

“A liability is a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow of resources embodying economic benefits.”

**Recognition of a liability Conceptual Framework Para 4.46**

“A liability is recognised in the balance sheet when it is probable that an outflow of resources embodying economic benefits will result from the settlement of a present obligation and the amount at which the settlement will take place can be measured reliably”

**Definition: Equity Conceptual Framework Para 4.4**

“Equity is the residual interest in the assets of the entity after deducting all its liabilities”

**Definitions**

A **financial instrument**
is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity. (IAS 32 para 11)

| | |
|---|---|
| A financial asset is any asset that is :<br>a) Cash<br>b) An equity instrument of another company<br><br>c) A contractual right:<br>(i) To receive cash or another financial asset from another entity; or<br><br>(ii) To exchange financial assets or financial liabilities with another entity under conditions that are potentially favourable to the entity | **Examples**<br>Cash<br>Shares owned in another entity<br><br>Receivables, Loans and bonds receivable.<br><br>Derivatives at profit eg warrant |
| d) A contract that will or may be settled in the entity's own equity instruments and is<br>(i) A non-derivative for which the entity is or may be obliged to receive a variable number of the entity's own equity instruments; or<br><br>(ii) A derivative that will or may be settled other than by the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments (IAS 32 para 11) | |

IAS 32 Application guidance indicates that physical assets (eg PPE, leased assets) and intangible assets are not financial assets. Nor are prepayments.

A derivative is a financial instrument with all three of the following characteristics:

a) Its value changes in response to the change in a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index, or other variable…
b) It requires no initial net investment or an initial net investment that is smaller than would be required for other types of contacts that would be expected to have a similar response to changes in market factors.
c) It is settled at a future date

Examples of derivatives include forward contracts and warrants. A forward contract is a "contract to buy or sell some item at some time in the future at a price established when the contract is entered into" (*Brigham, Erhardt, Fox 2016)*

A warrant "allows the holder to buy a stated number of shares from the company at a specified price" *(Brigham, Erhardt, Fox, 2016)*

| A financial liability is any liability that is : | **Example** |
|---|---|
| a) A contractual obligation: | |
| (i) To deliver cash or another financial asset to another entity; or | Payables, loans payable |
| (ii) To exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavourable to the entity | Derivatives at loss |
| b) A contract that will or may be settled in the entity's own equity instruments and is A non-derivative for which the entity is or may be obliged to deliver a variable number of the entity's own equity instruments; or | Convertible bond |
| A derivative that will or may be settled other than by the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments (IAS 32 para 11) | A written option to buy gold which is to be settled in the entity's own equity instruments |

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities

IAS 32 application guidance points out that liabilities which arise from statutory obligations eg corporation tax liabilities are not financial liabilities.

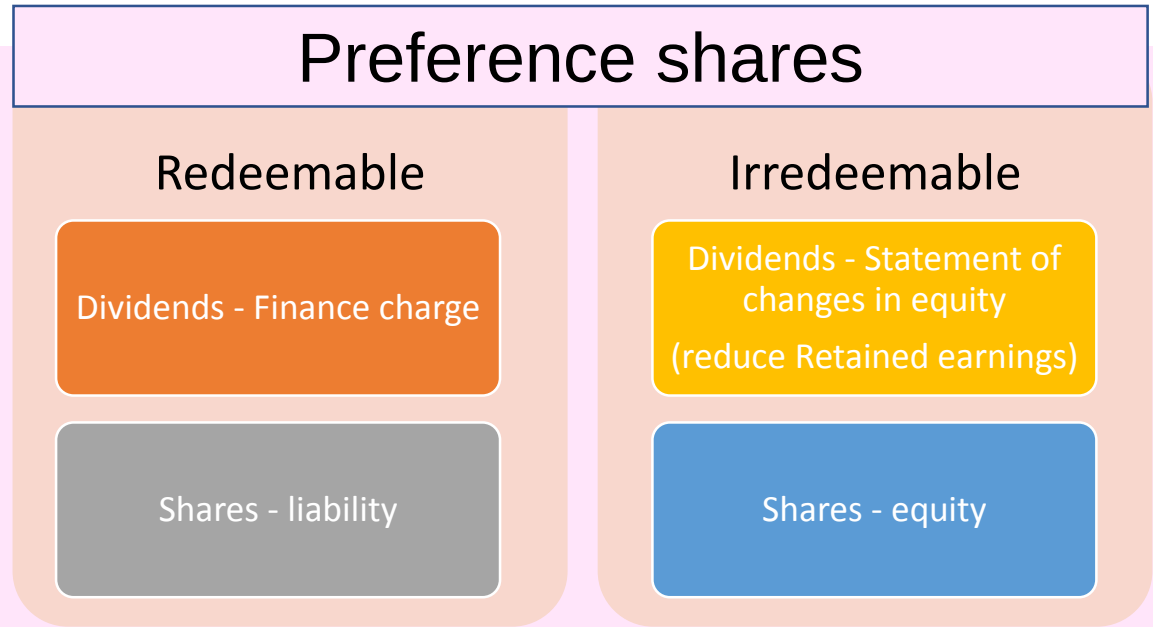
**Equity vs liability**

IAS 32 (paragraph 15) states that the issuer of a financial instrument must initially recognise the full instrument or its component parts (see compound financial instruments) as a financial asset or a financial liability or equity instrument "in accordance with the substance of the contractual arrangement" and the definitions contained in the standard.

Paragraph 25 of the additional guidance to IAS 32 considers how preference shares should be analysed – as equity or a financial liability. This guidance indicates that redeemable preference shares should be categorised as financial liabilities as they include an obligation to deliver cash to another entity – ie when they are redeemed/repaid. Redeemable preference shares also satisfy the Conceptual Framework definition of a liability – a present obligation which will require an outflow of economic resources (in this case cash) to settle the obligation.

Paragraph 26 of this guidance considers irredeemable preference shares and how these should be analysed. As these are not redeemable no obligation exists to deliver cash to another entity. So other characteristics of the irredeemable preference shares need to be considered to assess whether they should be analysed as liabilities or equity instruments. Where payments of dividends to holders of such shares are at the discretion of the issuer such shares are considered equity. In the case of our examples it is assumed that all irredeemable preference shares qualify as equity instruments.

A summary of the treatment of preference shares and related dividends are set out below for both redeemable and irredeemable shares:



**Worked example 1**

On 1 June 2015 Zebra PLC issued 2,000,000 €1 irredeemable 6% preference shares and on 1 September 2015 the company issued 3,000,000 €1 redeemable 5% preference shares. The redeemable preference shares are redeemable on 1 September 2025.

**Requirement:**

Show extracts from the Statement of Comprehensive Income (SOCI), Statement of Changes in Equity (SOCE) and Statement of Financial Position (SOFP) of Zebra PLC for for years ended 31 May 2016 and 2017 to show the impact of the preference shares assuming that dividends due in respect of the irredeemable shares were paid on 31 May of the relevant year, whilst the dividends on the redeemable shares were paid on 31 August each year.

**Solution Worked example 1**

**Workings**

Value of irredeemable shares 2,000,000 x €1 = €2,000,000

Dividend for y/e 31/5/2016 & 2017 6% of €2,000,000 = €120,000

Value of redeemable shares 3,000,000 x €1 = €3,000,000

Dividend for 9 months (to 31/5/2016) 5% of €3,000,000 x 9/12= €112,500

Dividend for 2017 (year) 5% of €3,000,000 = €150,000

**Zebra PLC**

**Statement of Comprehensive Income**

**For the year ended 31 May 2017**

| | 2017 | 2016 |
|---|---|---|
| | € | € |
| **Finance charge** | | |
| Redeemable preference dividend | 150,000 | 112,500 |

**Zebra PLC**
**Statement of Changes in equity**
**For the year ended 31 May 2017**
**(Retained earnings only)**

| | 2017 | 2016 |
|---|---|---|
| Opening balance | xxx | xxxx |
| Profit for year | xxx | xxx |
| Irredeemable preference dividend | (120,000) | (120,000) |
| Closing balance | xxx | xxx |

**Zebra PLC**

**Statement of Financial Position**

**As at 31 May 2017**

| | 2017 | 2016 |
|---|---|---|
| | € | € |
| **Equity and liabilities** | | |
| **Equity** | | |
| 6% Irredeemable preference shares | 2,000,000 | 2,000,000 |
| **Non-current liabilities** | | |
| 5% Redeemable preference shares | 3,000,000 | 3,000,000 |
| **Current liabilities** | | |
| Dividend payable on redeemable shares | 150,000 | 112,500 |

**Financial Assets – accounting treatment**

In order to be treated as a financial asset an element must firstly satisfy the definition of an asset as set out in the conceptual framework – a resource controlled by the entity as a result of past events and from which future economic benefits will be attained by the entity. Once the item is classified as an asset the definition of a financial asset should be considered to assess if the asset should be considered a financial asset. Once an entity is satisfied that they do indeed control a financial asset they need to consider the appropriate accounting treatment of that asset.

The accounting treatment of financial assets set out in IFRS 9 requires them to be measured at amortised cost, fair value through other comprehensive income or fair value through profit or loss depending on two factors set out below:

a) The entity's business model for managing the financial assets and
b) The contractual cash flow characteristics of the financial asset

Although the amortised cost or Fair value through other comprehensive income categories may suit the characteristics of some financial assets all financial assets may be categorised as fair value through profit and loss as this is the default category for all financial assets.

| Category | Characteristics | Accounting treatment |
|---|---|---|
| **Amortised cost**<br>*Example: loans, debentures, loan stock* | Business model: Hold asset to collect contractual cash flows<br>Contract gives rise to cash flows on specific dates consisting solely of principal and interest on principal amount outstanding | Use effective interest rate to build up asset to amount receivable on redemption. Finance income calculated based on effective rate and included in profit,<br>Directly attributable transaction costs added to cost of asset. |
| **Fair value through other comprehensive income (FVOCI)**<br>*Examples: equity shares (except those held for trading). Must make irrevocable election to treat equity investments in this way at acquisition.* | Business model: Hold asset to collect contractual cash flows and also sell assets<br>Contract gives rise to cash flows on specific dates consisting solely of principal and interest on principal amount outstanding. | Assets shown in SOFP at fair value.<br>Movement in fair value included in other comprehensive income.<br>Directly attributable transaction costs added to cost of asset. |

| | | |
|---|---|---|
| **Fair value through profit and loss (FVTPL)**<br>*Examples: equity investments held for trading but*<br>*Default category* | Where not classified as fair value through other comprehensive income or amortised cost | Assets shown in SOFP at fair value.<br>Movement in fair value included in profit. Directly attributable transaction costs treated as expense in the year acquired. |

**Worked example 2**

Zebra Plc acquired a number of financial investments in the year ended 31 May 2017. Details of the investments acquired are as follows:

Shares in a public company, Lion PLC which it intends to hold for trading. Total cost of this investment on 1 September 2016 was €35,000 and the shares have a value of €41,000 at 31May 2017.

Shares in another public company, Bear PLC, which has only recently had its shares listed. Zebra PLC plans to hold these shares in the long term anticipating significant dividends as well as capital appreciation over the next five to ten years. These shares cost €53,000 on 3 February 2017 and their value at 31 May 2017 was €49,000. Zebra PLC made an irrevocable election at acquisition to treat these shares at fair value through other comprehensive income.

Zebra PLC also acquired €200,000 in 5% loan stock of a public company Giraffe PLC. The plan is to hold this loan stock until maturity. The loan stock was acquired on 1 June 2016. It had been issued at a discount of 10% and when the loan stock is redeemed in 2025 it will be redeemed at a premium. The effective rate of interest on this loan stock is 7%.

Bear PLC paid a dividend of €1,000 to Zebra PLC on 10th May 2017. Interest arising on the loan stock was received from Giraffe PLC half yearly in arrears on 30 November and 31 May 2017.

**Requirements:**

Show extracts from the SOCI for the year ended 31 May 2017 and from the SOFP of Zebra PLC at 31 May 2017 to reflect the impact of these investments.

**Solution Worked example 2**

**Workings:**

| | |
|---|---|
| Increase in value of shares in Lion PLC €6,000<br>**[€41,000 - €35,000]** | Include this in finance income in SOCI.<br>This investment is classified as FVTPL as it is held for sale. |
| | Include investment in current assets (short term investment) |
| | |
| Decrease in value of shares in Bear PLC €4,000<br>**[€53,000 - €49,000]** | Include this in other comprehensive income, as a negative amount.<br>This investment is classified as FVOCI because an irrevocable election was made at acquisition to deal with these investments in this way. |
| Dividend of €1,000 from Bear PLC | Include in finance income |
| | Include investment in non-current assets. |
| | |
| Loan stock held in Giraffe PLC | Account for this investment under the amortised cost method using the effective rate of interest.<br>Include investment in non-current assets. |

**Point to note:**

Loan stock in Giraffe Ltd is categorised as an amortised cost investment. Alternative treatment would be to show this as FVTPL.

**Amortised cost accounting for investment in Giraffe PLC:**
Amount of asset is the amount paid for asset including directly attributable costs of acquisition and after deducting discount on issue. In this case an amount of €200,000 x 90% = €180,000

Finance income for the year is the opening balance of the asset (the cost) multiplied by the effective rate of interest. The effective rate of interest recognises not only the actual income received in respect of the investment but also any difference between the amount paid for the asset and the amount that will be received when the investment is redeemed. The asset is therefore built up over the period of ownership in this way.

Using this approach for the loan stock in Giraffe PLC the finance income for the year to 31/5/2017 will be €12,600 [€180,000 x 7%]

The loan stock will be shown in non-current assets as they will not be redeemed until 2025. The amount at which they will be shown is:

| | € |
|---|---|
| Opening balance (cost) | 180,000 |
| Finance income | 12,600 |
| Amount received<br>**€200,000 x 5%** | (10,000) |
| Closing balance (SOFP) | 182,600 |

**Point to Note:**

Interest received on loan stock will always be based on the coupon rate (in this case 5%) and will be that percent of the NOMINAL value of the loan stock.

**Zebra PLC**
**Statement of Comprehensive Income**
**For the year ended 31 May 2017**

| | € |
|---|---|
| **Finance Income** | |
| Increase in fair value of shares in Lion PLC | 6,000 |
| Dividend from Bear PLC | 1,000 |
| Loan stock income | 12,600 |
| | 19,600 |
| **Other comprehensive income** | |
| Decrease in fair value of shares in Bear PLC | (4,000) |

**Zebra PLC**
**Statement of Financial Position**
**As at 31 May 2017**

| **Non-current assets** | **€** |
|---|---|
| **Financial Investments** | |
| Shares in Bear PLC | 49,000 |
| Loan stock in Giraffe PLC | 182,600 |
| **Current assets** | |
| Shares in Lion PLC | 41,000 |
| **Equity** | |
| FVOCI reserve | (4,000) |

**Derecognition of financial assets**

A financial asset is derecognised when either:

I. The contractual rights to receive the cash flows from the asset expire OR
II. The entity transfers the asset to another entity.

**Worked example 3**

In the year ended 31 May 2018 the following took place, as regards the investments detailed in Worked example 2 above:

Shares in Lion PLC were sold for €50,000. A dividend of €3,000 was received by Zebra PLC from Bear PLC. The shares in Bear PLC were valued at 56,000. The full amount of interest income for the year ended 31M ay 2018 was received from Giraffe PLC.

**Requirements:**

Show extracts from the financial statements of Zebra PLC for the year ended 31 May 2017 to reflect the impact of these investments.

**Solution Worked example 3**

**Workings**

Finance income

Lion PLC shares – profit on disposal. Proceeds less carrying value €50,000 - €41,000 = €9,000.

Bear PLC dividend €3,000

Giraffe PLC Opening balance x effective interest rate €182,600 x 7% = €12,782

Other comprehensive income

Bear PLC – increase in value of shares €7,000 [€56,000 - €49,000]

Loan stock value at end of year

| | **€** |
|---|---|
| Opening balance | 182,600 |
| Finance income | 12,782 |
| Amount received<br>**€200,000 x 5%** | (10,000) |
| Closing balance (SOFP) | 185,382 |

**Zebra PLC**
**Statement of Comprehensive Income**
**For the year ended 31 May 2018**

| | € |
|---|---|
| **Finance Income** | |
| Profit on disposal of shares in Lion PLC | 9,000 |
| Dividend from Bear PLC | 3,000 |
| Loan stock income | 12,782 |
| | 24,782 |
| **Other comprehensive income** | |
| Increase in fair value of shares in Bear PLC | 7,000 |

**Zebra PLC**
**Statement of Financial Position**
**As at 31 May 2018**

| **Non-current assets** | **€** |
|---|---|
| **Financial Investments** | |
| Shares in Bear PLC | 56,000 |
| Loan stock in Giraffe PLC | 185,382 |
| **Current assets** | |
| Shares in Lion PLC | 0 |
| **Equity** | |
| FVOCI reserve | 3,000 |

**See also Student example 1 (SE 1) at end of chapter.**

**Financial Liabilities – accounting treatment**

IFRS 9 (Para 4.2.1) states that all financial liabilities should be classified as measured at amortised cost with some exceptions. These exceptions are **not** examinable on this course. The measurement of financial liabilities at amortised cost is similar to measuring financial assets at amortised cost. The worked example below shows this from a financial liability perspective.

**Worked example 4**

Zebra PLC issued €2,500,000 9% debentures at a discount of 2% on 1 June 2015. Costs of issue totalled €70,000. Zebra PLC intends to redeem the debentures on 31 May 2021 at a premium of 9.6%. The effective rate of interest applicable to these debentures is 11%.

**Requirements:**

Show extracts from the SOCI, and SOFP of Zebra PLC for the years ended 31 May 2016, 2017 and 2018 to reflect the impact of these debentures.

**Solution Worked example 4**

**Workings**

| | **€** | **€** | **€** |
|---|---|---|---|
| | **2016** | **2017** | **2018** |
| **Opening balance** | *2,380,000 | 2,416,800 | 2,457,648 |
| **Finance charge [Opening balance x 11% - effective interest rate** | 261,800 | 265,848 | 270,341 |
| **Interest paid [Nominal value x coupon rate][€2,500,000 x 9%]** | (225,000) | (225,000) | (225,000) |
| **Closing balance** | 2,416,800 | 2,457,648 | 2,502,989 |

| *** Opening balance 1/6/2015** | **€** |
|---|---|
| Nominal value of debentures issued | 2,500,000 |
| Less discount on issue **[2% of €2,500,000]** | (50,000) |
| Less costs of issue | (70,000) |
| Opening balance (net proceeds) | 2,380,000 |

**Zebra PLC**
**Statement of Comprehensive Income**
**For the years ended 31 May**

| | 2018 | 2017 | 2016 |
|---|---|---|---|
| | € | € | € |
| Finance charge | 270,341 | 265,848 | 261,800 |

**Zebra PLC**
**Statement of Financial Position**
**As at 31 May**

| | 2018 | 2017 | 2016 |
|---|---|---|---|
| | € | € | |
| **Non-current liabilities** | | | |
| **9% Debentures** | 2,502,989 | 2,457,648 | 2,416,800 |

**See also SE 2 at end of chapter.**

**Derecognition of financial liabilities**

A financial liability should be removed from the entity's SOFP when "it is extinguished" (IFRS 9 (PARA 3.3.1). In other words it is only removed when the liability no longer exists because it has been discharged, cancelled or has expired (3.3.1)

## Compound financial instruments - Accounting treatment

An entity issuing a financial instrument needs to evaluate it to see if it includes both a liability and an equity component, (IAS 32 para 28). Where there are separate elements of the financial instrument these elements needs to be “classified separately”. Examples of compound financial instruments include convertible bonds or convertible debentures. These are both debt instruments (Financial liabilities) which normally pay a lower rate of interest than an equivalent non-convertible liability because they give another benefit to the holder of the bond. That extra benefit is an equity instrument being an option to the holder to convert these bonds/debentures to shares of the entity during a specified period in the future. This conversion option is at the discretion of the holder meaning the holder can decide to convert if the terms of conversion prove favourable at the time when conversion is due to take place. Equally the holder can decide not to convert if that appears more financially beneficial.

On initial issue of the compound financial instrument the cash flows payable in respect of the instrument – both interest and principal are calculated and then discounted to present value using the **rate applicable to similar instruments without the conversion option.** The value of the discounted cash flows is then compared with the value of the proceeds of issue of the instrument and the difference is taken to be the equity element, whilst the debt element is the discounted value of the cash flows.

### Worked example 5

Zebra PLC issued 3,000 convertible debentures on 1 June 2016. The debentures have a four-year term and are issued at par with a face value of €500 each. Interest of 5% is payable annually in arrears. At the time of issue of these debentures the prevailing market rate of interest for debentures without a conversion option is 8%.

### Requirements

(a) Calculate the value of the liability and equity elements of the convertible debentures on issue date , 1 June 2016

(b) Calculate the value of these elements at 31 May 2017 and show extracts from the Statement of Comprehensive Income of Zebra PLC for the year ended 31 May 2017 and the Statement of Financial Position as at 31 May 2017 to reflect the impact of the convertible debentures

**Part (a) Solution Worked example 5**

**Step 1** Calculate the value of the debenture at initial issue

3,000 x 500 = €1,500,00

**Step 2** Calculate the cash flows payable over the term of the debenture by way of interest and on redemption.

| Date | Details | € | Note |
|---|---|---|---|
| 31/5/2017 | Interest €1,500,000 x 5% | 75,000 | Actual interest payable included here |
| 31/5/2018 | | 75,000 | |
| 31/5/2019 | | 75,000 | |
| 31/5/2020 | | 1,575,000 | Interest plus principal |

**Step 3** Discount the cash flows using the rate applicable to similar non-convertible debentures

| Date | Cash flows | Discount Factor | Discounted Cash flows |
|---|---|---|---|
| | € | 8% | € |
| **31/5/2017** | **75,000** | **0.926** | **69,450** |
| **31/5/2018** | **75,000** | **0.857** | **64,275** |
| **31/5/2019** | **75,000** | **0.794** | **59,550** |
| **31/5/2020** | **1,575,000** | **0.735** | **1,157,625** |
| | | **Total** | **1,350,900** |

**Step 4** Value liability and equity elements. Liability at initial issue is the value of the discounted cash flows €1,350,900.

Equity value is the difference between the proceeds of the issue and the value of the liability.

Proceeds of issue (from step 1) are €1,500,000

Value of liability (from step 3) is €1,350,900

Equity element is €149,100
**[€1,500,000 - €1,350,900]**

**Part (b) Solution**

**Value of liability at end May 2017**

| | | |
|---|---|---|
| Value at 1/6/2016 | 1,350,900 | |
| Finance charge<br>**[€1,350,900 x 8%]** | 108,072 | |
| Paid to debenture holders | (75,000) | Annual interest payment |
| Value of liability at 31/5/2017 | 1,383,972 | |

**Zebra PLC**

**Statement of Comprehensive Income**

**For the year ended 31 May 2017**

| | € |
|---|---|
| Finance charge | 108,072 |

**Zebra PLC**

**Statement of Financial Position**

**As at 31 May 2017**

| | € |
|---|---|
| **Equity and liabilities** | |
| **Equity** | |
| Convertible debentures conversion option | 149,100 |
| **Non-current liabilities** | |
| 5% convertible Debentures | 1,383,972 |

**See also SE 3 at end of chapter.**

**Disclosures**

IFRS 7 requires entities to disclose “information that enables users of its financial statements to evaluate the significance of financial instruments for its financial position and performance (Para 7)

In order to enable users to evaluate the significance of financial instruments there is a requirement that the carrying value of each of the following categories of financial asset be disclosed separately either in the statement of financial position or in the notes thereto:

Financial assets at:

I. Amortised cost
II. FVTPL
III. FVOCI – further information required re this category – detailing investments held within this category and the reason for using this presentation for such investments.

Financial liabilities at
I. Amortised cost
II. FVTPL

**SOCI disclosures**
Items of income, expenses, gains and losses arising from each category of financial asset and liability.

The accounting policy of the entity used to measure and present financial instruments should also be disclosed.

## Student examples

### SE 1

Oak PLC acquired the following investments during the year ended 28 February 2016:

Shares in Blue PLC acquired on 1 May 2015 for €260,000 plus acquisition costs of €4,500. The intention is to hold these shares for trading. The shares were still owned by the company at 28 February 2016 and their fair value was €280,000. The shares were sold for €301,000 on 10 April 2016.

Shares in Red PLC were acquired on I August 2015 for €114,000 plus costs of €2,500. The intention of Oak PLC is to hold these shares to earn a return and for capital appreciation. There is no intention to sell these shares in the near future. The value of the shares at 28 February 2016 was €118,000 and at 28 February 2017 was €130,000.

### Requirements

a) Explain how the above investments should be treated in the financial statements of Oak PLC including any alternatives available and
b) Set out extracts from the SOCI and SOFP to demonstrate those treatments for the year ended 28 February 2017 and 2016 comparatives

### SE 2

On 1 March 2016 Oak PLC issued €4,000,000 5% loan stock at par. Issue costs were €40,000. The loan stock will be redeemed after 5 years at a premium of 10%. The effective rate of interest applicable to this loan stock is 7%. Loan stock interest is payable annually in arrears on 28 February.

### Requirements

Show the journal entries required to account for the issue of the above loan stock on 1 March 2016 and to account for interest payable and changes in value of the loan stock over the two years ended 28 February 2018.

**SE 3**

Oak PLC issued €2,800,000 of convertible debentures on 1 March 2016. The debentures have a five-year term and were issued at par. Interest of 3% is payable annually in arrears on 28 February each year. At the time of issue of these debentures the prevailing market rate of interest for debentures without a conversion option is 6%.

**Requirements**

(a) Calculate the value of the liability and equity elements on issue date, 1 March 2016

(b) Calculate the value of these elements at 28 February 2017 and 2018 and show extracts from the Statement of Comprehensive Income of Oak PLC for the TWO years ended 28 February 2018 and the Statements of Financial Position as at 28 February 2017 and 2018 to reflect the impact of the convertible debentures.

**SE 4 (May 2016 IT Tallaght exam paper Semester 6 IFR 4)**

Unity PLC issued convertible loan stock on 1 January 2015. The loan stock carries a coupon rate of 4%, and is convertible in December 2019. Unity issued €2 million of this loan stock at par. Similar loan stock, issued in January 2015, and with no conversion option carried a coupon rate of 6%.

Unity issued debentures which carry a coupon rate of 7% on 2 January 2015. Issue costs associated with the debentures totalled €59,000. Unity issued €1,500,000 of the debentures at par. The debentures will be redeemed at an amount in excess of their book value in 2022. The effective interest rate on these debentures is 8.25%.

Unity PLC acquired €3,200,000 of trade investments during 2015. Investments costing €1,120,000 are intended to be held for the short term whilst the remaining investments will be held in the longer term. The fair values of the investments at 31 December 2015 were €1,080,000 and €2,250,000 respectively.

**Requirements:**

(a) Prepare extracts from the Financial Statements of Unity PLC for the year ended 31 December 2015 showing the impact of the assets and liabilities detailed above **(20 Marks)**

(b) With regard to the financial assets (only) briefly explain your treatment in the Financial Statements of Unity PLC for the year ended 31 December 2015 and explain any alternative treatments available and the circumstances under which they are available. **(6 Marks)**

**26 Marks**

**Solutions to student examples**

**SE 1**

a) **Treatment of investments in financial statements of Oak PLC:**

The investment in Blue PLC is held for trading – a short term investment held to sell.
The appropriate category of this investment is FVTPL.
There is no alternative category under which this investment could be included.
The shares will be shown in the SOFP at fair value each year within current assets as they are held in the short term.
Movement in the fair value of these investments will be included in profit 2016 €20,000 (€280,000 - €260,000).
Costs of acquisition will be included as an expense in the year ended 28 February 2016 €4,500.
The profit on the disposal of these shares of €21,000, proceeds less carrying value, [€301,000 - €280,000] will be shown in the SOCI for the year ended 28 February 2017.

The investment in Red PLC is not held for trading – as it is held for the longer term and to gain a return as well as for capital appreciation.
This investment could either be categorised under the default category of FVTPL or it could be categorised as FVOCI if an irrevocable election is made on acquisition to do so.
If categorised at FVTPL the investment in Red PLC will be treated in the same way as the investment in Blue PLC:
Increase in fair value of the shares in 2016 €4,000 [€118,000 - €114,000] and 2017 €12,000 [€130,000 - €118,000] will be included within profit.
Expenses at acquisition will be treated as an expense of €2,500 in the year ended 28 February 2016.
These shares will be shown in the statement of financial position at fair value each year – included within non-current assets as they are held for the long term.

**Oak PLC**
**Statement of Comprehensive Income**
**For the year ended 28 February 2017 (showing Red PLC investment as FVTPL)**

| | | 2017 | 2016 |
|---|---|---|---|
| | | € | € |
| **Finance Income** | | | |
| Profit on disposal of shares in Blue PLC | | 21,000 | - |
| Increase in fair value of shares categorised as FVTPL | | | |
| | - Blue | - | 20,000 |
| | Red | 12,000 | 4,000 |
| | | 33,000 | 24,000 |
| **Finance charge** | | | |
| Costs of acquisition of investments categorised as FVTPL | | | |
| | - Blue | - | (4,500) |
| | - Red | | (2,500) |
| | | - | (7,000) |

**Oak PLC**
**Statement of Financial Position**
**As at 28 February 2017**

| | 2017 | 2016 |
|---|---|---|
| **Non-current assets** | € | € |
| **Financial Investments** | | |
| Shares in Red PLC | 130,000 | 118,000 |
| **Current assets** | | |
| Shares in Blue PLC | - | 280,000 |

If the investment in Red PLC is categorised as FVOCI again the shares will be shown in the SOFP at fair value each year, movement in the fair value will be included in other comprehensive income in both years, with costs of acquisition included as part of the cost of the investment at acquisition.
So fair value movement in 2016 will be €1,500 [€118,000 – (€114,000 + €2,500)] and will be included within OCI as will movement in 2017 €12,000 [€130,000 - €118,000].

**Oak PLC**
**Statement of Comprehensive Income**
**For the year ended 28 February 2017 (showing Red PLC investment as FVOCI)**

| | 2017 € | 2016 € |
|---|---|---|
| **Finance Income** | | |
| Profit on disposal of shares in Blue PLC | 21,000 | - |
| Increase in fair value of investments categorised as FVTPL | - | 20,000 |
| | 21,000 | 20,000 |
| **Finance charge** | | |
| Costs of acquisition of investments categorised as FVTPL | - | (4,500) |
| **Other comprehensive income** | | |
| Increase in fair value of shares categorised as FVOCI | 12,000 | 1,500 |

**Oak PLC**
**Statement of Financial Position**

| **As at 28 February 2017** | **2017** | **2016** |
|---|---|---|
| **Non-current assets** | **€** | **€** |
| **Financial Investments** | | |
| Shares in Red PLC | 130,000 | 118,000 |
| **Current assets** | | |
| Shares in Blue PLC | - | 280,000 |
| **Equity** | | |
| FVOCI reserve | 13,500 | 1,500 |

**Solution SE 2**

**Workings**

| | € | € |
|---|---|---|
| | **y/e 28/2/2017** | **y/e 28/2/2018** |
| **Opening balance** | *3,960,000 | 4,037,200 |
| **Finance charge [Opening balance x 7% - effective interest rate** | 277,200 | 282,604 |
| **Interest paid [Nominal value x coupon rate][€4,000,000 x 5%]** | (200,000) | (200,000) |
| **Closing balance** | 4,037,200 | 4,119,804 |

*** Opening balance 1/3/2016** **€**

| | |
|---|---|
| Nominal value of loan stock issued | 4,000,000 |
| Less costs of issue | (40,000) |
| Opening balance (net proceeds) | 3,960,000 |

| **Journal entries** | **€** | **€** |
|---|---|---|
| **1/3/2016** | | |
| Dr Bank | 4,000,000 | |
| Cr Loan notes | | 4,000,000 |
| Being proceeds of issue of loan notes | | |
| | | |
| **1/3/2016** | | |
| Dr Loan notes | 40,000 | |
| Cr Bank | | 40,000 |
| Being offset of costs of issue of loan notes against proceeds received | | |
| | | |
| **28/2/2017** | | |
| Dr Finance charge | 200,000 | |
| Cr Bank | | 200,000 |
| Being payment of interest to holders of loan notes | | |
| | | |
| Dr Finance charge | 77,200 | |
| Cr Loan notes | | 77,200 |
| Difference in finance charge arising from applying effective interest rate to build up liability. | | |

**28/2/2018**

| | | |
|---|---|---|
| Dr Finance charge | 200,000 | |
| Cr Bank | | 200,000 |

Being payment of interest to holders of loan notes

| | | |
|---|---|---|
| Dr Finance charge | 82,604 | |
| Cr Loan notes | | 82,604 |

Difference in finance charge arising from applying effective interest rate to build up liability.

**SE 3**
**Solution**
**Workings**
**Part A**

Interest payable on debentures €2,800,000 x 3% = €84,000

| Date | Cash flow | Discount Factor | Discounted Cash flows |
|---|---|---|---|
| | € | 6% | € |
| 28/2/2017 | 84,000 | 0.943 | 79,212 |
| 28/2/2018 | 84,000 | 0.890 | 74,760 |
| 28/2/2019 | 84,000 | 0.840 | 70,560 |
| 28/2/2020 | 84,000 | 0.792 | 66,528 |
| 28/2/2021 | 2,884,000 | 0.747 | 2,154,348 |
| | | Total | 2,445,408 |

| | | |
|---|---|---|
| Value of liability element at 1 March 2016 | | €2,445,408 |
| Value of equity element | (Balancing figure) | €354,592 |
| | | €2,800,000 |

**Part B**
**Liability element**

| | € | € |
|---|---|---|
| | y/e 28/2/2017 | y/e 28/2/2018 |
| **Opening balance** | 2,445,408 | 2,508,132 |
| **Finance charge [Opening balance x 6%** | 146,724 | 150,488 |
| **Interest paid [Nominal value x coupon rate][€2,800,000 x 3%]** | (84,000) | (84,000) |
| **Closing balance** | 2,508,132 | 2,574,620 |

**Oak PLC**

**Statement of Comprehensive Income**

**For the year ended 28 February 2018**

| | 2018 | 2017 |
|---|---|---|
| | € | € |
| Finance charge | 150,488 | 146,724 |

**Oak PLC**

**Statement of Financial Position**

**As at 28 February 2018**

| | 2018 | 2017 |
|---|---|---|
| | € | € |
| **Equity and liabilities** | | |
| **Equity** | | |
| Convertible debenture option | 354,592 | 354,592 |
| | | |
| **Non-current liabilities** | | |
| 3% Debentures | 2,574,620 | 2,508,132 |

**SE 4**

**Workings**

**Unity PLC**
**Statement of comprehensive income**
**For the year ended 31 December 2015**

| | | | € |
|---|---|---|---|
| Finance income | [170-40] | | 130,000 |
| Finance charge | | Debentures | (118,883) |
| | | Loan stock | (109,858) |

**Unity PLC**

**Statement of financial position**

**As at 31 December 2015**

| | |
|---|---|
| **Non-current assets** | **€** |
| Financial assets | 2,250,000 |
| | |
| **Current assets** | |
| Financial assets | 1,080,000 |
| | |
| **Non-current liabilities** | |
| Debentures | 1,454,883 |
| Convertible loan stock | 1,860,818 |
| | |
| **Equity** | |
| Convertible loan stock reserve | 169,040 |

**Workings**

Investments held in the short term – held for trading €1,120,000.
Categorise as FVTPL so movement in Fair value to profit:
1,120,000 - €1,080,000 = €40,000 decrease

Remaining investments €3,200,000 - €1,120,000 = €2,080,000 also shown as FVTPL
Movement on fair value to profit €2,250,000 - €2,080,000 = €170,000 Increase

| **Debentures** | € |
|---|---|
| Proceeds | 1,500,000 |
| Less issue costs | (59,000) |
| Opening balance at 2/1/2015 | 1,441,000 |
| Finance charge | 118,883 |
| **[€1,441,000 x 8.25%]** | |
| Interest paid | (105,000) |
| **[€1,500,000 x 7%]** | |
| Closing balance at 31/12/2015 | 1,454,883 |

Convertible loan stock

| **Date** | **Cash flow** | **Discount** | **Discounted** |
|---|---|---|---|
| | | **Factor** | **Cash flows** |
| | **€** | **6%** | **€** |
| **31/12/2015** | **80,000** | **0.943** | **75,440** |
| **31/12/2016** | **80,000** | **0.890** | **71,200** |
| **31/12/2017** | **80,000** | **0.840** | **67,200** |
| **31/12/2018** | **80,000** | **0.792** | **63,360** |
| **31/12/2019** | **2,080,000** | **0.747** | **1,553,760** |
| | | **Total** | **1,830,960** |

| | | |
|---|---|---|
| Value of liability element at 1 January 2016 | | €1,830,960 |
| Value of equity element | (Balancing figure) | €169,040 |
| | | €2,000,000 |

**Liability element**

| | € |
|---|---|
| | **y/e 28/2/2018** |
| **Opening balance** | 1,830,960 |
| **Finance charge [Opening balance x 6%** | 109,858 |
| **Interest paid [Nominal value x coupon rate][€2,000,000 x 4%]** | (80,000) |
| **Closing balance** | 1,860,818 |

# CONSTRUCTION CONTRACTS

This chapter focuses on the accounting treatment of construction contracts. The learning outcome which learners should be able to satisfy having completed this section of their studies is:

On successful completion of this module the learner will be able to:

Apply and discuss the IFRS requirements in relation to the accounting treatment of construction contracts.

**Introduction**

Construction contracts are contracts for the construction "of an asset or a combination of assets that are closely interrelated or interdependent in terms of their design, technology and function or their ultimate purpose or use" (IAS 11 Para 4). As many of these contracts will be started in one accounting period and completed in a later accounting period the timing of the recognition of revenue and related costs is very important. IAS 11 Construction contracts is the accounting standard that currently regulates the treatment of such contracts. This standard, together with the related standard IAS 18 Revenue recognition, have now been replaced by IFRS 15 Revenue from Contracts with Customers which was issued in its current form in September 2015 but has an effective date of 1 January 2018 – meaning the rules set out in the standard only become mandatory for accounting periods ending on or after that date. Earlier implementation is however permitted. This chapter focuses on the requirements of IFRS 15, as they apply to construction contracts – these rules are also consistent with those set out in IAS 18.

The material covered in this chapter is summarised below.

- IFRS 15
- Accounting for construction contracts – SOCI treatment
- Methods for measuring progress
- Presentation of contract balances in the Statement of Financial Position
- Disclosures

## IFRS 15

IFRS 15 replaces IAS 11 Construction contracts and IAS 18 Revenue. This standard and its US equivalent (Topic 606) were compiled to:

"establish principles for reporting useful information to users of financial information about the nature, amount, timing and uncertainty or revenue and cash flows arising from an entity's contracts with customers" [IFRS 15 IN 1]

The decision to issue IFRS 15 was taken for two reasons. Firstly to expand the guidance on the treatment of complex revenue transactions and secondly to create a common standard applicable to both IFRS and US GAAP.

Our study of this standard will take place in two steps – firstly examining the area of construction contracts and later, in Year 4, studying the broader topic of revenue recognition.

The principle underlying IFRS 15 is that an entity recognises the revenue it will be entitled to as a result of transferring goods or services to its customer. This can be achieved by following the five steps identified in IFRS 15 (PARA IN 7):

| | |
|---|---|
| Identify the contract(s) with a customer | These contracts should have been approved by both parties |
| Identify the performance obligations in the contract | A separate obligation for each promise to transfer goods or services |
| Determine the transaction price | This may be fixed or variable |
| Allocate the transaction price to the different performance obligations in the contract | Allocate an amount based on the relative stand-alone prices of each distinct good or service. |
| Recognise revenue when or as the entity satisfies the performance obligations | The entity satisfies a performance obligation when it transfers a service (ie an asset) to a customer.<br>An asset is transferred when the customer obtains control of it. At the start of a contract the entity needs to determine whether it will satisfy the performance obligations over time or at a particular point in time |

IFRS 15 (Para 35) indicates that certain criteria need to be met if a performance obligation is to be satisfied over time rather than at a particular point in time. Only one of the following criteria needs to be met in order for the obligation to be considered as satisfied over time:

| |
|---|
| The customer receives and immediately consumes the benefits provided by the entity. |
| The entity produces an asset which is controlled by the customer even as it is being worked on by the entity. |
| The entity does not produce an asset with an alternative use, other than sale to the customer, and the entity has an enforceable right to payment for the amount completed to date. |

In general it is expected that the performance obligations of construction contracts would be satisfied over time rather than at a particular point in time and this is the basis for the accounting treatment set out below.

## Accounting for construction contracts – SOCI treatment

The accounting treatment of construction contracts differs depending on whether a profit or loss is expected on the contract. That accounting treatment varies for a profit-making contract depending on whether the overall outcome is reasonably certain or not. When considering the accounting treatment of a contract the following steps should always be taken:

| | |
|---|---|
| Step 1 | Assess the overall expected outcome of the contract |
| Step 2 | Calculate where applicable, the percentage of the overall contract that is completed and use this, together with any other relevant information, to assess whether or not the outcome of the contract can be assessed with reasonable certainty. |

Construction contracts, where the outcome is expected to be a profit and the entity believes that that outcome is reasonably assured, should be dealt with in the statement of comprehensive income of the entity by recognising an estimate of the profit earned to date on the contract. This is achieved by showing as revenue, the percentage of the total contract value earned to date and similarly by showing as cost of sales, the same percentage of the total expected contract costs. Worked example 1 below demonstrates this:

**Worked example 1**

Zebra PLC is currently working on a number of construction projects. One of these contracts is detailed below at 31 May 2016

| **Contract 001** | **€** |
|---|---|
| Total contract value | 5,000,000 |
| Costs incurred to date | 3,000,000 |
| Estimated costs to complete | 1,200,000 |
| Percentage completed at 31 May 2016 | 70% |
| Overall outcome | Zebra PLC believes that the outcome of its contracts are reasonably certain once they are at least 30% complete. |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Zebra PLC for the year ended 31 May 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement.

**Worked example 1 – Solution**

**Workings**

**(a) Step one - overall outcome**

| | € | € |
|---|---|---|
| Contract value | | 5,000,000 |
| Total costs | | |
| Costs to date | (3,000,000) | |
| Costs to complete | (1,200,000) | (4,200,000) |
| Profit/(loss) | | 800,000 |

**Step two - percentage completed 70%**

Outcome reasonably certain

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | €5,000,000 x 70% | €3,500,000 |
| Cost of sales | Total costs x percentage completed | |
| | €4,200,000 x 70% | €2,940,000 |

**(b) Zebra PLC**
**Statement of comprehensive income (extract)**
**For the year ended 31 May 2016**

| | € |
|---|---|
| Revenue | 3,500,000 |
| Cost of sales | (2,940,000) |
| Gross profit | 560,000 |

**Points to note**

The amount of profit recognised on this contract for the year ended 31 May 2016 is the overall expected profit on the contract x percentage completed €800,000 x 70% = €560,000.

Where a construction contract is expected to give rise to a loss the full amount of the loss must be accounted for as soon as the loss is anticipated. This treatment is required even where work on the contract has not yet started unless the entity is able to avoid the loss because it is not legally required to complete the contract.

The accounting treatment adopted is to include the percentage of contract value earned to date as revenue in the SOCI together with sufficient cost of sales to recognise the total anticipated loss. Worked example 2 shows how this works in practice:

**Worked example 2**

Another contract being worked on by Zebra PLC during the year ended 31 May 2016 is detailed below:

| **Contract 002** | **€** |
|---|---|
| Total contract value | 6,400,000 |
| Costs incurred to date | 4,000,000 |
| Estimated costs to complete | 2,900,000 |
| Percentage completed at 31 May 2016 | 55% |
| Overall outcome | Zebra PLC believes that the outcome of its contracts is reasonably certain once they are at least 30% complete. |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Zebra PLC for the year ended 31 May 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement.

**Worked example 2 - solution**
**a) Step one - overall outcome**

| | € | € |
|---|---|---|
| Contract value | | 6,400,000 |
| Total costs | | |
| Costs to date | (4,000,000) | |
| Costs to complete | (2,900,000) | (6,900,000) |
| Profit/(loss) | | (500,000) |

**Step two - percentage completed 55%**

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed<br>€6,400,000 x 55% | €3,520,000 |
| Cost of sales | Revenue + expected loss<br>€3,520,000 + 500,000 | €4,020,000 |

**b) Zebra PLC**
**Statement of comprehensive income (extract)**
**For the year ended 31 May 2016**

| | € |
|---|---|
| Revenue | 3,520,000 |
| Cost of sales | (4,020,000) |
| Gross profit/(loss) | (500,000) |

**Points to note**

As you see the amount of the loss accounted for in the current year is the total expected loss. This would be the situation even where the contract extends for a number of years.

Where a construction contract is expected to give rise to a profit but the outcome is not reasonably certain, often because the contract is not sufficiently far advanced for the entity to be able to predict the outcome with a reasonable degree of certainty, then no profit is recognised in the financial statements for that year. Where work has been carried out on the contract, it is important that the financial statements reflect this fact and so an equal amount of revenue and cost of sales in included for that year. The contract amount of the revenue and cost of sales is normally taken as recoverable costs – usually costs incurred to date. Worked example 3 shows this in practice:

**Worked example 3**

A further contact being worked on by Zebra PLC during the year ended 31 May 2016 is detailed below:

| **Contract 003** | **€** |
|---|---:|
| Total contract value | 3,500,000 |
| Costs incurred to date | 500,000 |
| Estimated costs to complete | 2,600,000 |
| Percentage completed at 31 May 2016 | 16% |
| Overall outcome | Zebra PLC believes that the outcome of its contracts is reasonably certain once they are at least 30% complete. |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Zebra PLC for the year ended 31 May 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement.

**Worked example 3 - solution**

**a) Step one - overall outcome**

| | € | € |
|---|---|---|
| Contract value | | 3,500,000 |
| Total costs | | |
| Costs to date | (500,000) | |
| Costs to complete | (2,600,000) | (3,100,000) |
| Profit/(loss) | | 400,000 |

**Step two - percentage completed** 16%

**Points to note**

As this contract is only 16% complete Zebra PLC would not believe the outcome to be certain. For that reason no profit is recognised at this point.

| | | |
|---|---|---|
| Revenue | Costs incurred to date | €500,000 |
| Cost of sales | Costs incurred to date | €500,000 |

**b) Zebra PLC**
**Statement of comprehensive income (extract)**
**For the year ended 31 May 2016**

| | € |
|---|---|
| Revenue | 500,000 |
| Cost of sales | (500,000) |
| Gross profit | 0 |

In some cases, a construction contract will extend over several years. In that situation the amounts calculated for revenue and cost of sales will initially be the cumulative figures for revenue and cost of sales to date. In order to calculate the revenue and cost of sales figures for the current year any amounts recognised in prior years must be deducted.

**Worked example 4**

Zebra PLC started working on the contract detailed below during the year ended 31 May 2015. Estimates of contract value and total costs at both 31 May 2015 and 2016 are detailed below:

| **Contract 004** | **At 31 May 2016** | **At 31 May 2015** |
|---|---|---|
| | **€** | **€** |
| Total contract value | 6,700,000 | 6,700,000 |
| Costs incurred to date | 4,200,000 | 2,500,000 |
| Estimated costs to complete | 900,000 | 2,600,000 |
| Percentage completed | 80% | 45% |
| Overall outcome | Zebra PLC believes that the outcome of its contracts is reasonably certain once they are at least 30% complete. | |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Zebra PLC for the year ended 31 May 2016 in respect of the above contract, and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement together with 2015 comparative figures.

**a) Step one - overall outcome** 31/05/2015

| | € | € |
|---|---|---|
| Contract value | | 6,700,000 |
| Total costs | | |
| Costs to date | (2,500,000) | |
| Costs to complete | (2,600,000) | (5,100,000) |
| Profit/(loss) | | 1,600,000 |

**Step two - percentage completed**
At 31/5/2015 this is 45%

| | | |
|---|---|---|
| Revenue | Total costs x percentage completed | |
| | €6,700,000 x 45% | €3,015,000 |
| Cost of sales | Total costs x percentage completed | |
| | €5,100,000 x 45% | €2,295,000 |

**At 31/5/2016**
**Percentage completed 80%**

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | €6,700,000 x 80% | €5,360,000 |
| | Less recognised 31/5/2015 | (€3,015,000) |
| | Revenue y/e 31/5/2016 | €2,345,000 |

| | | |
|---|---|---|
| Cost of sales | Total costs x percentage completed | |
| | €5,100,000 x 80% | €4,080,000 |
| | Less recognised 31/5/2015 | (€2,295,000) |
| | Cost of sales y/e 31/5/2016 | €1,785,000 |

**Zebra PLC**

**Statement of comprehensive income (extract)**

**For the year ended 31 May 2016**

| | 2016 | 2015 |
|---|---|---|
| | € | € |
| Revenue | 2,345,000 | 3,015,000 |
| Cost of sales | (1,785,000) | (2,295,000) |
| Gross profit | 560,000 | 720,000 |

Points to note

Profit recognised in 2016 is 35% of the overall expected profit on the contract. This being the amount of the profit deemed to be earned in 2016 based on the amount of the contract completed during 2016 [80% - 45%= 35%]

It may happen in the later year that estimates of overall costs and contract revenue change from the previous accounting period estimate. If this happens the amount recognised on a cumulative basis should reflect the amount of the overall profit, as calculated at that time that has been earned to date. No adjustment to the earlier amounts are required as this represents a change in estimate which is simply adjusted in the accounting period in which the changes in estimates are identified.

**Worked example 5**

Zebra PLC started working on the contract detailed below during the year ended 31 May 2015. Estimates of contract value and total costs at both 31 May 2015 and 2016 are detailed below:

| **Contract 005** | **At 31 May 2016** | **At 31 May 2015** |
|---|---|---|
| | **€** | **€** |
| Total contract value | 8,200,000 | 8,200,000 |
| Costs incurred to date | 6,850,000 | 2,700,000 |
| Estimated costs to complete | 750,000 | 5,100,000 |
| Percentage completed | 90% | 35% |
| Overall outcome | Zebra PLC believes that the outcome of its contracts is reasonably certain once they are at least 30% complete. | |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Zebra PLC for the year ended 31 May 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement together with 2015 comparatives.

| **a) Step one - overall outcome** | | 31/05/2015 |
|---|---|---|
| | € | € |
| Contract value | | 8,200,000 |
| Total costs | | |
| Costs to date | (2,700,000) | |
| Costs to complete | (5,100,000) | (7,800,000) |
| Profit/(loss) | | 400,000 |

**Step two - percentage completed**
At 31 May 2015 this is 35%

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | € |
| | €8,200,000 x 35% | 2,870,000 |
| Cost of sales | Total costs x percentage completed | |
| | €7,800,000 x 35% | 2,730,000 |

At 31/5/2016
Percentage completed 90%

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | €8,200,000 x 90% | 7,380,000 |
| | Less recognised 31/5/2015 | (2,870,000) |
| | Revenue y/e 31/5/2016 | 4,510,000 |

| | | |
|---|---|---|
| Cost of sales | Total costs x percentage completed | |
| | €7,600,000 x 90% | 6,840,000 |
| | Less recognised 31/5/2015 | (2,730,000) |
| | Cost of sales y/e 31/5/2016 | 4,110,000 |

Point to note

At 31 May 2016 the overall outcome is still a profit and expected total costs to complete the contract have dropped to €7,600,000

**b) Zebra PLC**
**Statement of comprehensive income (extract)**
**For the year ended 31 May 2016**

| | **2016** | **2015** |
|---|---|---|
| | € | € |
| Revenue | 4,510,000 | 2,870,000 |
| Cost of sales | (4,110,000) | (2,730,000) |
| Gross profit | 400,000 | 140,000 |

**Variable consideration**

In some contracts the amount of the overall value of the contract may vary depending upon a variety of factors such as the possibility of a bonus element of consideration for completing the contract early, or there could be a penalty reduction in contract value arising from a delay in completing the contract. IFRS 15 (Para 56) indicates that

“an entity shall include in the transaction price some or all of an amount of variable consideration to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognised will not occur when the uncertainty associated with the variable consideration is subsequently resolved. “

In other words an entity should only include extra revenue, such as revenue which is contingent on the entity completing the contract within a specified time period, where it is highly probable that this amount of revenue will eventually be received.

IFRS 15 also states that the manner of estimating this variable consideration, would include recognising the amount that is most likely to be received

Paragraph 59 of IFRS 15 states that the entity should reassess the amount of the variable consideration it expects to receive at the end of each accounting period whilst the contract is in progress ,and it should change its estimate of that consideration where necessary to reflect its current estimate of the most likely amount to be received. See worked example 6 below to see this in practice.

**Worked example 6**

Zebra PLC started working on the contract detailed below during the year ended 31 May 2014. Estimates of contract value and total costs at 31 May 2014, 2015 and 2016 are detailed below:

| **Contract 006** | **At 31/5/2016** | **At 31/5/ 2015** | **At 31/5/2014** |
|---|---|---|---|
| | **€** | **€** | **€** |
| Total contract value ** | 7,000,000 | 7,000,000 | 7,000,000 |
| Costs incurred to date | 4,500,000 | 2,300,000 | 900,000 |
| Estimated costs to complete | 900,000 | 3,100,000 | 4,700,000 |
| Percentage completed | 80% | 40% | 15% |
| Overall outcome | Zebra PLC believes that the outcome of its contracts is reasonably certain once they are at least 30% complete. | | |

**Total contract value: Under the terms of this contract, Zebra PLC will be paid an extra amount of consideration of €10,000 per week for the number of weeks before 31 December 2016 that the asset under construction is completed and ready for use. At 31/5/2014 the entity was unsure whether they would have the contract completed on time to gain any extra consideration. By 31/5/2015 they felt that the contract would be finished at least 4 weeks ahead of that date. By 31/5/2016 this had been reassessed and it was felt that 7 weeks ahead of this deadline was the likely completion date.

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Zebra PLC for the year ended 31 May 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement together with 2015 and 2014 comparatives.

**Worked example 6**

| **Step one - overall outcome** | | 31/05/2014 |
|---|---|---|
| | € | € |
| Contract value | | 7,000,000 |
| Total costs | | |
| Costs to date | (900,000) | |
| Costs to complete | (4,700,000) | (5,600,000) |
| Profit/(loss) | | 1,400,000 |

**Step two - percentage completed 15%**

| | | |
|---|---|---|
| Revenue | | € |
| | Costs to date | 900,000 |
| Cost of sales | | |
| | Costs to date | 900,000 |

At 31/5/2015
Percentage completed 40%

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | €7,040,000 x 40% | 2,816,000 |
| | Less recognised at 31/5/2014 | (900,000) |
| | Revenue y/e 31/5/2015 | 1,916,000 |

Points to note

At 31 May 2015 the overall outcome is still a profit but expected total costs to complete the contract have decreased to €5,400,000. Total expected revenue has increased to €7,040,000 - the basic €7,000,000 contract value plus 4 weeks x €10,000 per week extra consideration contingent on finishing 4 weeks before 31 December 2016.

| | | |
|---|---|---|
| Cost of sales | Total costs x percentage completed | |
| | €5,400,000 x 40% | 2,160,000 |
| | Less recognised 31/5/2015 | (900,000) |
| | Cost of sales y/e 31/5/2016 | 1,260,000 |

At 31/5/2016
Percentage completed 80%

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | €7,070,000 x 80% | 5,656,000 |
| | Less recognised by 31/5/2015 | (2,816,000) |
| | Revenue y/e 31/5/2016 | 2,840,000 |

Point to note

At 31 May 2016 the overall outcome is still a profit with expected total costs remaining at €5,400,000 whilst expected revenue has increased again to €7,070,000 - the basic €7,000,000 contract value plus 7 weeks x €10,000 per week extra consideration contingent on finishing 7 weeks ahead of 31/12/2016.

| | | |
|---|---|---|
| Cost of sales | Total costs x percentage completed | |
| | €5,400,000 x 80% | 4,320,000 |
| | Less recognised by 31/5/2015 | (2,160,000) |
| | Cost of sales y/e 31/5/2016 | 2,160,000 |

**Zebra PLC**
**Statement of comprehensive income (extract)**
**For the year ended 31 May 2016**

| | 2016 | 2015 | 2014 |
|---|---|---|---|
| | € | € | € |
| Revenue | 2,840,000 | 1,916,000 | 900,000 |
| Cost of sales | (2,160,000) | (1,260,000) | (900,000) |
| Gross profit | 680,000 | 656,000 | 0 |

Where the variable consideration is a penalty the total consideration will be considered to include a fixed amount of consideration and a variable amount (IFRS 15 IE 102 ) which will only be recorded if the entity believes that the penalty will not be payable.

**Worked example 7**

| Contract 007 | € |
|---|---|
| Total contract value | 2,500,000 |
| Costs incurred to date | 900,000 |
| Estimated costs to complete | 1,100,000 |
| Percentage completed at 31 May 2016 | 40% |
| Zebra PLC will suffer a reduction of 2.5% of the contract value if it fails to complete this contract by 30/11/2016. At 31/5/2016 Zebra PLC is not certain that it will complete the contract before that deadline. | |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Zebra PLC for the year ended 31 May 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement.

**Worked example 7 - solution**

**a) Step one - overall outcome**

| | € | € |
|---|---|---|
| Contract value | | 2,437,500 |
| Total costs | | |
| Costs to date | (900,000) | |
| Costs to complete | (1,100,000) | (2,000,000) |
| Profit/(loss) | | 437,500 |

**Step two - percentage completed 40%**

**Points to note**

At 31/5/2016 the company is not reasonably certain that it will be able to complete the contract by 30/11/2016 and therefore overall expected revenue is reduced to €2,500,000 - (€2,500,000 x 2.5%) = €2,437,500

| | | |
|---|---|---|
| Revenue | Total contract value x percentage complete | |
| | €2,437,500 x 40% | €975,000 |
| Cost of sales | Total costs x percentage complete | |
| | €2,000,000 x 40% | €800,000 |

**b) Zebra PLC**
**Statement of comprehensive income (extract)**
**For the year ended 31 May 2016**

| | € |
|---|---|
| Revenue | 975,000 |
| Cost of sales | (800,000) |
| Gross profit | 175,000 |

## Methods for measuring progress

Where a performance obligation is deemed to be satisfied over time the entity needs to have a method of calculation which will allow it to measure the progress towards satisfying that obligation by the accounting date. IFRS 15 explains that there are both input and output methods available to measure that progress. If an entity chooses to measure progress based on an output method the output chosen should be one that truly reflects the progress towards satisfying the obligation.(Para 41) Output methods would measure (Para B15) progress based on approaches such as "surveys of performance completed to date, units produced" etc.

Input methods can also be used to measure the extent to which the entity has achieved the performance obligation. Input methods measure progress based on items such as resources consumed, costs incurred or time elapsed. IFRS 15 recognises that some inputs may not have a direct impact on the progress towards achieving a performance objective. For this reason costs incurred which arose from inefficiencies would normally not be taken into account in estimating the progress towards satisfying that obligation where an input method based on costs was used to measure progress.

### Worked example 8

Zebra PLC are preparing their draft financial statements for the year ended 31 May 2016. To this end they are trying to calculate the percentage completed on three contracts at 31 May 2016. Details of the contracts are set out below:

| **Contract** | **008** | **009** | **010** |
|---|---|---|---|
| | **€** | **€** | **€** |
| Total contract value | 5,000,000 | 3,000,000 | 10,000,000 |
| Costs incurred to date | 3,500,000 | 500,000 | 3,900,000 |
| Estimated costs to complete | 1,900,000 | 1,900,000 | 4,700,000 |
| Surveyor's valuation of work completed to date | 3,000,000 | 660,000 | 4,850,000 |
| Units completed | N/A | N/A | 20 of 45 |

The directors of Zebra PLC believe that percentage completed on contract 008 would best be calculated based on costs to date over total costs. Included in the costs to date on this contract are €230,000 in costs arising from excessive material usage which had not been anticipated at the time of agreeing the contract price with the client.

The percentage completed of contract 009 they feel should be estimated based on surveyor's valuation of work performed to date as a percentage of contract value.

Finally they believe that the percentage completed on contract 010 should be estimated based on units completed as a percentage of total units to be completed under this contract.

**Requirements**

Calculate the percentage completed of each of the contracts set out above at 31 May 2016.

**Worked example 8 - solution**

| **Contract** | **008** | **009** | **010** |
|---|---|---|---|
| **Percentage completed** | 63% | 22% | 44% |
| **Workings** | $\frac{3500 - 230}{3500 - 230 + 1900}$ | $\frac{660}{3,000}$ | $\frac{20}{45}$ |

**Presentation of contract balances in the statement of financial position**

**Costs to fulfil a contract**

IFRS 15 states (Para 95) that the costs incurred on fulfilling a contract should be recognised as an asset where:

i. They relate directly to a contract or anticipated contract
ii. The costs generate or enhance resources of the entity that will be used in satisfying performance obligations in the future; and
iii. The costs are expected to be recovered.

The standard tells us the costs that would satisfy requirement (i) above include direct labour costs of workers involved in working on the contract, direct material costs, allocation of general costs attributable to the contract activity of the entity as a whole, other costs directly chargeable to the customer under the terms of the contract and other costs necessitated by the contract activity.
On the other hand the following costs should not be recognised as assets: costs of wasted material and labour, general administration costs, costs relating to performance obligations already achieved. These costs would instead be written off as expenses. The framework definition of an asset “a resource controlled by the entity…from which future economic benefits are expected to flow to the entity” would also require such costs to be written off as, no future benefits would be expected to flow to the entity from such costs.

The amounts to be included in the SOFP in relation to a contract will normally be calculated as:

| |
|---|
| Costs to date |
| Plus profit recognised to date/less loss recognised to date |
| Less progress payments invoiced |

This will be included in current assets where it is a positive figure identified as contract asset, and will be included in current liabilities where this is a negative figure and identified as contract liability.
The entity will also show an amount in respect of receivables for the difference between progress payments invoiced and received where relevant.

**Worked example 9**

Zebra PLC are preparing their draft financial statements for the year ended 31 May 2017. Details of three contracts which commenced during the year to 31 May 2017 and are still in progress at 31 May 2017 are set out below:

| **Contract** | **011** | **012** | **013** |
|---|---|---|---|
| | **€** | **€** | **€** |
| Total contract value | 2,900,000 | 3,600,000 | 4,800,000 |
| Costs incurred to date | 1,500,000 | 1,520,000 | 1,700,000 |
| Estimated costs to complete | 1,000,000 | 2,280,000 | 2,600,000 |
| Progress payments invoiced to date | 1,400,000 | 1,200,000 | 2,000,000 |
| Progress payments received to date | 1,200,000 | 1,200,000 | 1,900,000 |

**Requirements**

Show extracts from the Statement of Comprehensive Income of Zebra PLC for the year ended 31 May 2017 and the Statement of Financial Position as at 31 May 2017 in respect of the contracts set out above.

The directors of Zebra PLC believe that percentage completed on all of these contracts should be calculated based on costs to date over total costs. Included in the costs to date of contract 013 above are €100,000 of costs which arose from a misinterpretation of the architect's plans which company employees were following. As a result of this misinterpretation part of the boundary wall of the project they were working on had to be knocked and re-constructed. These costs were not anticipated when the original contract was drawn up.

**Worked example 9 - Solution**
**Step one - overall outcomes**

| | € | € | € |
|---|---|---|---|
| | **011** | **012** | **013** |
| Contract value | 2,900,000 | 3,600,000 | 4,800,000 |
| Total costs | | | |
| Costs to date | (1,500,000) | (1,520,000) | (1,700,000) |
| Costs to complete | (1,000,000) | (2,280,000) | (2,600,000) |
| | (2,500,000) | (3,800,000) | (4,300,000) |
| Profit/(loss) | 400,000 | (200,000) | 500,000 |

**Step two - percentage completed**

| | **011** | **012** | **013** |
|---|---|---|---|
| | 60% | 40% | 38% |
| **Costs to date** | 1,500,000 | 1,520,000 | 1,600,000 |
| **Total costs** | 2,500,000 | 3,800,000 | 4,200,000 |

**Points to note**

Costs to date and total costs included in calculating the percentage completed above for contract 12 exclude the €100,000 costs arising from ineffieicencies that were not included in the contract value.

| **Revenue** | **011** | **012** | **013** | |
|---|---|---|---|---|
| €2,900,000 x 60% | 1,740,000 | | | |
| €3,600,000 x 40% | | 1,440,000 | | |
| €4,800,000 x 38% | | | 1,824,000 | |
| | 1,740,000 | 1,440,000 | 1,824,000 | 5,004,000 |
| **Cost of sales** | | | | |
| €2,500,000 x 60% | 1,500,000 | | | |
| €1,440,000 + €200,000 | | 1,640,000 | | |
| €4,200,000 x 38% + €100,000 | | | 1,696,000 | |
| | 1,500,000 | 1,640,000 | 1,696,000 | 4,836,000 |
| Profit/(loss) recognised | 240,000 | (200,000) | 128,000 | |

**Point to note**

Costs expensed on contract 013 include the relevant percentage of overall costs excluding the €100,000 inefficiencies. The €100,000 is then expensed in full.

**Statement of financial position workings**

| **Contract asset/(liability)** | **€** | **€** | **€** | |
|---|---|---|---|---|
| | **011** | **012** | **013** | |
| Costs to date | 1,500,000 | 1,520,000 | 1,700,000 | |
| Profit/(loss) recognised | 240,000 | (200,000) | 128,000 | |
| Less progress payments invoiced | (1,400,000) | (1,200,000) | (2,000,000) | |
| | 340,000 | 120,000 | (172,000) | |
| **Receivable** | | | | |
| Progress payments invoiced | 1,400,000 | 1,200,000 | 2,000,000 | |
| Progress payments received | (1,200,000) | (1,200,000) | (1,900,000) | |
| | 200,000 | 0 | 100,000 | 300,000 |

**Zebra PLC**
**Statement of comprehensive income (extract)**
**For the year ended 31 May 2017**

| | **€** |
|---|---|
| Revenue | 5,004,000 |
| Cost of sales | (4,836,000) |
| Gross profit | 168,000 |

**Zebra PLC**
**Statement of Financial Position (extract)** **€**
**As at 31 May 2017**

| | |
|---|---|
| **Current asset** | |
| Contract asset [340,000+120,000] | 460,000 |
| Receivables | 300,000 |
| **Current liability** | |
| Contract liability | 172,000 |

**Worked example 10**

Zebra PLC are preparing their draft financial statements for the year ended 31 May 2017. Details of two contracts which commenced during the year to 31 May 2017 and a further contract which commenced during the year ended 31 May 2016 are set out below. All of these contract are still in progress at 31 May 2017 are set out below:

| **Contract** | **014** | **015** | **016** | **016** |
|---|---|---|---|---|
| | **€** | **€** | **€** | **€** |
| | | | **31/5/2016** | **31/5/2017** |
| Total contract value | 3,600,000 | 1,900,000 | 9,500,000 | 9,500,000 |
| Costs incurred to date | 700,000 | 600,000 | 2,700,000 | 6,000,000 |
| Estimated costs to complete | 3,300,000 | 1,100,000 | 5,800,000 | 2,500,000 |
| Surveyor's valuation of work completed to date | 540,000 | 608,000 | 2,850,000 | 6,650,000 |
| Progress payments invoiced to date | 500,000 | 400,000 | 3,000,000 | 6,500,000 |
| Progress payments received to date | 0 | 400,000 | 2,800,000 | 6,000,000 |

**Requirements**

Show extracts from the Statement of Comprehensive Income of Zebra PLC for the year ended 31 May 2017 and the Statement of Financial Position at 31 May 2017 in respect of the contracts set out above.

The directors of Zebra PLC believe that the most appropriate approach to calculating percentage completed on these contracts is surveyor's valuation of work completed to date as a percentage of overall contract value.

The directors of Zebra PLC believe that the outcome of all contracts is reasonably certain once they are at least 30% complete.

**Worked example 10 - solution**
**Step one - overall outcomes at 31/5/17**

| | € | € | € |
|---|---|---|---|
| | **014** | **015** | **016** |
| Contract value | 3,600,000 | 1,900,000 | 9,500,000 |
| Total costs | | | |
| Costs to date | (700,000) | (600,000) | (6,000,000) |
| Costs to complete | (3,300,000) | (1,100,000) | (2,500,000) |
| | (4,000,000) | (1,700,000) | (8,500,000) |
| Profit/(loss) | (400,000) | 200,000 | 1,000,000 |

**Step two - percentage completed**

| | **014** | **015** | **016** |
|---|---|---|---|
| | 15% | 32% | 70% |
| **Surveyor's valuation** | 540,000 | 608,000 | 6,650,000 |
| **Total contract value** | 3,600,000 | 1,900,000 | 9,500,000 |

| | | | Cumulative | |
|---|---|---|---|---|
| **Revenue** | **014** | **015** | **016** | |
| €3,600,000 x 15% | 540,000 | | | |
| €1,900,000 x 32% | | 608,000 | | |
| €9,500,000 x 70% | | | 6,650,000 | |
| | 540,000 | 608,000 | 6,650,000 | 7,798,000 |
| Less recognised in 2016 on contract 016 | | | | (2,850,000) |
| Current year revenue | | | | 4,948,000 |
| | | | | |
| **Cost of sales** | | | | |
| Revenue + expected loss | 940,000 | | | |
| €1,700,000 x 32% | | 544,000 | | |
| €8,500,000 x 70% | | | 5,950,000 | |
| | 940,000 | 544,000 | 5,950,000 | 7,434,000 |
| Less recognised in 2016 on contract 16 | | | | (2,550,000) |
| Current year cost of sales | | | | 4,884,000 |
| | | | | |
| Profit recognised to date | (400,000) | 64,000 | 700,000 | |

Contract 16 - percentage completed at 31 May 2016 was 30%
being 2,850,000/9,500,000
Revenue recognised in 2016 was therefore €2,850,000
Cost of sales recognised in 2016 was €8,500,000 x 30% = €2,550,000

**Statement of financial position workings**

| **Contract asset/(liability)** | **€** | **€** | **€** |
|---|---|---|---|
| | **014** | **015** | **016** |
| Costs to date | 700,000 | 600,000 | 6,000,000 |
| Profit/(loss) recognised | (400,000 | 64,000 | 700,000 |
| Less progress payments Invoiced | (500,000) | (400,000) | (6,500,000) |
| | (200,000) | 264,000 | 200,000 |

Points to note

SOFP balances for contract 16 are based on cumulative figures - so profit recognised includes the profit recognised in 2016 €300,000 and the profit recognised in 2017 €400,000

| **Receivable** | | | | |
|---|---|---|---|---|
| Progress payments invoiced | 500,000 | 400,000 | 6,500,000 | |
| Progress payments received | 0 | (400,000) | (6,000,000) | |
| | 500,000 | 0 | 500,000 | 1,000,000 |

**Zebra PLC**
**Statement of comprehensive income (extract)**
**For the year ended 31 May 2017**

| | € |
|---|---|
| Revenue | 4,948,000 |
| Cost of sales | (4,884,000) |
| Gross profit | 64,000 |

**Zebra PLC**

**Statement of Financial Position (extract)**

**As at 31 May 2017**

| **Current asset** | € |
|---|---|
| Contract assets [264 + 200] | 464,000 |
| Receivables | 1,000,000 |
| | |
| **Current liabilities** | |
| Contract liability | 200,000 |

## Disclosures

IFRS 15 explains that the purpose of the disclosure requirements of IFRS 15 is to ensure that an entity discloses “sufficient information to enable users of financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers.” The standard therefore requires entities to disclose both “qualitative and quantitative information” about:

Its contracts with its customers

The judgements made in applying the standard to the various contracts with its customers.

Assets recognised in the financial statement of the entity arising from costs incurred in fulfilling the contract.

**Student Examples**

**SE 1**

Oak PLC is currently working on a number of construction projects. One of these contracts is detailed below at 28 February 2016

| **Contract 101** | **€000** |
|---|---:|
| Total contract value | 3,100 |
| Costs incurred to date | 1,900 |
| Estimated costs to complete | 1,000 |
| Percentage completed at 28 February 2016 | 65% |
| Overall outcome | Oak PLC believes that the outcome of its contracts are reasonably certain once they are at least 25% complete. |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Oak PLC for the year ended 28 February 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement.

**SE 2**

Oak PLC is currently working on a number of construction projects. One of these contracts is detailed below at 28 February 2016

| **Contract 102** | **€000** |
|---|---:|
| Total contract value | 5,900 |
| Costs incurred to date | 2,900 |
| Estimated costs to complete | 3,100 |
| Percentage completed at 28 February 2016 | 42% |
| Overall outcome | Oak PLC believes that the outcome of its contracts are reasonably certain once they are at least 25% complete. |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Oak PLC for the year ended 28 February 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement.

**SE 3**

Oak PLC is currently working on a number of construction projects. One of these contracts is detailed below at 28 February 2016

| **Contract 103** | **€000** |
|---|---:|
| Total contract value | 4,700 |
| Costs incurred to date | 1,000 |
| Estimated costs to complete | 3,000 |
| Percentage completed at 28 February 2016 | 23% |
| Overall outcome | Oak PLC believes that the outcome of its contracts are reasonably certain once they are at least 25% complete. |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Oak PLC for the year ended 28 February 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement.

**SE 4**

Oak PLC is currently working on a number of construction projects. One of these contracts is detailed below at 28 February 2016

| **Contract 104** | **€000** |
|---|---:|
| Total contract value | 2,600 |
| Costs incurred to date | 2,250 |
| Estimated costs to complete | 250 |
| Percentage completed at 28 February 2016 | 90% |
| Overall outcome | Oak PLC believes that the outcome of its contracts are reasonably certain once they are at least 25% complete. |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Oak PLC for the year ended 28 February 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement.

**SE 5**

Oak PLC is currently working on a number of construction projects. One of these contracts is detailed below at 28 February 2016 and at 28 February 2017

| **Contract 105** | **At 28/2/2017** | **At 28/2/2016** |
|---|---|---|
| | **€000** | **€000** |
| Total contract value | 5,000 | 5,000 |
| Costs incurred to date | 4,800 | 2,400 |
| Estimated costs to complete | 600 | 3,000 |
| Percentage completed at 28 February 2016 | 88% | 40% |
| Overall outcome | Oak PLC believes that the outcome of its contracts are reasonably certain once they are at least 25% complete. | |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Oak PLC for the year ended 28 February 2017 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement together with 2016 comparatives.

**SE 6**

Oak PLC is currently working on a number of construction projects. One of these contracts is detailed below at 28 February 2016

| **Contract 106** | **€000** |
|---|---|
| Total contract value | 6,000 |
| Costs incurred to date | 3,300 |
| Estimated costs to complete | 1,300 |
| Percentage completed at 28 February 2016 | 70% |
| Oak PLC is entitled to an extra amount of contract revenue - €200,000 in total if this contract is completed within a specified time period. At 28 February 2016 the directors of Oak PLC believe that they will complete the contract on time to earn the extra revenue. | |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Oak PLC for the year ended 28 February 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement.

**SE 7**

Oak PLC is currently working on a number of construction projects. One of these contracts is detailed below at 28 February 2016

| **Contract 107** | **€000** |
|---|---|
| Total contract value | 9,000 |
| Costs incurred to date | 3,200 |
| Estimated costs to complete | 3,000 |
| Percentage completed at 28 February 2016 | 50% |
| Oak PLC will suffer a penalty of 3% of the contract value set out above if this contract is not completed by 31 October 2016. At 28 February 2016 Oak PLC believe that they will not meet this deadline. | |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Oak PLC for the year ended 28 February 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement.

**SE 8**

Oak PLC is currently working on a number of construction projects. One of these contracts is detailed below at 28 February 2016

| **Contract 108** | **€000** |
|---|---|
| Total contract value | 7,600 |
| Costs incurred to date | 1,000 |
| Estimated costs to complete | 5,200 |
| Surveyor's valuation of work completed to date | 1,140 |
| Oak PLC believe that the % completed on this contract is best estimated based on surveyor's value of work completed/total contract value | |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Oak PLC for the year ended 28 February 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement.

**SE 9**

Oak PLC is currently working on a number of construction projects. One of these contracts is detailed below at 28 February 2016

| **Contract 109** | **€000** |
|---|---|
| Total contract value | 4,100 |
| Costs incurred to date | 2,120 |
| Estimated costs to complete | 3,010 |
| Units completed at 28/2/2016 | 5 |
| Total units to be completed under this contract | 7 |
| Oak PLC believe that the % completed on this contract is best estimated based on units completed to date as a percentage of total units to be completed under the contract | |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Oak PLC for the year ended 28 February 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement.

**SE 10**

Oak PLC is currently working on a number of construction projects. One of these contracts is detailed below at 28 February 2016

| **Contract 110** | **€000** |
|---|---|
| Total contract value | 2,900 |
| Costs incurred to date | 1,000 |
| Estimated costs to complete | 1,800 |
| Oak PLC believe that the % completed on this contract is best estimated based on costs incurred to date as a percentage of total costs. Included in costs to date is €50,000 excess idle time costs incurred in January 2016 as a result of a severe weather problems. | |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Oak PLC for the year ended 28 February 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income to show how these amounts will be presented in that statement.

**SE 11**

Oak PLC is currently working on a number of construction projects. One of these contracts is detailed below at 28 February 2016

| **Contract 111** | **€000** |
|---|---|
| Total contract value | 3,500 |
| Costs incurred to date | 1,900 |
| Estimated costs to complete | 1,800 |
| Progress payments invoiced | 1,600 |
| Progress payments received | 1,000 |
| Oak PLC believe that the % completed on this contract is best estimated based on costs incurred to date as a percentage of total costs. | |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Oak PLC for the year ended 28 February 2016 and in the Statement of Financial Position of Oak PLC as at 28 February 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income and Statement of Financial Position to show how these amounts will be presented.

**SE 12**

Oak PLC is currently working on a number of construction projects. One of these contracts is detailed below at 28 February 2016

| **Contract 112** | **€000** |
|---|---|
| Total contract value | 5,500 |
| Costs incurred to date | 3,000 |
| Estimated costs to complete | 1,800 |
| Surveyor's valuation of work completed to date | 3,300 |
| Progress payments invoiced | 3,100 |
| Progress payments received | 2,800 |
| Oak PLC believe that the % completed on this contract is best estimated based on surveyor's valuation of work completed to date as a percentage of total contract value. | |

**Requirements**

a) Calculate the amounts to be included in the Statement of Comprehensive Income of Oak PLC for the year ended 28 February 2016 and in the Statement of Financial Position of Oak PLC as at 28 February 2016 in respect of the above contract and
b) Prepare extracts from the Statement of Comprehensive income and Statement of Financial Position to show how these amounts will be presented.

**SE 1 - Solution**

**Step one - overall outcome**

| | €000 | €000 |
|---|---|---|
| Contract value | | 3,100 |
| Total costs | | |
| Costs to date | (1,900) | |
| Costs to complete | (1,000) | (2,900) |
| Profit/(loss) | | 200 |

**Step two - percentage completed** 65%

Outcome reasonably certain

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | | **€000** |
| | €3,100,000 x 65% | 2,015 |
| Cost of sales | Total costs x percentage completed | |
| | €2,900,000 x 65% | 1,885 |

**Oak PLC**

**Statement of comprehensive income (extract)**

**For the year ended 28 February 2016**

| | €000 |
|---|---|
| Revenue | 2,015 |
| Cost of sales | (1,885) |
| Gross profit | 130 |

**SE 2 - Solution**

**Step one - overall outcome**

| | €000 | €000 |
|---|---|---|
| Contract value | | 5,900 |
| Total costs | | |
| Costs to date | (2,900) | |
| Costs to complete | (3,100) | (6,000) |
| Profit/(loss) | | (100) |

**Step two - percentage completed** 42%

Outcome reasonably certain

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | | **€000** |
| | €5,900,000 x 42% | 2,478 |
| Cost of sales | Revenue + loss expected | |
| | €2,478,000 + €100,000 | 2,578 |

**Oak PLC**

**Statement of comprehensive income (extract)**

**For the year ended 28 February 2016**

| | €000 |
|---|---|
| Revenue | 2,478 |
| Cost of sales | (2,578) |
| Gross profit/(loss) | (100) |

**SE 3 - Solution**
**Step one - overall outcome**

| | €000 | €000 |
|---|---|---|
| Contract value | | 4,700 |
| Total costs | | |
| Costs to date | (1,000) | |
| Costs to complete | (3,000) | (4,000) |
| Profit/(loss) | | 700 |

**Step two - percentage completed** 23%

Outcome not certain

| | €000 |
|---|---|
| Revenue – costs to date | 1,000 |
| Cost of sales – cost to date | 1,000 |

**Oak PLC**
**Statement of comprehensive income (extract)**
**For the year ended 28 February 2016**

| | €000 |
|---|---|
| Revenue | 1,000 |
| Cost of sales | (1,000) |
| Gross profit | 0 |

**SE 4 - Solution**

**Step one - overall outcome**

| | €000 | €000 |
|---|---|---|
| Contract value | | 2,600 |
| Total costs | | |
| Costs to date | (2,250) | |
| Costs to complete | (250) | (2,500) |
| Profit/(loss) | | 100 |

**Step two - percentage completed** 90%

Outcome reasonably certain

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | | **€000** |
| | €2,600,000 x 90% | 2,340 |
| Cost of sales | Total costs x percentage completed | |
| | €2,500,000 x 90% | 2,250 |

**Oak PLC**

**Statement of comprehensive income (extract)**

**For the year ended 28 February 2016**

| | €000 |
|---|---|
| Revenue | 2,340 |
| Cost of sales | (2,250) |
| Gross profit | 90 |

**SE 5 - Solution**

| **a) Step one - overall outcome** | | 28/02/2016 |
|---|---|---|
| | € | €000 |
| Contract value | | 5,000 |
| Total costs | | |
| Costs to date | (2,400) | |
| Costs to complete | (3,000) | (5,400) |
| Profit/(loss) | | (400) |

**Step two - percentage completed** 40%

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | €5,000,000 x 40% | 2,000 |
| Cost of sales | Revenue + overall loss | |
| | €2,000,000 + €400,000 | 2,400 |

**At 28/2/2017**

Percentage completed 88%

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | €5,000,000 x 88% | 4,400 |
| | Less recognised 28/2/2016 | (2,000) |
| | Revenue y/e 28/2/2017 | 2,400 |
| Cost of sales | Revenue + loss | |
| | €4,400,000 + €400,000 | 4,800 |
| | Less recognised 28/2/2016 | (2,400) |
| | Cost of sales y/e 28/2/2017 | 2,400 |

**Statement of comprehensive income (extract)**
**For the year ended 28 February 2017**

| | **2017** | **2016** |
|---|---|---|
| | **€000** | **€000** |
| Revenue | 2,400 | 2,000 |
| Cost of sales | (2,400) | (2,400) |
| Gross profit | 0 | (400) |

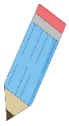
**SE 6 - Solution**
**Step one - overall outcome**
**(ignoring contingent revenue)**

| | €000 | €000 |
|---|---|---|
| Contract value | | 6,000 |
| Total costs | | |
| Costs to date | (3,300) | |
| Costs to complete | (1,300) | (4,600) |
| Profit/(loss) | | 1,400 |

**Step two - percentage completed** 70%

Outcome reasonably certain

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | | **€000** |
| | €6,200,000 x 70% | 4,340 |
| Cost of sales | Total costs x percentage completed | |
| | €4,600,000 x 70% | 3,220 |



**Points to note**

At 28/2/2016 the company is reasonably certain that it will be able to complete the contract within the specified time period and therefore overall expected revenue is increased to €6,200,000

**Oak PLC**
**Statement of comprehensive income (extract)**
**For the year ended 28 February 2016**

| | €000 |
|---|---|
| Revenue | 4,340 |
| Cost of sales | (3,220) |
| Gross profit | 1,120 |

**SE 7 - Solution**
**Step one - overall outcome**
**(ignoring penalty deduction)**

| | €000 | €000 |
|---|---|---|
| Contract value | | 9,000 |
| Total costs | | |
| Costs to date | (3,200) | |
| Costs to complete | (3,000) | (6,200) |
| Profit/(loss) | | 2,800 |

**Step two - percentage completed** 50%

Outcome reasonably certain

| | | €000 |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | €8,730,000 x 50% | 4,365 |
| Cost of sales | Total costs x percentage completed | |
| | €6,200,000 x 50% | 3,100 |

**Points to note**

At 28/2/2016 the company believes that it will not meet the deadline for completion of the contract of 31 October 2016 and therefore a penalty deduction from overall revenue has been made.

**Oak PLC**
**Statement of comprehensive income (extract)**
**For the year ended 28 February 2016**

| | €000 |
|---|---|
| Revenue | 4,365 |
| Cost of sales | (3,100) |
| Gross profit | 1,265 |

**SE 8 - Solution**

**Step one - overall outcome**

| | €000 | €000 |
|---|---|---|
| Contract value | | 7,600 |
| Total costs | | |
| Costs to date | (1,000) | |
| Costs to complete | (5,200) | (6,200) |
| Profit/(loss) | | 1,400 |

**Step two - percentage completed** 15%

**1140/7600**

Outcome not certain

| | | €000 |
|---|---|---|
| Revenue | Costs to date | 1,000 |
| Cost of sales | Costs to date | 1,000 |

**Oak PLC**

**Statement of comprehensive income (extract)**

**For the year ended 28 February 2016**

| | €000 |
|---|---|
| Revenue | 1,000 |
| Cost of sales | (1,000) |
| Gross profit | 0 |

**SE 9 - Solution**

**Step one - overall outcome**

| | €000 | €000 |
|---|---|---|
| Contract value | | 4,100 |
| Total costs | | |
| Costs to date | (2,120) | |
| Costs to complete | (3,010) | (5,130) |
| Profit/(loss) | | (1,030) |

| | | |
|---|---|---|
| **Step two - percentage completed** | | 71% |
| **Units completed** | **5** | |
| **Total units** | **7** | |

Outcome reasonably certain

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | | **€000** |
| | €4,100,000 x 71% | 2,911 |
| Cost of sales | Revenue + expected loss | |
| | €2,911,000 + €1,030,000 | 3,941 |

**Oak PLC**

**Statement of comprehensive income (extract)**

**For the year ended 28 February 2016**

| | €000 |
|---|---|
| Revenue | 2,911 |
| Cost of sales | (3,941) |
| Gross loss | (1,030) |

**SE 10 - Solution**

**Step one - overall outcome**

| | €000 | €000 |
|---|---|---|
| Contract value | | 2,900 |
| Total costs | | |
| Costs to date | (1,000) | |
| Costs to complete | (1,800) | (2,800) |
| Profit/(loss) | | 100 |

| | | |
|---|---|---|
| **Step two - percentage completed** | | **35%** |
| **Costs to date** | **1000-50** | |
| **Total costs** | **1000-50+1800** | |

Outcome reasonably certain

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | | **€000** |
| | €2,900,000 x 35% | 1,015 |
| Cost of sales | Total costs x percentage completed | |
| | €2,750,000 x 35% + €50,00 | 1,013 |

Cost of sales figure includes relevant percentage of total costs excluding €50,000 idle time costs plus full write off of idle time costs

**Oak PLC**

**Statement of comprehensive income (extract)**

**For the year ended 28 February 2016**

| | €000 |
|---|---|
| Revenue | 1,015 |
| Cost of sales | (1,013) |
| Gross profit | 2 |

**SE 11 - Solution**
**Step one - overall outcome**

| | €000 | €000 |
|---|---|---|
| Contract value | | 3,500 |
| Total costs | | |
| Costs to date | (1,900) | |
| Costs to complete | (1,800) | (3,700) |
| Profit/(loss) | | (200) |

**Step two - percentage completed** 51%

| | |
|---|---|
| **Costs to date** | 1,900 |
| **Total costs** | 3,700 |

Outcome reasonably certain

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | | **€000** |
| | €3,500,000 x 51% | 1,785 |
| Cost of sales | Revenue + expected loss | |
| | €1,785,000 + €200,000 | 1,985 |

**Statement of financial position workings**
**Contract asset/(liability)**

| | €000 |
|---|---|
| Costs to date | 1,900 |
| Profit/(loss) recognised | (200) |
| Less progress payments invoiced | (1,600) |
| Contract asset | 100 |

**Receivable**

| | |
|---|---|
| Progress payments invoiced | 1,600 |
| Progress payments received | (1,000) |
| | 600 |

**Oak PLC**
**Statement of comprehensive income (extract)**
**For the year ended 28 February 2016**

| | €000 |
|---|---|
| Revenue | 1,785 |
| Cost of sales | (1,985) |
| Loss | (200) |

**Oak PLC**
**Statement of Financial Position (extract)**
**As at 28 February 2016**

| | |
|---|---|
| **Current assets** | |
| Contract asset | 100 |
| Receivables | 600 |

**SE 12 - Solution**

**Step one - overall outcome**

| | €000 | €000 |
|---|---|---|
| Contract value | | 5,500 |
| Total costs | | |
| Costs to date | (3,000) | |
| Costs to complete | (1,800) | (4,800) |
| Profit/(loss) | | 700 |

**Step two - percentage completed** 60%

| | |
|---|---|
| **Surveyor's valuation** | 3,300 |
| **Total contract value** | 5,500 |

Outcome reasonably certain

| | | |
|---|---|---|
| Revenue | Contract value x percentage completed | |
| | | **€000** |
| | €5,500,000 x 60% | 3,300 |
| Cost of sales | Total costs x percentage completed | |
| | €4,800,000 x 60% | 2,880 |
| Profit recognised | | 420 |

**Statement of financial position workings**

**Contract asset/(liability)**

| | €000 |
|---|---|
| Costs to date | 3,000 |
| Profit/(loss) recognised | 420 |
| Less progress payments invoiced | (3,100) |
| Contract asset | 320 |

**Receivable**

| | |
|---|---|
| Progress payments invoiced | 3,100 |
| Progress payments received | (2,800) |
| | 300 |

**Oak PLC**
**Statement of comprehensive income (extract)**
**For the year ended 28 February 2016**

| | €000 |
|---|---|
| Revenue | 3,300 |
| Cost of sales | (2,880) |
| Loss | 420 |

**Oak PLC**
**Statement of Financial Position (extract)**
**As at 28 February 2016**

| | |
|---|---|
| **Current assets** | |
| Contract asset | 320 |
| Receivables | 300 |

# DEFERRED TAX

This chapter introduces deferred tax – allowing you to gain an understanding of what exactly deferred tax is, why it is required and covering some basic examples. In year four a more detailed study of this topic will take place. The accounting treatment of deferred tax is set out in IAS 12 Income taxes.

On completion of this chapter learners should be able to:

Apply and discuss the IFRS requirements in relation to the treatment of deferred taxation.

In this chapter the following is examined:

- ✓ Introduction to the topic
- ✓ Definitions
- ✓ Impact of movement in deferred tax balance in the financial statements
- ✓ Calculating the deferred tax balance
- ✓ Worked examples
- ✓ Disclosures

## Introduction

Deferred tax is an accounting adjustment that takes account of the differences between the accounting treatment of income and expenses and the tax treatment of same. If deferred tax were ignored there could be little link between the tax charge and the accounting profit. The reason for this is that the tax charge is calculated on taxable profit which may differ quite substantially from accounting profit.

Deferred tax attempts to smooth out the differences between the tax and accounting treatment of timing differences by accruing the tax impact of such differences at the time they are accounted for though the deferred tax system. This treatment is in keeping with the Conceptual Framework for Financial reporting which underpins the International Accounting Standards. That framework encourages the use of accrual accounting which "depicts the effects of transactions …on a reporting entity's economic resources and claims in the periods in which those effects occur, even if the resulting cash receipts and payments occur in a different period" (Para OB 17)

Consider the example set out below:

D Company Ltd's only income earned in 2015 is interest income of €250,000. The interest income is not received by D Company until 3rd February 2016. D Company has further interest income of €20,000 in 2016 all of which is received by 31 December 2016. Under the tax system in which D company operates, tax is only payable on interest income when the income is received. If D company has no other income and expenditure for 2015 and 2016 the tax charge of the company for the years ended 31 December 2015 and 2016 would be as follows, assuming a tax rate of 20%.

**Workings**

Tax charge 2015: Zero as no income was received in 2015

Tax charge 2016: €54,000 [€250,000 + €20,000] x 20%

**D Company Ltd**

**Statement of Comprehensive Income for the year ended 31 December 2016**

| | 2016 | 2015 |
|---|---|---|
| | € | € |
| Profit before tax | 20,000 | 250,000 |
| Income tax expense | (54,000) | - |
| Profit/(loss) after tax | (34,000) | 250,000 |

Clearly the above tax charges make very little sense to anyone reading the financial statements of D Company Ltd and demonstrates the problem with calculating tax on taxable profits whilst profit before tax is calculated using accounting rules. To counteract the impacts of these differences, deferred tax takes account of the effects of temporary differences between the tax and accounting system. The deferred tax impact in the above case for D Company Ltd would be to accrue the tax due on the 2015 income in 2015 by setting up a deferred tax provision of €50,000 €250,000 x 20% = €50,000 and then releasing it in the following year when the actual tax liability becomes due under normal tax rules

The summarised Statement of comprehensive income of the company for the year ended 31 December 2016 with 2015 comparatives would then look as follows:

**D Company Ltd**

**Statement of Comprehensive Income for the year ended 31 December 2016**

| | **2016** | **2015** |
|---|---|---|
| | **€** | **€** |
| Profit before tax | 20,000 | 250,000 |
| **Income tax expense** | | |
| Current taxation | (54,000) | |
| Deferred taxation | 50,000 | (50,000) |
| Profit after tax | 16,000 | 200,000 |

The double entry required to record the introduction of a deferred tax provision in 2015 is

| | | |
|---|---|---|
| Dr Income tax expense | 50,000 | |
| CR Deferred tax provision | | 50,000 |

The reversal of this deferred tax provision 2016 is recorded as follows

| | | |
|---|---|---|
| Dr Deferred tax provision | 50,000 | |
| Cr Income tax expense | | 50,000 |

**Definitions IAS 12 Para 5**

| | |
|---|---|
| Deferred tax liabilities | The amounts of income taxes payable in future periods in respect of taxable temporary differences |
| Deferred tax assets | The amounts of income taxes recoverable in future periods in respect of deductible temporary differences, unused losses and unused tax credits |
| Temporary differences | Differences between the carrying amount of an asset or liability and its tax base. |
| Tax base of an asset/liability | Amount attributed to that asset or liability for tax purposes |
| Taxable temporary differences | Temporary differences that will result in higher taxable profits in the future when such differences are reversed |
| Deductible temporary differences | Temporary differences that will result in lower taxable profits in the future when such differences are reversed. |
| Current tax | Income tax payable in respect of the taxable profits of the reporting period. |

| |
|---|
| IAS 12 does not define permanent differences. These are assets and liabilities which have a value for accounting purposes but not for tax purposes as they are not taxable/deductible for tax purposes. Examples would include dividend income receivable in an Irish context. |

**Impact of movement in the deferred tax balance in the financial statements**

At the end of each financial period a company will compare the carrying value of its assets and liabilities with their tax bases. This exercise will allow them to calculate the deferred tax provision or asset of the company at the end of the reporting period. In general, the movement in the deferred tax provision or asset during the reporting period is included in the income tax expense of the company for that year.

The closing balance of deferred tax relates to future tax – which will be due at some stage in the future. For this reason, the deferred tax balance is always considered to be non-current – asset or liability.

These points are demonstrated in the example below:

**Worked example 1**

Zebra PLC has calculated its deferred tax balance at 31 May 2017 to be a liability or credit balance of €117,000. The equivalent balance at 1 June 2016 had been €98,000 credit.
Zebra's tax on its profits for the year (current tax) totalled €75,000. Profit before tax of the company for the year ended 31 May 2017 was €315,000.

**Requirement**
Show extracts from the company's SOCI and SOFP at 31 May 2017 to reflect the above. All movement in the deferred tax balance relates to items shown in profit in the year ended 31 May 2017.

**Worked example 1 Solution**
Workings
Income tax expense – **note it is normal to show one figure for the income tax expense in the SOCI with the make-up of the figure being included in the notes to the financial statements**

**Workings**

| **Deferred tax movement** | **€** |
|---|---|
| Opening balance | 98,000 |
| SOCI | 19,000 |
| Closing balance | 117,000 |

| **Income tax expense** | |
|---|---|
| Current taxation | 75,000 |
| Deferred taxation | 19,000 |
| Income tax expense | 94,000 |

**Zebra PLC**
**Statement of Comprehensive Income (Extract)**
**For the year ended 31 May 2017**

| | € |
|---|---|
| Profit before tax | 315,000 |
| Income tax expense | (94,000) |
| Profit/(loss) after tax | 221,000 |

**Zebra PLC**
**Statement of Financial Position (Extract)**
**As at 31 May 2017**

| | € |
|---|---|
| **Equity and liabilities** | |
| **Non-current liabilities** | |
| Deferred tax | 117,000 |
| **Current liabilities** | |
| Corporation tax due | 75,000 |

**Points to note**:

Deferred tax in the SOCI is the movement on the provision during the year. An increase in the provision will give rise to an extra expense Dr Income tax expense Cr Provision. This is the case for Zebra PLC in the above example. A decrease in the provision would reduce the income tax expense [Dr Provision CR Income tax expense]

The closing deferred tax provision is a non-current liability (or a non-current asset) in the SOFP. The deferred tax provision is a book entry only IT IS NEVER PAID rather it becomes a current tax liability and that is the liability that is eventually paid.

IAS 12 requires companies to recognise the tax impacts of a revaluation surplus even where the company has no intention to sell the revalued property in the foreseeable future. The sale of the property is the only way under the Irish tax system that a current tax liability would become payable on the revalued asset. The deferred tax balance on the revaluation accrues the tax payable in the future on such a disposal.

The movement in the deferred tax balance may therefore relate to both items included in profit and those included in other comprehensive income. In this case the movement in the deferred tax balance each year will need to be split between the income tax expense and a tax charge on other comprehensive income. The example below considers this possibility:

**Worked example 2**

Zebra PLC has calculated its deferred tax balance at 31 May 2018 to be a liability balance of €132,000. As indicated in worked example 1 the deferred tax balance at 31 May 2017 was €117,000 CR.
Zebra's tax on its profits for the year (current tax) totalled €141,000. Profit before tax of the company for the year ended 31 May 2018 was €390,000. The company also recognised other comprehensive income for the year ended 31 May 2018 of €200,000. This arose because of the revaluation of the company's headquarters. Deferred tax implications of this revaluation were €40,000 [€200,000 x 20%]

**Requirement**
Show extracts from the company's SOCI and SOFP at 31 May 2018 to reflect the above. All movement in the deferred tax balance, except for the tax impact of the revaluation of the headquarters, relate to items shown in profit in the year ended 31 May 2018.

**Worked example 2 Solution**
Workings

| **Deferred tax movement** | € |
|---|---|
| Opening balance 1/6/2017 | 117,000 |
| OCI | 40,000 |
| SOCI | (25,000) |
| Closing balance | 132,000 |

**Point to note**

Any movement in the deferred tax balance which has not been identified as relating to other comprehensive income relates to items included in profit and will be added to or deducted from current taxation in the income tax expense.

| Income tax expense | **€** |
|---|---|
| Current taxation | 141,000 |
| Deferred taxation | (25,000) |
| Income tax expense | 116,000 |

**Zebra PLC**
**Statement of Comprehensive Income (Extract)**
**For the year ended 31 May 2018**

| | € |
|---|---|
| Profit before tax | 390,000 |
| Income tax expense | (116,000) |
| Profit/(loss) after tax | 274,000 |
| Other comprehensive income | |
| Revaluation surplus | 200,000 |
| Tax on revaluation surplus | (40,000) |
| Total comprehensive income | 434,000 |

**Zebra PLC**
**Statement of Financial Position (Extract)**
**As at 31 May 2017**

| | € |
|---|---|
| **Equity and liabilities** | |
| **Equity** | |
| Revaluation reserve | 160,000 |
| **Non-current liabilities** | |
| Deferred tax | 132,000 |
| **Current liabilities** | |
| Corporation tax due | 141,000 |

**Points to note:**

The double entry to recognise the revaluation surplus and related tax liability are as follows:

| | | |
|---|---|---|
| Dr Headquarters at valuation | 200,000 | |
| Cr Revaluation reserve | | 200,000 |

Recognition of revaluation of headquarters.

| | | |
|---|---|---|
| Dr Revaluation reserve | 40,000 | |
| Cr Deferred tax | | 40,000 |

Recognising tax impact of revaluation surplus.

The revaluation reserve closing balance is €200,000 - €40,000 = €160,000.

You should now try examples SE 1 and SE 2

## Calculating the deferred tax balance

As set out in the definitions section of this chapter, the tax base of an asset or liability is the amount that is attributable to that asset or liability for tax purposes. Considering this in more detail the tax base of an asset such as property, plant and equipment (PPE) is its tax written down value – cost less wear and tear deducted from the asset since acquisition.

The tax base of a liability is the carrying amount of the liability for accounting purposes less any amount that will be deductible in calculating future tax liabilities. Consider an accrual for pension costs of €20,000. Pension costs in Ireland are only deductible when they have been paid. The tax base of this liability is therefore zero – being the liability for accounting purposes of €20,000 less the amount that will be deductible against future profits – which is also €20,000.

When calculating the closing deferred tax balance of a business, IAS 12 requires companies to consider differences between the tax treatment and accounting treatment from a balance sheet or SOFP perspective. At the end of each accounting period these differences will be calculated and will give rise to an overall deferred tax asset or a deferred tax provision.

Consider the example set out below:

### Worked example 3

Zebra PLC is calculating its deferred tax balance at 31 May 2019. At 1 June 2018, the net book value of the plant and machinery of the company was €1,750,000 (original cost €3,000,000) whilst the tax written down value of the plant and machinery was €1,290,000. The carrying value of its land was €1,000,000, which was €200,000 above cost, because of a revaluation carried out during the year ended 31 May 2018. During the year ended 31 May 2019 depreciation of €280,000 was charged on the plant and machinery whilst capital allowances of €375,000 were claimed.

At 31 May 2019 Zebra PLC also has a liability of €10,000 in relation to pension costs unpaid at the balance sheet date. This €10,000 will only be allowed for tax purposes when paid.

Profit before tax of Zebra PLC for the year ended 31 May 2019 was €410,000 and current tax on its profits totalled €95,000.

### Requirements:

Calculate the closing deferred tax balance of Zebra PLC at 31 May 2019 and show extracts from the company's SOCI and SOFP at 31 May 2018 to reflect the information set out above. All movement in the deferred tax balance relates to items shown in profit in the year ended 31 May 2019.

**Worked example 3 – solution**

Workings

NBV & TWDV of Plant and machinery at 31/5/2019

| | NBV | TWDV |
|---|---|---|
| | € | € |
| Opening balance at 1/6/2018 | 1,750,000 | 1,290,000 |
| Less depreciation for the year to 31/5/2019 | (280,000) | |
| Less wear and tear for year to 31/5/2019 | | (375,000) |
| Closing balance at 31/5/2019 | 1,470,000 | 915,000 |

Differences between assets and liabilities for tax and accounting purposes at 31 May 2019.

| | Accounting | Tax | Difference |
|---|---|---|---|
| **PPE** | **€** | **€** | **€** |
| Plant and machinery | 1,470,000 | 915,000 | 555,000 |
| Land | 1,000,000 | 800,000 | 200,000 |
| Liability | 10,000 | 0 | (10,000) |
| | | | 745,000 |

Closing deferred tax balance is total (net) differences x tax rate

€745,000 x 20% = €149,000. This is the closing deferred tax balance.

**Points to note**

The differences between the accounting balance and the tax balance for plant and machinery will result in higher taxable than accounting profits in the future. This difference is therefore a taxable temporary difference and requires an increase in the deferred tax provision.

The differences between the accounting balance and the tax balance for land will result in higher taxable than accounting profits in the future when the land is eventually sold at a profit. This difference is therefore a taxable temporary difference and requires an increase in the deferred tax provision

The liability difference will result in lower taxable than accounting profits when the pension liability is paid. This difference is therefore a deductible temporary difference and requires a decrease in the deferred tax provision.

Now that the closing deferred tax balance is calculated we can recognise the impact of this balance and related movement in the financial statements:

| Deferred tax movement | € |
|---|---|
| Opening balance 1/6/2018 | 132,000 |
| SOCI | 17,000 |
| Closing balance | 149,000 |

**Point to note**

The revaluation of the land took place in the year ended 31 May 2018 and there has been no change in the value of the land during 2019 therefore there is no deferred tax impact during 2019

| Income tax expense | € |
|---|---|
| Current taxation | 95,000 |
| Deferred taxation | 17,000 |
| Income tax expense | 112,000 |

**Zebra PLC**
**Statement of Comprehensive Income (Extract)**
**For the year ended 31 May 2019**

| | € |
|---|---|
| Profit before tax | 410,000 |
| Income tax expense | (112,000) |
| Profit/(loss) after tax | 298,000 |

**Zebra PLC**
**Statement of Financial Position (Extract)**
**As at 31 May 2019**

| | € |
|---|---|
| **Equity and liabilities** | |
| **Non-current liabilities** | |
| Deferred tax | 149,000 |
| **Current liabilities** | |
| Corporation tax due | 95,000 |

## Disclosures

IAS 12 requires the major components of the income tax expense for the accounting period to be disclosed (IAS 12 para79). This would require showing separately the current tax expense and deferred tax elements. This would normally be given in a note to the accounts.

The standard also requires separate disclosure of tax (both current and deferred) arising from items being credited directly to equity. This would normally be shown in other comprehensive income make-up as seen in worked example 2 above.

Some more detailed disclosures are required but this will be studied in year 4.

**SE 1**

Oak PLC had a deferred tax balance of €20,000 Dr on 1 March 2015. During the year ended 28 February 2016 the company revalued its property giving rise to a revaluation surplus of €110,000. The closing deferred tax balance of the company at 28 February 2016 was €32,000 Cr. Profits for the year ended 28 February 2016 were €356,000 and current tax on these profits was €66,000. The tax rate applicable to the company's profits was 25%.

**Requirements:**

Show extracts from Oak's SOCI for the year ended 28 February 2016 and its SOFP at 28 February 2016 to reflect the information set out above.

**SE 2**

Oak PLC's deferred tax balance at 28 February 2017 has been calculated at €40,000 Cr. During the year ended 28 February 2017 the company again revalued its property giving rise to a revaluation deficit of €90,000. Profits of Oak PLC for the year ended 28 February 2017 were €295,000 and current tax on these profits was €45,000. The company had also under provided current tax in the year ended 28 February 2016 by €10,000. The tax rate applicable to the company's profits was 25%.

**Requirements:**

Show extracts from Oak's SOCI for the year ended 28 February 2017 and its SOFP at 28 February 2017 to reflect the information set out above.

**SE 3**

Oak PLC is calculating its deferred tax balance at 28 February 2018. At 1 March 2017 its plant had a net book value of €496,000 (original cost €630,000) whilst its vehicles had a net book value of €103,000 (original cost 210,000). The tax written down value of these assets at 1 March 2017 was €389,000 and €70,000 respectively. Depreciation of 10% straight line and 12.5% reducing balance is charged on the plant and vehicles respectively during the year ended 28 February 2018. Wear and tear of 12.5% of the original cost of the assets was allowed for tax purposes during this year.

Profit before tax of Oak PLC is €320,000 for the year ended 28 February 2018 and current tax charge on this is €74,000.

**Requirements:**

Calculate the closing deferred tax balance of Oak PLC at 28 February 2018 and show extracts from the company's SOCI for the year ended 28 February 2018 and SOFP at the same date to reflect the impact of current and deferred taxation in its financial statements.

**Solutions to student examples**

**SE 1 solution**

**Workings**

| Deferred tax movement | € |
|---|---|
| Opening balance 1/3/2015 | (20,000) |
| OCI | 27,500 |
| SOCI | 24,500 |
| Closing balance | 32,000 |

Note: Charge to be offset against other comprehensive income arises from the current year revaluation surplus of €110,000 x 25% = €27,500. All remaining movement is taken to relate to items included in profit for the year and is therefore charged against profit.

| Income tax expense | **€** |
|---|---|
| Current taxation | 66,000 |
| Deferred taxation | 24,500 |
| Income tax expense | 90,500 |

**Oak PLC**
**Statement of Comprehensive Income (Extract)**
**For the year ended 28 February 2016**

| | **€** |
|---|---|
| Profit before tax | 356,000 |
| Income tax expense | (90,500) |
| Profit after tax | 265,500 |
| Other comprehensive income | |
| Revaluation surplus | 110,000 |
| Tax on revaluation surplus | (27,500) |
| Total comprehensive income | 348,000 |

**Oak PLC**
**Statement of Financial Position (Extract)**
**As at 28 February 2016**

| | € |
|---|---|
| **Equity and liabilities** | |
| **Equity** | |
| Revaluation reserve | 82,500 |
| **Non-current liabilities** | |
| Deferred tax | 32,000 |
| **Current liabilities** | |
| **Corporation tax due** | 66,000 |

**Point to note**

Revaluation reserve balance comprises the surplus on revaluation arising this year less the related tax charge = €110,000 – 27,500 = €82,500

**SE 2 solution**

Workings

| Deferred tax movement | € |
|---|---|
| Opening balance 1/3/2016 | 32,000 |
| OCI | (22,500) |
| SOCI | 30,500 |
| Closing balance | 40,000 |

Note: Credit to be included in other comprehensive income arises from the current year revaluation deficit of €90,000 x 25% = €22,500. All remaining movement is taken to relate to items included in profit for the year and is therefore charged against profit.

| Income tax expense | € |
|---|---|
| Current taxation | 45,000 |
| Deferred taxation | 30,500 |
| Income tax expense | 75,500 |

**Oak PLC**
**Statement of Comprehensive Income (Extract)**
**For the year ended 28 February 2017**

| | € |
|---|---|
| Profit before tax | 295,000 |
| Income tax expense | (75,500) |
| Profit after tax | 219,500 |
| Other comprehensive income | |
| Revaluation deficit | (90,000) |
| Tax on revaluation deficit | 22,500 |
| Total comprehensive income | 152,000 |

**Oak PLC**
**Statement of Financial Position (Extract)**
**As at 28 February 2017**

| | € |
|---|---|
| **Equity and liabilities** | |
| **Equity** | |
| Revaluation reserve | 15,000 |
| **Non-current liabilities** | |
| Deferred tax | 40,000 |
| **Current liabilities** | |
| Corporation tax due | 45,000 |

Revaluation reserve balance is reduced in the current year by the after-tax impact of the revaluation deficit:

| | |
|---|---|
| Opening balance 1/3/2016 | 82,500 |
| Revaluation deficit | (90,000) |
| Tax on revaluation deficit | 22,500 |
| Closing balance | 15,000 |

**SE 3 solution**

**Workings**

NBV & TWDV of Plant and vehicles at 28/2/2018

| Net book value of plant & vehicles | **Plant** | **Vehicles** |
|---|---|---|
| | **€** | **€** |
| Net book value 1/3/2017 | 496,000 | 103,000 |
| Less depreciation for the year to 28/2/2018 | (63,000) | (12,875) |
| Plant depreciation €630,000 x 10%<br>Vehicles depreciation €103,000 x 12.5% | | |
| Net book value at 28/2/2018 | 433,000 | 90,125 |

| | **Plant** | **Vehicles** |
|---|---|---|
| | **€** | **€** |
| Tax written down value 1/3/2017 | 389,000 | 70,000 |
| Less wear and tear for year to 28/2/2018 | (78,750) | (26,250) |
| Plant wear & tear €630,000 x 12.5%<br>Vehicles wear & tear €210,000 x 12.5% | | |
| Closing balance at 28/2/2018 | 310,250 | 43,750 |

Differences between assets and liabilities for tax and accounting purposes at 28 February 2018.

| | **Accounting** | **Tax** | **Difference** |
|---|---|---|---|
| **PPE** | **€** | **€** | **€** |
| Plant | 433,000 | 310,250 | 122,750 |
| Vehicles | 90,125 | 43,750 | 46,375 |
| Property | | | 20,000 |
| | | | 189,125 |

Closing deferred tax balance €189,125 x 25% = 47,281 This is the closing deferred tax balance.

**Point to Note**

Property net revaluation surplus of €110,000 - €90,000 = €20,000 will still give rise to a higher value for accounting purposes – the question does not detail the amount of the revalued property only the amount of the surplus and subsequent deficit.

| Deferred tax movement | € |
|---|---|
| Opening balance 1/3/2017 | 40,000 |
| SOCI | 7,281 |
| Closing balance | 47,281 |

| Income tax expense | € |
|---|---|
| Current taxation | 74,000 |
| Deferred taxation | 7,281 |
| Income tax expense | 81,281 |

**Oak PLC**
**Statement of Comprehensive Income (Extract)**
**For the year ended 28 February 2018**

| | € |
|---|---|
| Profit before tax | 320,000 |
| Income tax expense | (81,281) |
| Profit/(loss) after tax | 238,719 |

**Oak PLC**
**Statement of Financial Position (Extract)**
**As at 28 February 2018**

| | € |
|---|---|
| **Equity and liabilities** | |
| **Non-current liabilities** | |
| Deferred tax | 47,281 |
| **Current liabilities** | |
| Corporation tax due | 74,000 |

**This end of section example is designed to be attempted by students after the material on Financial Instruments, Construction Contracts and Deferred tax has been studied thoroughly.**

## End of section example

The trial balance of Girder PLC is set out below at 31 May 2016

| | € | € |
|---|---|---|
| Ordinary share capital - €1 | | 300,000 |
| 8% Irredeemable preference shares - €1 | | 250,000 |
| Retained earnings 1/6/2015 | | 245,375 |
| 4% Loan notes | | 200,000 |
| Deferred taxation at 1/6/2015 | | 3,625 |
| Land at cost | 290,000 | |
| Buildings at cost | 470,000 | |
| Plant & Equipment at cost | 271,000 | |
| Accumulated depreciation -Buildings - 1/6/2015 | | 82,000 |
| Accumulated depreciation -Plant & Equipment 1/6/2015 | | 102,000 |
| Trade Receivables | 116,000 | |
| Inventory 01/6/2015 | 71,000 | |
| Bank | 25,000 | |
| Trade Payables | | 90,000 |
| Revenue | | 438,900 |
| Purchases | 126,000 | |
| Investments | 135,000 | |
| Distribution costs | 31,000 | |
| Administrative expenses | 29,000 | |
| Interim dividend paid | 36,000 | |
| Tax y/e 31/5/2015 | | 11,000 |
| Bank Interest | 20,000 | |
| Construction contract costs | 102,900 | |
| | 1,722,900 | 1,722,900 |

**Other relevant information:**

1) Investments in the trial balance include shares in a company Air PLC. These shares are held for trading. The shares in Air PLC initially cost €80,000 (and this is their value in the trial balance) and were acquired in October 2015. The value of these investments is now €75,000. The remaining investments are shares acquired in a competitor Steel PLC and they were originally acquired for €50,000 in January 2016. Their value at 31 May 2016 is €57,000. At acquisition an irrevocable election was made to report the value changes on these shares in other comprehensive income as it is the intention of Girder PLC to hold these for the long term. Also included in investments in the trial balance are the costs of acquiring the shares in Air PLC €2,000 and the shares in Steel PLC €3,000.

2) Land was revalued to €370,000 on 20 May 2016. This revaluation is to be reflected in the financial statements of the company for the year ended 31 May 2016. The revaluation surplus gave rise to a deferred tax provision increase of 12.5% of this surplus.

3) Depreciation rates normally used by the company are:

| | |
|---|---|
| Buildings | 2% straight line |
| Plant & equipment | 10% straight line. |

The tax written down value of the plant and equipment at 31 May 2015 was €140,000. Capital allowances in respect of the plant and equipment for the year to 31 May 2016 were €36,000. The buildings do not qualify for capital allowances.
Depreciation of plant and machinery is charged to cost of sales whilst buildings depreciation is charged to administrative expenses.

4) The loan notes which have a nominal value of €200,000 were issued on 1 June 2015. The loan notes are convertible into ordinary shares in June 2019. The interest rate applicable to similar loan notes without the conversion option is 7%. Interest is paid on the loan notes yearly in arrears.

5) Closing inventory on hand at 31 May 2016 totalled €83,000.

6) The tax balance in the trial balance relating to the year ended 31 May 2015 represents the difference between the amount provided for that year and the amount paid. Current tax on profits for the year to 31 May 2016 totalled €27,000. This figure will not change as a result of the adjustments required in relation to information items 1-8.The rate of tax on the profits of the company is 12.5%.

7) The interim dividend paid includes the full preference dividend for the year. No final ordinary dividend has been proposed in respect of the year ended 31 May 2016.

8) During the year ended 31 May 2016 Girder PLC commenced a construction contract as part of an expansion of its business. The company has not previously been involved in this type of business. Details of the contract undertaken by the company are set out below:

| | € |
|---|---|
| Contract Value | 370,000 |
| Costs to date (See Trial balance) | 102,900 |
| Costs to complete | 191,100 |
| Progress billings invoiced | 90,000 |
| Progress billings received | 0 |
| Estimated completion date | 30 April 2017 |
| Percentage completed | Calculate based on costs to date as a percentage of total costs. |

Girder has assessed that the outcome of this contract is reasonable certain at 31 May 2016

**Requirements**

**a)** Prepare the Statement of Comprehensive income of Girder PLC for the year ended 31 May 2016

**b)** Prepare the statement of changes in equity of Girder PLC for the year ended 31 May 2016

**c)** Prepare the Statement of Financial Position of Girder PLC as at 31 May 2016.

.

**Solution 1**

**Workings**

| | Cost of sales | Administrative expenses | Distribution costs |
|---|---|---|---|
| Opening inventory | 71,000 | | |
| Purchases | 126,000 | | |
| Closing inventory | (83,000) | | |
| P&E depreciation | 27,100 | | |
| Buildings depreciation | | 9,400 | |
| Admin expenses | | 29,000 | |
| Distribution costs | | | 31,000 |
| Construction contract costs | 102,900 | | |
| | 244,000 | 38,400 | 31,000 |

| | Finance cost Workings |
|---|---|
| Cost of acquisition of investments in Air PLC | 2,000 |
| Convertible loan notes - finance charge | 12,579 |
| Bank interest (per trial balance) | 20,000 |
| | 34,579 |

**Interest payable on loan notes**

€200,000 x 4% € 8,000

| Date | Cash flow € | Discount Factor 7% | Discounted Cash flows € |
|---|---|---|---|
| 01/06/2016 | 8,000 | 0.935 | 7,480 |
| 01/06/2017 | 8,000 | 0.873 | 6,984 |
| 01/06/2018 | 8,000 | 0.816 | 6,528 |
| 01/06/2019 | 208,000 | 0.763 | 158,704 |
| | | | 179,696 |

| | |
|---|---|
| Debt element of convertible loan notes at issue date | 179,696 |
| Equity element of loan notes at issue date | 20,304 |
| | 200,000 |

| **Movement on debt element of convertible loan notes** | **€** |
|---|---|
| Debt element at issue date | 179,696 |
| Finance charge [€179696 x 7%] | 12,579 |
| Less payable to holders of loan notes **[200,000 x 4%]** | (8,000) |
| Debt element at 31/5/2016 | 184,275 |

**Deferred tax**

| | **P&E NBV** | **P&E TWDV** | **Difference** |
|---|---|---|---|
| | **€** | **€** | **€** |
| Cost | 271,000 | | |
| Accumulated depreciation | | | |
| At 1/6/2015 | (102,000) | | |
| Charge for year | (27,100) | | |
| TWDV at 1/6/2015 | | 140,000 | |
| Capital allowances y/e 31/5/2016 | | (36,000) | |
| | 141,900 | 104,000 | 37,900 |
| Land revaluation surplus | | | 80,000 |
| | | | 117,900 |
| | | | x 12.5% |
| Closing provision | | | 14,738 |

**Deferred tax movement**

| | |
|---|---|
| Opening provision | 3,625 |
| Include in other comprehensive income | 10,000 |
| Charge for year – income tax expense ( Balancing figure) | 1,113 |
| Closing Provision | 14,738 |

| **Income tax expense** | **€** |
|---|---|
| Current year | 27,000 |
| Prior year over provision | (11,000) |
| Deferred tax – | 1,113 |
| | 17,113 |

| **Construction contract** | | **€** |
|---|---|---|
| Overall outcome | | |
| Contract value | | 370,000 |
| Total costs | 102,900 + 191,100 | (294,000) |
| Profit expected | | 76,000 |

Percentage completed at 31/5/2016

| | | |
|---|---|---|
| Costs to date | 102,900 | 35% |
| Total costs | 294,000 | |

| | |
|---|---|
| Include in revenue: €370,000 x 35% | 129,500 |
| Include in cost of sales €294,000 x 35% | 102.900 |
| Profit recognised | 26,600 |

*Construction contract balance in statement of financial position*

| | |
|---|---|
| Costs to date | 102,900 |
| Add profit recognised | 26,600 |
| Less progress billings invoiced | (90,000) |
| Construction contract current asset | 39,500 |

| | |
|---|---|
| Add to receivables in statement of financial position | |
| Progress billings invoiced | 90,000 |
| Progress billings received | - |
| Add to receivables | 90,000 |

**Girder PLC**
**Statement of comprehensive Income**

| **For the year ended 31 May 2016** | **€** |
|---|---|
| Revenue [438,900 + 129,500] | 568,400 |
| Cost of sales | (244,000) |
| Gross profit | 324,400 |
| Administration expenses | (38,400) |
| Distribution costs | (31,000) |
| Finance cost | (34,579) |
| Decrease in fair value of FVTPL investments [80 - 75] | (5,000) |
| Profit before tax | 215,421 |
| Taxation | (17,113) |
| Profit after tax | 198,308 |
| **Other comprehensive income** | |
| Revaluation surplus | 80,000 |
| Tax on revaluation surplus | (10,000) |
| Increase in FV of Financial assets measured at FVOCI [57 - (50+3)] | 4,000 |
| Total comprehensive income | 272,308 |

**Girder PLC**
**Statement of Changes in Equity**
**For the year ended 31 May 2016**

| | Ord. share capital | Irredeem pref. share cap | Retained earnings | FV investment reserve | Reval. reserve | Conv. loan note reserve |
|---|---|---|---|---|---|---|
| Opening balance | 300,000 | 250,000 | 245,375 | 0 | 0 | 0 |
| Total comprehensive income | | | 198,308 | 4,000 | 70,000 | |
| Issue of loan notes | | | | | | 20,304 |
| Dividends paid Preference | | | (20,000) | | | |
| Ordinary | | | (16,000) | | | |
| Closing balance | 300,000 | 250,000 | 407,683 | 4,000 | 70,000 | 20,304 |

**Girder PLC**
**Statement of Financial Position**
**As at 31 May 2016**

| | € | € |
|---|---|---|
| Property, plant and equipment | 890,500 | |
| Investment in Steel PLC | 57,000 | |
| | | 947,500 |
| | | |
| Current assets | | |
| Inventory | 83,000 | |
| Construction contract asset | 39,500 | |
| Receivables [116,000 +90,000] | 206,000 | |
| Investments | 75,000 | |
| Bank | 25,000 | |
| | | 428,500 |
| Total assets | | 1,376,000 |
| | | |
| **Equity and liabilities** | | |
| Ordinary share capital | 300,000 | |
| Irredeemable preference share capital | 250,000 | |
| Retained earnings | 407,683 | |
| Fair value investment reserve | 4,000 | |
| Revaluation reserve | 70,000 | |
| Convertible loan notes reserve | 20,304 | |
| | | 1,051,987 |
| | | |
| **Non-current liabilities** | | |
| Convertible loan notes | 184,275 | |
| Deferred tax | 14,738 | |
| | | 199,013 |
| | | |
| **Current liabilities** | | |
| Trade payables | 90,000 | |
| Accruals (loan note interest payable) | 8,000 | |
| Tax due | 27,000 | |
| | | 125,000 |
| | | 1,376,000 |

| PPE working | Land | Buildings | Plant & Equipment | Total |
|---|---|---|---|---|
| | € | € | € | € |
| Opening balance 1/6/2015 | | | | |
| Cost | 290,000 | 470,000 | 271,000 | |
| Accumulated depreciation | 0 | (82,000) | (102,000) | |
| Net book value | 290,000 | 388,000 | 169,000 | |
| Revaluation surplus | 80,000 | | | |
| Charge for the year | | (9,400) | (27,100) | |
| Closing net book value | 370,000 | 378,600 | 141,900 | 890,500 |

# Appendix 6
# Analysis of textbook usage on similar courses within the sector

| University/institute | Course | Module | Book |
|---|---|---|---|
| **IT Tallaght** | **BBS In Accounting and finance** | **Year 3 of 4 International Financial Reporting 3 & 4** | International Financial Accounting & Reporting Ed 5 by C. Connolly |
| **IT Tallaght** | **BBS In Accounting and finance** | **Year 4 of 4 Advanced International Financial Reporting 1 & 2** | International Financial Accounting & Reporting Ed 5 by C. Connolly |
| DCU | BA in accounting and Finance | Year 3 of 3 Advanced International Financial Accounting | Financial Accounting & Reporting By Elliott & Elliott |
| DIT | BSc Accounting and finance | Year 3 of 3 Advanced Financial Reporting | Essential: Financial Reporting ACCA F7 (int) Kaplan |
| National College of Ireland | BA Honours in Accounting and Finance | Year 3 of 3 Financial Reporting | International Financial Accounting & Reporting Ed 5 by C. Connolly |
| Blanchardstown Institute of Technology | Bachelor of Business in Accounting & Finance | Year 3 of 4 Financial Accounting : Preparation & Interpretation of Accounts & Accounting Regulation & Advanced Financial Accounting modules | International Financial Accounting & Reporting Ed 5 by C. Connolly |

| | | | |
|---|---|---|---|
| Blanchardstown Institute of Technology | Bachelor of Business (Honours) in Accounting & Finance | Year 4 of 4 International Accounting Standards & Group & Company Accounting | International Financial Accounting & Reporting Ed 5 by C. Connolly + Consolidated Financial Statements by Mahony & MacLochlain |
| ICD Business School | BA (Honours) in Accounting & Finance | Year 3 of 3 Financial Reporting – International | Financial Reporting (Int) ACCA F7 Textbook BPP Learning Media |