HOW TO DESIGN ACCOUNTING VIDEO LECTURES TO RECOVER LOST TIME

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ABSTRACT

Aim/Purpose	The objective of this study is to understand how video lectures of the same length and content as the current face-to-face lectures can be designed and implemented to have a positive effect on student performance, particularly when there is a campus shutdown.
Background	In a number of South African universities protests by the students are on the increase. Often, they lead to the cancellation of academic activities such as face-to-face classes and examinations.
Methodology	A quasi-experimental design was used on two video lectures to (1) compare the performance of the students who did not watch the video lectures and those who watched the video lectures, (2) compare the performance of each student who watched the video lectures on the test topics covered in the videos and the test topics not covered in the videos, and (3) determine the factors that influence the effectiveness of the video lectures.
Contribution	This study contributes to the literature by investigating the effectiveness of video lectures in improving student performance, the factors associated to the effectiveness of such lectures, and the complexity or simplicity of the two video lectures used, and by providing possible solutions to the challenges identified in relation to designing video lectures.
Findings	In terms of student performance, there is no significant advantage arising from watching the video lectures for the students who watch the video lectures, as compared to those who did not watch the video lectures. It is also found that the student performance on the topics with video lectures is significantly associated to the students' commitment, prior performance, the quality of the content, and the design of the videos.
Recommendations for Practitioners	This study recommends how the accounting video lectures can be designed and highlights the environments in which the video lectures of the same length and content as the face-to-face lectures should not be used.

Recommendation for Researchers	Researchers should replicate this study by using short length videos of better quality and appropriate length, which incorporate current issues, games, are interactive, and so forth.
Impact on Society	This study examines the use of educational video lectures in order to minimise the impact of disruptions at university level.
Future Research	Future studies may use randomly selecting treatment and control groups. They may consider a nationwide research or using qualitative interviews in examining the use of educational video lectures.
Keywords	video lectures, organisation and design of videos, quality of the videos and content, student performance, quasi-experimental design

[NOTE: The figures and tables mentioned in the paper are at the end of the paper.]

INTRODUCTION

The disruptions by students at a number of South African universities are on the increase (Universities SA, 2017). For instance, in 2015 and 2016, students protested against increases in tuition fees (Davids & Waghid, 2016). These student protests led to the cancellation of academic activities such as face-to-face classes and examinations. At the University of Pretoria and University of Cape Town plans including online lectures were established to recover lost time because of these protests (Tshwane University of Technology [TUT], 2016). These universities used online learning to educate their students when they were prevented from attending lectures. There is significant use of educational technologies (such as online courses, mobile-phones, videos, CDs, and online games) in advanced universities around the world as learning tools, learning support, and online learning (Cruse, 2006; Hobbs, 2006; Lundberg, Castillo-Merino, & Dahmani, 2008; Woolfitt, 2015). Some of the universities in South Africa, including the University of Limpopo, are slowly joining the trend of using online educational technologies. Thus, the use of educational technologies creates an interest in knowing more about this subject.

The use of educational technologies, as shown in the online learning literature, is to supplement face-to-face classes, replace a face-to-face module with an online module, or facilitate student-centred learning or online courses (Twigg, 2003). For example, Brandsteidl, Mayerhofer, Seidl and Huemer (2012), Brown and Liedholm (2002), Kay (2012), and Zhang, Zhao, Zhou and Nunamaker (2004) investigate the replacement of face-to-face lectures with online learning or courses, video lectures, and other technologies. An important point is that each time online learning is investigated or implemented, videos are incorporated. Studies discussing video lectures argue that video lectures may be used to supplement the face-to-face lectures (Brecht, 2012; Jones & Fields, 2001; Phelps & Evans, 2006). However, there is a scarcity of research concerning how to design video lectures to achieve the required outcomes at university level (Crook & Schofield, 2017). For example, the existing studies related to designing video lectures examine the effect of the length of video lectures and video presentation formats (Crook & Schofield, 2017; Guo, Kim & Robin, 2014; Hansch et al., 2015). Further, Woolfitt (2015) demonstrates that currently there is no example of a university level, pre-recorded, longer length video lecture by a teacher.

Thus, first, the objective of this study is to understand how the video lectures of the same length and content as the face-to-face lectures can be designed and implemented to have a positive effect on student performance; suitable for use when the campuses are shut down. Hence, the video lectures for a university module that is delivered in a 90-minute period per lecture are examined in this study. The video lectures were prepared for two topics, IFRS 5 – *Non-current assets held for sale*, and IFRS 15 – *Revenue from contracts with customers*. The length of the IFRS 5 video (hereafter, Video A) was 1 hour 22 minutes, and the IFRS 15 video (hereafter, Video B) was 1 hour 29 minutes. These topics were chosen because it was the first encounter with them for the majority of the students enrolled in the sec-

ond year of accounting. Both the video and face-to-face lectures introduce theory (which is, key definitions, classification and recognition of subject matter, measurement of subject matter) and illustrative examples (which include, application of theory, preparation of calculations and journal entries, presentation of accounting numbers and disclosure notes). Second, the video lectures were created using the following designs: voice over slides, document camera linked to a projector, picture-in-picture and at times the instructor was in full screen. These designs are shown in Figure 1. The combination of these designs in one video is argued, on the one hand, to be content-heavy and to lead to richness of communication and, on the other, that it undermines the coherence or breaks continuity (Crook & Schofield, 2017).

The objective of this study that is mentioned above has the following three sub-objectives. The first is to examine whether there is a significant difference in student performance between the students who did not watch the video lectures and those who watched the video lectures. The second is to compare the performance of each student who watched the video lectures on the test topics covered in the videos and the test topics not covered in the videos. The third, this study uses a regression to establish the relationship between a few independent variables and the performance of the students who watched the video lectures.

The issues covered in this study may not be new; however, the context is important because it involves the introduction of the use of video lectures as a potential replacement of some of the second year accounting modules at the University of Limpopo, as well as long video lectures, and there is limited research that applies a quasi-experimental research design. Firstly, long video lectures have not been examined in the existing literature nor implemented in practice (Woolfitt, 2015), however the existing literature suggests short videos for teaching (Guo et al., 2014). Given the context (and the protest situation where students were unable to attend face-to-face lectures) in which the long videos are used in this study and the research objective in this study, the findings of this study are deduced from the data in order to determine support (or not) for long video lectures (D. P. Johnson, 2008). Secondly, to examine the effect of the video lectures could only be done using a quasi-experimental design with a multiple baseline because during the period of this study there was no disruption to face-to-face lectures. This meant that the video lectures were implemented and researched concurrently with the face-to-face lectures. Hence, to determine the impact of face-to-face lectures in this study, the following measure was used: if a sampled student who had watched the video lectures performed better or obtained a higher mark in the test topics covered in the video lectures to (1) a student who did not watch the video lectures, or (2) the test topics without the video lectures, then any difference would be considered to be an advantage arising from the video lectures (Leedy & Ormrod, 2014). Thus, a quasi-experimental design determines the effect of the video lectures on students' performance. Further, this design has been argued to have a place at the introductory stage of online learning teaching methods by Rhoda, Murray, Andridge, Penell and Hade (2011).

Bliuc, Goodyear and Ellis (2007) in their study noted that a portion of the literature on educational technologies is written by teachers researching their own educational practice with their own students. Similarly, this paper seeks to test the effectiveness of a video learning approach in improving students' performance, when their teacher is teaching both by means of video lectures and face-to-face lectures. Thus, this study contributes to the current literature by investigating the effectiveness of video lectures in improving student performance; and determining the factors associated with the effectiveness of such lectures. Furthermore, the study deduce between the two topics, that is, IFRS 5 – *Non-current assets held for sale*, and IFRS 15 – *Revenue from contracts with customers*, and deduced from student performance those students who watched the video lectures, the complexity or simplicity of the topics covered in the video lectures. This study also provides possible solutions to the challenges identified in designing video lectures.

The rest of the study is organised as follows: The next section discusses the literature review. This is followed by an explanation of the methods used to examine the objectives. The fourth section presents the results and the interpretation of those results. The final section concludes the study.

LITERATURE REVIEW

There is a large amount of literature relating to educational technologies and the evolution of teaching in the classroom. As early as World War II, short filmstrips were studied (Hovland, Lumsdaine & Sheffield, 1949). By the 1960s, video was considered in schools for teaching and for teacher education (Klette, 2009). Recent literature shows that video lectures are heavily used in the flipped classroom. Flipped classroom is where most of the work or content that was done in class is done at home (Herreid & Schiller, 2013; O'Flaherty & Phillips, 2015). Video lectures cannot be looked at in isolation, thus cross-references are made to relevant literature for teaching methods such as online learning, slides, television, flipped classrooms and so forth. Further, in the framework of educational technologies, video lectures are a sub-category of online learning. According to Zhang et al. (2004, p. 76), online learning is a 'technology based learning in which learning materials are delivered electronically to remote learners'. In terms of online learning, Brown and Liedholm (2002) and Zhang et al. (2004) could not indicate clearly whether online learning can replace face-to-face classroom lectures. Back to video lectures, Cardall, Krupat, and Ulrich (2008) found that students are not using video lectures as a supplement to face-to-face lectures, even though some schools may supply the technology. Based on the former, in this study, the two second year accounting modules are not replaced with online learning, rather the learning materials for these topics are also prepared in video formats. This means that the second year accounting module retains the basic structure of face-to-face lectures, and the video lectures are used as an additional out-of-class activity (Twigg, 2003). The important benefits of video lectures are that students watch them at their own pace; classroom time can be used more effectively; and the use of technology is flexible and appropriate for 21st century learning (Brecht, 2012; Fulton, 2012). However, Koumi (2014) has argued that video lectures will fail to achieve their potential if they are designed badly. Researchers such as Laaser and Toloza (2017) argue that the role of educational videos at university level is changing. So, this section highlights mainly the earlier literature about videos in teaching, the recent use of videos in education, how the current study uses video lectures, and the advantages and disadvantages of video lectures. The following sections also consider some of the studies about the effect of online learning, which include videos on student performance, hypothesis development and control variables.

RESEARCH SUB-OBJECTIVES ONE AND TWO

In regard to the above-mentioned sub-objectives of comparing (1) the performance of the students who did not watch the video lectures and those who watched the video lectures and (2) the performance of each student who watched the video lectures on the test topics covered in the videos and the test topics not covered in the videos, a number of research studies compare the effect of video lectures to face-to-face lectures on student performance. S. D. Johnson, Aragon, Shaik, and Palma-Rivas (2000) examine the differences in the final course grades of students enrolled in online versus face-to-face learning environments. These authors found that the course grades for both the online and face-to-face classes were to a large extent equally distributed. Lundberg et al. (2008) summarise some of the existing empirical knowledge regarding the pros and cons of online teaching in higher education. They suggest that if, all else being equal, students who attend online courses perform better compared to face-to-face students, then there is an argument for substituting face-to-face teaching with online teaching techniques for campus students. However, they conclude that the existing literature does not support the hypothesis that online students should perform better compared to face-to-face students (Lundberg et al., 2008). The important point about this study is not to compare the online course or teaching with face-to-face lectures, but rather to compare the video lectures with face-to-face lectures. Hattie (2009) reviews six studies which examine audio and visual methods of teaching. Hattie (2009) found that the effect of audio and visual teaching practices on student achievement is low. Based on the above studies, the current study hopes to find different results in answering research objectives one and two, regarding the effect of the video lectures on student performance.

RESEARCH SUB-OBJECTIVE THREE

Regarding to sub-objective number three, some of determining the factors that influence the effectiveness of the video lectures, the existing literature argues that various issues need to be considered in order for the video lectures to succeed. A number of these are students' attitudes towards video lectures, resources, learner support and so forth (Makarem, 2015; Tang & Chaw, 2013). However in this study, the focus is on the primary components for designing video lectures, namely, the quality of the content and video, the organisation or design of the video, and the instructor in the video. These primary components are described as follows:

- The quality of the content and video refers to the communication of objectives of the module, general information, relevance and comparability of the video lecture, language used in the video, picture quality, and student satisfaction with the quality.
- The organisation or design of the video examines the video lectures' layout, length, attractiveness and appropriateness, and student satisfaction with the organisation.
- The instructor is the individual who presents the subject matter or content in the video (McCombs & Dobrovolny, 1980). Thus, students have to evaluate the instructor's communication skills, audibility, preparedness, and instructor's evaluation of student performance and provision of feedback.

In support of the above primary components, Cruse (2006) argues that selecting video content is an essential component of integrating educational videos into the classroom. Thus, video lectures may have their advantages, however, effective pedagogy is required (Bell & Bull, 2010; Brecht, 2012). Earlier, Schacter's (1999) study reviewed five other educational technology papers. In his review, he noted that learning technologies such as video lectures are less effective and can be ineffective when the learning objectives are unclear, the environment is not conducive for learning, or capacity is lacking. Further, Ginns and Ellis (2007) applied a student-centred approach to evaluate the quality of blended learning. These researchers found that online teaching, resources, workload and student interaction are associated with the quality of students' approaches to study and learning outcomes. Thus, this study assesses the views of second year accounting students in respect of the two video lectures (i.e., Video A and Video B) in order to answer this study's objective. Further, Nikopoulou-Smyrni and Nikopoulos (2010) argue that student performance (or assessment marks) is the objective way to measure whether a video lecture had an impact on students or not. Thus, the performance of the students who watched the video lectures is used as a dependent variable in the following six hypotheses relating to the design of the video lectures. The student performance variable is similar to the variable used by Brown and Liedholm (2002) to determine whether online learning can replace face-to-face classes.

In addition to the primary components for designing video lectures in this study, the usefulness of video lectures and the assessment of the topics covered in the video lectures are considered incidental to the primary components. This means that the usefulness of video lectures and the assessments were not going to prevent the creation of video lectures. Further, the resources to access the video lectures and learner support are also regarded not to be central in creating video lectures. The above three incidental components are described as follows:

- The usefulness of the video lectures refers to the video lectures' understandability, relevance to students' learning needs, assisting a student in interactions with others, whether they are supporting face-to-face learning, and student satisfaction with the usefulness of the video lectures.
- The resources and learner support refers to accessibility, technical and tutor support.
- Benham (2010) argues that an assessment is the determination of students' capabilities in a subject. Thus, test 2 (i.e., formative assessment) and the final semester examination (i.e., summative assessment) are used in this study. The assessment consisted of the ability to remember, its relation to the content in the video lectures and student satisfaction with the assessment of the topics in the video lectures.

HYPOTHESES

Good video quality and sound or clear learning objectives may influence a student to understand the content of the video lectures, which may result in the student performing better in the parts of the test or examination relating to the topic in the video.

> H1: The performance of the students who watched the video lectures will be positively associated with the quality of the video and content lectures.

If the student perceived the video lectures to be useful or the video lectures responded to the student's learning needs or the student watched them timeously, this may result in the student performing better in parts in the test or examination relating to the topic in the video.

> H2: The performance of the students who watched the video lectures will be positively associated with the usefulness of the video lectures.

Good video layout or appropriate length of the video lectures may influence a student to understand the content of the video lectures, which may result in the student performing better in parts of the test or examination relating to the topic in the video.

> H3: The performance of the students who watched the video lectures will be positively associated with the organisation and design of the video lectures.

If the instructor in the video communicates effectively or seems well prepared in the video lectures, he or she may influence a student to understand the content of the video lectures, which may result in the student performing better in the parts of the test or examination relating to the topic in the video.

> H4: The performance of the students who watched the video lectures will be positively associated with the instructor in the video lectures.

If the resources to access the video lectures and learner support are available may influence a student to watch the video lectures, which may result in the student understanding the content of the video lectures which in turn may influence a student to perform better in the parts of the test or examination relating to the topic in the video.

> H5: The performance of the students who watched the video lectures will be positively associated with learner support and resources.

If the students perceive the items in the assessment are related to the parts in the video lecture, this may result in the student performing better in the parts of the test or examination relating to the topic in the video.

> H6: The performance of the students who watched the video lectures will be positively associated with the parts of the assessment relating to the video lectures.

Control variables

Even though online learning is slowly been introduced in South African universities, the main delivery mode of teaching in these universities is face-to-face lectures. Thus, the literature on traditional factors that are influencing students' performance is important in this study. For instance, the following studies highlight some of the positive and negative factors that are used in this study as independent variables when examining the third research objective. Principe (2005) found that internal classroom factors such as small class size and timetable had an influence on students' academic performance. However, the researcher found that the use of textbooks and technology did not influence students' academic performance (Principe, 2005). In another study, Jama, Mapesela, and Beylefeld (2008) argue that academic and social factors lead to poor academic performance, in addition to the popular belief that 'students do not study'. This view is in contrast to Ward, Wilson, and Ward

(1994), who found that the failure of students is due to lack of studying and speed of coverage of the material.

In addition, Steenkamp, Baard, and Frick (2009) compare students' perceptions with lecturers' perceptions of factors that influence their success. These researchers highlighted the students' following challenges: no background in accounting, limited English schooling, low class attendance, lack of adequate preparation at school level and poor preparation for tests and examinations. Last but not least, Sibanda, Iwu, and Benedict's (2015) study found that the top four factors associated with student success are regular studying; regular attendance of lectures; hard work, commitment and dedication; and self-motivation to be successful in the future. On the other hand, they listed the following as the top four factors associated with student failure: noisy lecture environment; not finishing or doing assignments; insufficient effort when studying; and lack of communication between student and lecturer. The relevance of the above contrasting literature to the current study is that some of its findings are used as independent variables when examining the third research objective, and are used to support the findings of this study. Further hypotheses are developed in accordance with the literature mentioned above, to determine the factors associated with the effectiveness of video lectures. More importantly, this study controls for the following variables which are mentioned in prior literature and to minimise alternative explanations:

- The prior performance of a student who watched the video lectures may influence the student to perform better in parts in the test or examination relating to the topic in the video (Gist, Goedde, & Ward, 1996). Prior performance in this study is assumed to predict the student's level of performance or whether a student is a weak or strong student.

- The positive attitude of a student towards the accounting course may influence a student to watch the video lectures, which may result in the student understanding the content of the video lectures which in turn may influence the student to perform better in those parts of the test or examination relating to the topic in the video (Makarem, 2015). A student's attitude towards the module at times reflects the student's satisfaction or dissatisfaction with the lecturer.

- A student's commitment may influence a student to watch the video lectures, which may result in the student understanding the content of the video lectures which in turn may influence the student to perform better in those parts of the test or examination relating to the topic in the video. Student commitment in this study predicts whether a student is hard-working or an active student, that is, a student who uses textbooks, attempts required homework questions and/or participates in tutorial classes (Sibanda et al., 2015).

- The age of a student who watched the video lectures may influence the student to perform better in the parts of the test or examination relating to the topic in the video (Müller, Prinsloo, & Du Plessis, 2007). Age is a characteristic of the student, which might mean that the younger or older a student is, he or she is more likely to benefit from the video lectures in terms of obtaining higher marks in topics covered by video lectures.

- The gender of a student who watched the video lectures may influence the student to perform better in the parts of the test or examination relating to the topic in the video (De Lange, Waldmann, & Wyatt, 1997). Gender is a characteristic of the student, which might mean that the male or female student is more likely to obtain higher marks in topics with video lectures.

- This study considers the fact that if a student is repeating this course it may influence the student to watch the video lectures, because the video lectures would allow the students to pause or rewind the videos and at the same time they would learn at their own pace (Brecht, 2012; Müller et al., 2007). Thus, the video lectures may result in the repeating student to understand the content of the video lectures better which in turn may influence the student to perform better in those parts of the test or examination relating to the topic in the video.

- This study considers the type of high school a student matriculated from as a factor because it may influence the student to watch or not to watch the video lectures (Steenkamp et al., 2009). For example, some schools use IT facilities as part of formal education, and others don't. If a

student has attended a rural high school which does not use IT, this might mean that the student may be interested to watch the video lectures. This may result in the student understanding the content of the video lectures which in turn may influence the student to perform better in those parts of the test or examination relating to the topic in the video.

In addition to the variables representing the components for designing video lectures or hypotheses, the above control variables are included as independent variables in the multiple regression to satisfy the third research objective. These control variables are for prior performance, student's attitude towards the module, student's commitment, student's age, student's gender, student's repeating status, and the type of a high school a student matriculated on. Thus, the relationship between the student performance and the control variables may also explain the effectiveness or ineffectiveness of the video lectures.

METHODOLOGY

POPULATION AND SAMPLE

The participants in this study are second-year accounting students, and at the beginning of the semester 357 students were enrolled in second year accounting. However, a total of 55 students were excluded in this study because their final examination marks were missing. The final sample is 302 students, and these students are grouped into various groups depending on whether they watched the videos (or not) and when they watched the videos. (See, Figure 2). Figure 2 indicates that there are 205 students who watched the videos early, 18 students who watched the videos late, and 79 students who did not watch the videos, after Experiment 1 and 2. The students who watched the video lectures are a treatment group.

RESEARCH DESIGN AND DATA COLLECTION

This study uses a quasi-experimental design with a multiple baseline. Harris et al. (2006) argue that a quasi-experimental design is used to evaluate the treatment or intervention that is not using randomisation. The justification for not using randomised sampling in this study is that it would have been unfair to the rest of the students to be prevented from benefitting from using the video lectures. In addition, the researcher would have been accused of favouritism or unethical treatment (Harris et al., 2006). Further, a multiple baseline design refers to a single treatment which starts at different times (Rhoda et al., 2011). For example, concerned students would have watched the video lectures at different times outside the classroom lecture. Thus, it is essential to have a pre-treatment survey (i.e., first survey) in order to understand the baseline for students' performance. In Figure 2, the pre-treatment survey is on the 31 January. Leedy and Ormrod (2014) argue that if there is a significant difference between the treatment group and control group (i.e., student performance between the students who did not watch the video lectures and those who watched the video lectures), after the treatment has been introduced, it might be reasonable to conclude that the difference is associated with the treatment rather than other explanations; given that this study controls for other variables such as student commitment, age and so forth, its internal validity is enhanced. However, it should be borne in mind that some researchers such as Campbell and Stanley (1963) and Cook, Campbell, and Shadish (2002), and Harris et al. (2006) outlined a number of threats to internal validity of an experimental design, such as history, maturation, selection bias, instrumentation and testing.

The two video lectures were recorded at another South African university's lecture hall, ahead of the face-to-face lectures. The instructor used the same teaching materials that he was going to use in the face-to-face lecture. Both video lectures and face-to-face lectures consisted of theory and one or two illustrative examples for each of the concerned topics. Moreover, all the lectures were taught by the same instructor using the same material. In this course, students are expected to attend face-to-face lectures, weekly tutorials, write homework questions and read the prescribed textbooks. Hence, the failure by a student to undertake the above is controlled for under student's commitment or attitude

towards the course. After editing, the video lectures were loaded on Blackboard and made available to students between three to four weeks before test 2 was written. Hence, in the four weeks before test 2 the students were told to watch the online video lectures, and those who watched them in this period are considered to have watched them early. Further, other students who watched the online video lectures after test 2 (or second survey) up to the stage when the final semester examination was written, are considered to have watched them late.

In order to examine the effect of the video lectures on student performance this study uses questionnaires and students' marks. First, questionnaires were used to collect data at three stages, relating to students' demographics, watching the videos and so forth (See, Appendices A, B, C and D): during the first face-to-face lecture of the semester (i.e., first survey), during test 2 (i.e., second survey), and after the semester examination were written and results were issued (i.e., third survey) (See, Figure 2). In test 2 (i.e., Experiment 1), the treatment group is compared to the control group (the students who did not watch the videos), and in the semester examination (i.e., Experiment 2), there are two treatment groups (the students who watched the videos early, and those who watched the videos late) that are compared to the control group (the students who did not watch the videos). The justification for conducting two experiments is that tracking the different groups over time makes it possible to determine whether the treatment (or video lecture/s) is effective or not (Harris et al., 2006; Leedy & Ormrod, 2014). Second, the students' performance was obtained from the students' answer books for test 2 and the marks obtained for the final semester examination. Thus, the student performance (or mark) is the percentage of the total marks a student acquired for correct answers to questions on topics covered by the video lectures on test 2 (See, Appendix C) or the final semester examinations (See, Appendix D). The questionnaires and students' marks used made it possible to link the components of the video lectures and the hypotheses. The questionnaire consisted of 39 items to evaluate the video lectures and was grouped into six elements: 10 items for the quality of the content and video lectures, 10 items for the usefulness of the video lectures, 5 items for the organisation of the video lectures, 5 items for the instructor in the video lectures, 5 items for the resources and learner support, and 4 items for the assessment of the topics in the video lectures. This questionnaire is a combination of the items that are used or provided by El Khoury and Mattar (2012), Makarem (2015), New River Community and Technical College (n.d.), Wright (2003) and some by the researcher. The data from the questionnaires was captured on Excel by a research assistant (who possessed a postgraduate qualification) and the researcher reviewed the data for accuracy. This test is similar to the one used by Loliwe (2016) to minimise errors. The questionnaires collected mainly information regarding students' demographics, self-reporting and the six components of designing video lectures (or the six hypotheses, that is, H1 to H6) (See, Appendices A and B). In addition, the data collected in the third survey was triangulated or compared to the self-reported information by the students in the second survey, in order to improve the accuracy and validity of collected data.

ANALYSIS

The data analysis methods used in this study are descriptive statistics, one-way ANOVA, paired t-test, multiple regression, Cronbach's alpha, r-square and correlations. Hence, in regard to the first and second research objectives, the one-way ANOVA and paired t-test are used to (1) compare the performance of the students who did not watch the video lectures and those who watched the video lectures and (2) to compare the performance of each student who watched the video lectures on the test topics covered in the videos and the test topics not covered in the videos. In addition, (3) the multivariate regression is used to determine the variables that are likely to be associated with the effectiveness or ineffectiveness of the video lectures. The dependent variable of student performance is represented by the marks a student has obtained from assessments on the topics that have videos. The following were used as independent variables: Age is based on the student age at the beginning of the year; male gender and female gender are represented by two separate dummy variables; type of high school attended represents the classification of the high school a student attended at matric level whether it is a rural, township, former model-c, boarding or private school; repeating student is

represented by a dummy variable; attitude towards the course is measured using a Likert scale of 1 to 5; prior performance for test 2 is measured by test 1 marks (prior performance for final semester examination is measured by test 1 and test 2 marks); and commitment of the student is calculated by allocating equal weights for (i) attending the related face-to-face lecture, (ii) completing all this study's questionnaires, (iii) indicating which degree a student is enrolled for and (iv) stating a career in line with the degree enrolled for. Further, the following six variables are described under the literature review section, and the principal component analysis (PCA) was used to calculate the predicted combined mean of the quality of the video (H1), the usefulness of the video (H2), the organisation or design of the video (H3), the instructor on the video (H4), learner support (H5), and the level of assessments (H6). The values were obtained from a questionnaire completed by the students responding to a 5-point Likert scale. Lastly, the validity and accuracy of the findings of this study are corroborated among various data sets (Patton, 2002), which are discussed below.

FINDINGS

RELIABILITY AND VALIDITY OF THE ANALYSIS

Cronbach's alpha was used in this study to assess the internal consistency of the variables that used the Likert scale in the questionnaire. Using STATA 12.1, alpha is estimated to be 0.87, which is high. This reflects a high level of internal consistency of the selected questions in the questionnaire.

First, the one-way ANOVA has a number of assumptions: the dependent variable must be continuous, the variance of the population must be homogeneous, two or more independent variables must be used, there should be no significant outliers, the observations in each group or between the groups must be independent, and the dependent variable must approximate a normal distribution for each category of the independent variable. In Experiment 1, the normal distributions of the student performances of most of the groups of students are not normal distributions, except for the performance of those who did not watch Video A (see Figure 3.2). In Experiment 2, the variances are unequal (see Table 1) and the normal distribution of the student performances of most of the groups of students are not normally distributed, except for the performance of those who did not watch Video B (see Figure 4.2). Second, the paired t test has four assumptions. These are: the dependent variable must be continuous, two or more independent variables must be used, there should be no significant outliers, and the distribution of the variables in the two groups that are being compared must approximate a normal distribution. In Experiment 1 and 2, the last assumption of normal distribution of the groups was violated (see Figures 5.1 to 10.2). Third, the multiple regression has a number of assumptions, and the testing of these assumptions revealed that two assumptions are violated, namely the following: variances are unequal; however when the predicted values are regress the overall probability is greater than 0.05 (P>0.05), for both experiments. These violations were investigated using a scatter diagram in Figures 11 and 12, and a Breusch Pagan test in Tables 2 and 3. One independent variable was omitted because of collinearity. Based on the above violations, the results of this study are not affected negatively. Thus, they are valid and reliable (Leedy & Ormrod, 2014).

The correlations between student performance for Experiment 1 and various independent variables are presented in Table 4. There are six variables that had significant correlations with student performance for test 2, namely, instructor on the video, learner support, assessment, both genders, repeating student, and attitude towards the course.

The correlations between student performance for Experiment 2 and various independent variables are presented in Table 5. There are five variables that had significant correlations with student performance in the final semester examination, namely, quality of the video, usefulness of the video, organisation or design of the video, age, and repeating student.

The most prevalent and significant correlations between various independent variables for Experiment 1 and 2 are quality of the video, usefulness of the video, organisation or design of the video, instructor on the video, age, type of high school attended, and prior and other performance. Because of these many correlations, the r-squares for the independent variables under examination in this study are weak. For instance, they explain 45.9% for Experiment 1 and 36.6% for Experiment 2 of the differences in students' performance. Further, on the results for objective two below, the female gender variable was omitted on the regressions because it had a collinearity effect.

FIRST SURVEY

In this survey, the researcher asked students basic questions, which include key concepts and definitions, in order to determine students' knowledge level (Leppink, Pass, Van der Vleuten, Van Gog, & Van Merriënboer, 2013),because, at this date, the intervention (i.e., distribution of video lectures), face-to-face lectures and self-studying by the students had not yet occurred. The students demonstrated limited understanding of the two topics, based on their performance on the first survey. First, in relation to IFRS 5 – *Non-current assets held for sale* students scored marks in two questions: one was a true or false question and the other was a simple awareness question relating to the topic which they had studied in previous years (i.e., presentation of the statement of financial position). Second, in relation to IFRS 15 – *Revenue from contracts with customers* students used their general knowledge to answer the questions that relate to the definitions of a customer and a contract, and the five steps of revenue recognition and measurement. Lastly, most of the technical concept-related questions were not attempted or were answered incorrectly. Hence, it could be concluded that all the groups were similar before the experiment was conducted.

Questionnaire

The mean of the elements of the video lectures in accordance with the students who watched video lectures early is calculated to be 3.4702 and 3.4706, for Experiment 1 and 2, respectively. Thus, first, the students' perception of the quality of the content and video lectures seems to suggest that it is satisfactory *(m = 3.6512/3.6538)*. Second, the students' perception of the usefulness of the video lectures seem to suggest that the video lectures are not useful *(m = 3.4211/3.4212)*. Third, the students' perception of the organisation and design of the video lectures seems to suggest that it is satisfactory *(m = 3.5330/3.5297)*. Fourth, the students' perception of the instructor in the video lectures seems to suggest that he is satisfactory *(m = 3.6240/3.62640)*. Fifth, the students' perception of the resources and learner support seem to suggest that they are dissatisfactory *(m = 3.0000/3.0000)*. Lastly, the students' perception of the assessments seems to suggest that they are unsatisfactory *(m = 3.3517/3.3495)*. At close examination, the following statements loaded low on the primary three components or hypothesis according to the questionnaires:

- The video lectures are comparable in rigour, depth and breadth to traditional and normal class lectures.
- The course promotes active learning through learner interaction with class peers and/or instructor.
- The video incorporated current issues into discussions.
- The material in the online video is organised in such a manner that learners can discern relationships between parts of the course.
- The length of the online videos is appropriate for the course content.

Further, the following statements loaded low on the secondary components or hypothesis according to the questionnaires:

- I watched the online video before the normal class, and it helped me to learn during the face-to-face class lecture.
- I interacted, shared or watched the video/s with other learners.

- The videos responded to my learning needs.
- I generally had enough time to watch and understand the things I had to learn in the online videos.
- The resources (i.e., lab, computer, airtime, network or phone) to access the online video are satisfactory.
- The online video is very accessible.
- Information for obtaining technical assistance is provided.
- Tutors were available to provide support during the online learning.
- Overall, I am satisfied with the test in relation to the parts that are on the online video/s.

EXPERIMENT 1 (SECOND SURVEY)

The 302 students were grouped into two groups, which were the students who watched the videos early, and those who did not watch the videos early. For example for Video A (a) students who did not watch the video lectures early and students who watched only Video B early were grouped in one group *(n = 205)*. Another group consisted of (b) students who watched only Video A early and those who watched both Videos A and B early *(n = 97)*. Thereafter, the one-way ANOVA was used to determine whether there was a statistically significant difference in student performance between the two groups.

One-way ANOVA

The results in relation to these videos, the p-values (i.e., $p = 0.8304$ for Video A, and $p = 0.7513$ for Video B) and the group means are not significantly different at the significance level of 0.05 (see Tables 6 and 7). Thus, there was no significant difference in student performance between the students who watched Video A and B early, and those students who did not watch these videos early.

Paired T-test

For the students who watched (1) Video A *(n = 82)*, or (2) Video B *(n = 34)*, or (3) both video lectures *(n = 89)*, their performance on topics with videos was compared to their own performance on topics not covered by videos. The mean and p-value for the three groups of students who watched the video lectures show that their performance on topics without video lectures was statistically significantly higher than their performance on material covered by the videos on test 2 (see Tables 8, 9 and 10).

Regression (or hypothesis) results for test 2

Table 11 reflects that the usefulness of the videos, the student's age, commitment and prior performance were the four variables that were statistically significant at the 0.05 level ($p = 0.029$, $p = 0.039$, $p = 0.004$ and $p = 0.042$). The usefulness of the videos, students' commitment and prior performance had positive signs, while the student age had a negative sign. The data did not support H1, H3, H4, H5, and H6.

EXPERIMENT 2 (THIRD SURVEY)

As an extension to Experiment 1 with one more group, that experiment was replicated by comparing three groups of students who sat for the final semester examination. These were the students who watched the videos early *(n = 205)*, those who watched the videos late *(n = 18)*, and those who did not watch the videos *(n = 79)*. For example, for Video A these groups consisted of (a) students who watched only Video A early and those who watched both Videos A and B early, (b) students who watched only Video A late and those who watched both Videos A and B late, and (c) students who did not watch the video lectures and those who watched only Video A. The students who watched the video lectures early are important in this study because they had the intervention and they are

regarded as a treatment group until the end of the study (Rhoda et al., 2011). The fact that they watched the video lectures cannot be reversed.

One-way ANOVA

The results in relation to these video lectures, the p-values (i.e., p = 0.3790 for Video A, and p = 0.5639 for Video B) and the group means are not significantly different at the significance level of 0.05 (see Tables 12 and 13). Thus, there was no significant difference in student performance between those students who watched Video A and B early, those students who watched Video A and B late, and those students who did not watch these videos.

Paired T-test

For the students who watched (1) Video A *(n = 89)*, or (2) Video B *(n = 73)*, or (3) both video lectures *(n = 107)*, their performance on topics with videos was compared to their own performance on topics not covered by videos. The results in relation to Video A, the p-value and the group mean, show that students' performance on topics without video lectures was statistically significantly higher than their performance on material covered by the videos for the final semester examination. However, the mean and p-value for the students who watched Video B only, and those who watched both videos show that their performance in topics covered by the videos was statistically significantly higher than their performance in material without video lectures (see Tables 14, 15 and 16). These results applied to both the students who watched the videos early and late.

Regression (or hypothesis) results for the final semester examination

Table 17 reflects that the students' commitment and prior performance were the two variables that were statistically significant at the 0.05 level (p = 0.001, and p = 0.025), and both variables had positive signs. The data did not support H1, H2, H3, H4, H5, and H6.

DISCUSSION

The research objective number one, that compares the performance of the students who did not watch the video lectures and those who watched the video lectures, was examined using the one-way ANOVA. Thus, the one-way ANOVA was used to compare the student performance of those students who watched the video lectures early, those who watched them late and those who did not watch the video lectures at all. The finding indicates that the students who watched the video lectures were not helped by the video lectures to understand their content better. These findings support Cruse (2006) and Bell and Bull's (2010) findings that video lectures' content and pedagogy do not influence the performance of the students who watched the video lectures significantly.

Furthermore, the group mean on this test indicates that the students who watched Video A late for the final semester examination performed better than the other groups. Those who watched Video B early in preparation for the final semester examination performed better than the other groups. Thus, these results show that when the students watched the two video lectures early, they found Video B easier to remember than Video A. These results may be due to the fact that, in relation to Video B, some parts of the test and examination needed the students to have a good memory, the language used to be appropriate for the students or the layout of the video to be such to facilitate learning.

Research objective number two, that compares the performance of each student who watched the video lectures on the test topics covered in the videos and the test topics not covered in the videos, was investigated using a paired t-test. The paired t-test was used on the students who watched the video lectures to determine whether the students' performance on the topics covered in the videos was the same as their performance in topics without the videos. Strange results were found for students who watched Video A. Some students' performance on topics with video lectures was significantly lower than their performance on topics without video lectures. This finding is worse than the results found by S. D. Johnson et al. (2000) and Lundberg et al. (2008). Hence, in this study, the stu-

dents' performance is not positively affected by Video A. The performance of the students who watched Video B, and those who watched both Video A and B started negatively; while in the final semester examination it was positive when compared to their performance on topics without video lectures. First, in Experiment 1, the finding relating to Video B supports Steenkamp et al. (2009) and Sibanda et al.'s (2015) findings, namely, that the lack of adequate preparation influences students' performance. Second, in contrast to prior studies by S. D. Johnson et al. (2000) and Lundberg et al. (2008), when students who watched the video lectures were used as their control sample, this study finds that the video lecture may have improved students' performance in respect of Video B. These results seem to indicate that the usefulness or effectiveness of the video lectures is linked to the subject matter and the character of the student. For example, it seems few students spend sufficient time to understand or finish watching the video lectures. Maybe, the video lectures were uninteresting and dull, or their length was too long. Hence, for a student to perform better on the selected topics he/she could have been required to put in extra effort. Thus, these results could be explained by the student's attitude towards the course, prior performance, type of high school attended, age, repeating status or commitment.

Further, this test confirms the finding above in relation to research objective number one that the students seem to find Video B easier to remember than Video A. These results may be due to the fact that, in relation to Video B, some parts of the test and examination needed the students to have a good memory, the language used to be appropriate for the students or the layout of the video be such to facilitate learning.

In relation to the research objective number three, this objective was investigated using a multiple regression. Its findings are discussed as follows:

H1: It seems the student performance of the students who watched the video lectures was not significantly associated with the quality of the video lectures because the students perceived the following as satisfactory: the communication of objectives of the module, general information, language used in the video, picture quality, and student satisfaction with the quality. However, the limitations of the quality of the content of the video lectures were their relevance and comparability. In fact, the students did not rank the rigour, depth and breadth of the video lecture higher than the face-to-face classes. Also, they did not see how video lectures incorporate current issues. In addition, they felt the video lectures were passive learning. The video lectures did not encourage them to interact, share or engage with other students.

H2: The regression results show that students' performance is significantly associated with the usefulness of video lectures during test 2 (i.e., Experiment 1). This means that the video lectures failed to promote student engagement because the following statements loaded low on usefulness of the videos: "I watched the online video before the normal class; the videos responded to my learning needs; I interacted, shared or watched the video/s with other students; and I generally had enough time to watch and understand the things I had to learn on the videos." In support of this finding, Cruse (2006) argued that video lectures must be designed to make it an easy and quick process to locate, segment and arrange information in accordance with the exact needs of a particular topic. In this study, the length and design of the video lectures seem to be associated with the ineffectiveness of the video lectures or made it hard for students to process and understand the video lectures. Thus, the primary components which seem to have influenced the usefulness of video lectures are: (1) the quality of content and video lectures, and (2) the organisation or design of the videos. However, the students were satisfied with the understandability of the video lectures.

H3: It seems the student performance of the students who watched the video lectures was not significant associated with the organisation of the video lectures. Because, the students perceived the following as satisfactory: the video lectures' attractiveness and appropriateness. However, the limitations of the organisation of the video lectures were their layout and length. In fact, the students indicated that the material in the online video is not organised in such a manner that assisted them to discern

relationships between parts of the course. In addition, the students indicated that the video lectures are too long, hence this issue might have discouraged them from completing watching or replaying them.

H4: It seems the student performance of the students who watched the video lectures was not significantly associated with the instructor in the video lectures because the students perceived the following as satisfactory: the instructor's communication skills, audibility, preparedness, and instructor's evaluation of student performance and provision of feedback.

H5: It seems the student performance of the students who watched the video lectures was not significantly associated with the availability of resources and learner support. However, the students ranked the video lectures' accessibility, technical and tutor support very low.

H6: It seems the student performance of the students who watched the video lectures was not significantly associated with the assessment of the video lectures' content because, the students perceived the following as satisfactory: the assessment examined students' ability to remember, and its relation to the content in the video lectures. However, the students ranked their satisfaction with the assessment on the topics covered in the video lectures as low.

In addition, the significant findings relating to the control variables are discussed below. First, the regression results indicate that a student's performance is significantly associated with the prior performance of the student. This means, in support of the prior performance control variable, that if a student struggled in test 1 and test 2, he or she will not perform better in the final semester examination, and the opposite is also true if a student passed previous tests. This finding is supported by Gist et al.'s (1996) finding that prior academic performance appears to have a greater relationship with current or future academic performance. Second, this test also shows that students' performance is significantly associated with students' commitment, which is represented by students' (i) attendance of the face-to-face lectures, (ii) voluntary participation in class activities, and (iii) career path that is consistent with a degree a student is enrolled for. This finding is in line with the finding of Sibanda et al. (2015) and the students' commitment variable. Third, in terms of the multiple regression, the students' age variable was a significant variable during test 2, but in the final semester examination, the students' age was immaterial. In support of the finding during test 2, Costley, Hughes and Lange (2017) argued that younger and older students engage with video lectures differently. However, this study's finding suggests that over time, the students' age, for the student who watched the video lectures, does not influence their performance. Fourth, it is possible that there are other variables that may have contributed to these findings, which this study does not control for. However, if everything is kept constant, variables related to the environmental, technological and social factors may not have significantly influenced the performance of the students who watched (or did not watch) the video lectures (Jama et al. 2010; Schacter, 1999), because, all the students who were enrolled for the concerned course were exposed to similar external factors.

CONCLUSION

The conclusion of this study is that the video lectures did not provide an advantage in terms of improving students' performance when (1) comparing the performance of the students who did not watch the video lectures and those who watched the video lectures. In addition, the results of this study show that there was no advantage in both Experiment 1 and 2 for students who watched Video A only, when (2) comparing their performance on the topics covered in the video lecture with topics not covered by this video lecture, whether they watched it early (i.e., the period before test 2) or late (i.e., the period after test 2 up to the final semester examination). Hence, this makes these results similar to those mentioned under the literature review section of this study (S. D. Johnson et al., 2000; Lundberg et al., 2008). Thus, Video A was ineffective in influencing students' performance. However, in Experiment 2, the advantage arising from the video lectures is found in the student performance of those who watched Video B only or both videos, when (2) comparing their performance on the

topics covered in the video lectures with topics not covered in the video lectures, in both those who watched these videos early or late. Video B partly failed to engage students and achieve deep learning in the concerned university. This is shown by contrasting results between Experiment 1 and Experiment 2, and the effect of this video on student performance was low (Hattie, 2009).

Further, this study found that the insignificant performance of the students who watched the video lectures is associated with the students' commitment, prior performance, the quality of the content, and the design of the video lectures. This means that the above findings are based, first, on the nature of a student - whether a student is a strong vis-à-vis weak, active, hardworking and committed student, who studies his/her textbooks, attends classes and tutorials; and second, on the design of video lectures - the poor quality and the bad design of the videos influenced their perceived usefulness to the students (Koumi, 2014). In concluding, the video lectures of the same length and content as the face-to-face lectures may not be used as the replacement for the face-to-face lectures when the campuses are shutdown. There are no grounds to do so if the video lectures' quality and design is poor, and the students who will be using the video lectures are weak in terms of their prior performance and they are not active students.

While video lectures may not have significant advantage over face-to-face lectures, the existing literature (Brecht, 2012; Fulton, 2012) and the students considered in this study suggest that video lectures have these benefits: they provide clarity, help in improving knowledge or understanding, are used for revising, and are important because students can watch them at anytime, anywhere and at their own pace. However, in line with the above results, future studies when designing video lectures for universities similar to the University of Limpopo, should consider:

- Examining the effectiveness of the video lectures with shorter length (i.e., 10 minutes or less). For instance, it seemed that the organisation or design of the videos might have made it hard for students to store what was presented to them in their long-term memory. This view is supported by Guo et al.'s (2014) finding that the student engagement time for videos 40 minutes long is approximately 20%.
- Incorporating current issues into discussions in the video lectures, including interactive elements or using games (Hamari et al., 2016) in order to promote student engagement.
- Making the videos available ahead of the normal face-to-face lecture in order to give students more time to watch, replay, analyse and understand the content in the videos.
- Creating videos that respond to students learning needs such as writing questions, quizzes, spot tests, used for practising by the students, videos with animations and music (Weil, De Silva, & Ward, 2014).
- Planning the content, creation of the videos, organising the venue and equipment required to produce the video in advance (Makarem, 2015).
- Creating a space for students to interact, share or watch the videos in groups, with friends or instructor (Khine & Lourdusamy, 2003). Further, Prinsloo and Van Rooyen (2007) argued that online learning is essential and that it needs to be supported with online teaching.

The limitation of this study is that the samples were not randomly selected. Nevertheless, some of the independent variables such as attitude towards the module, students' commitment, and prior performance controlled for the self-selection effect. Another limitation is that this study was conducted at the University of Limpopo; thus, care must be taken in generalising the results to other universities. A further limitation is that this study is not examining environmental factors and students' mental abilities, but rather investigates the association between the students' characteristics or demographics, perceptions, commitment and their performance, in terms of the design of video lectures.

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FIGURES

Instructor in full screen

Picture-in-picture

Voice over slides

Document camera linked to a projector
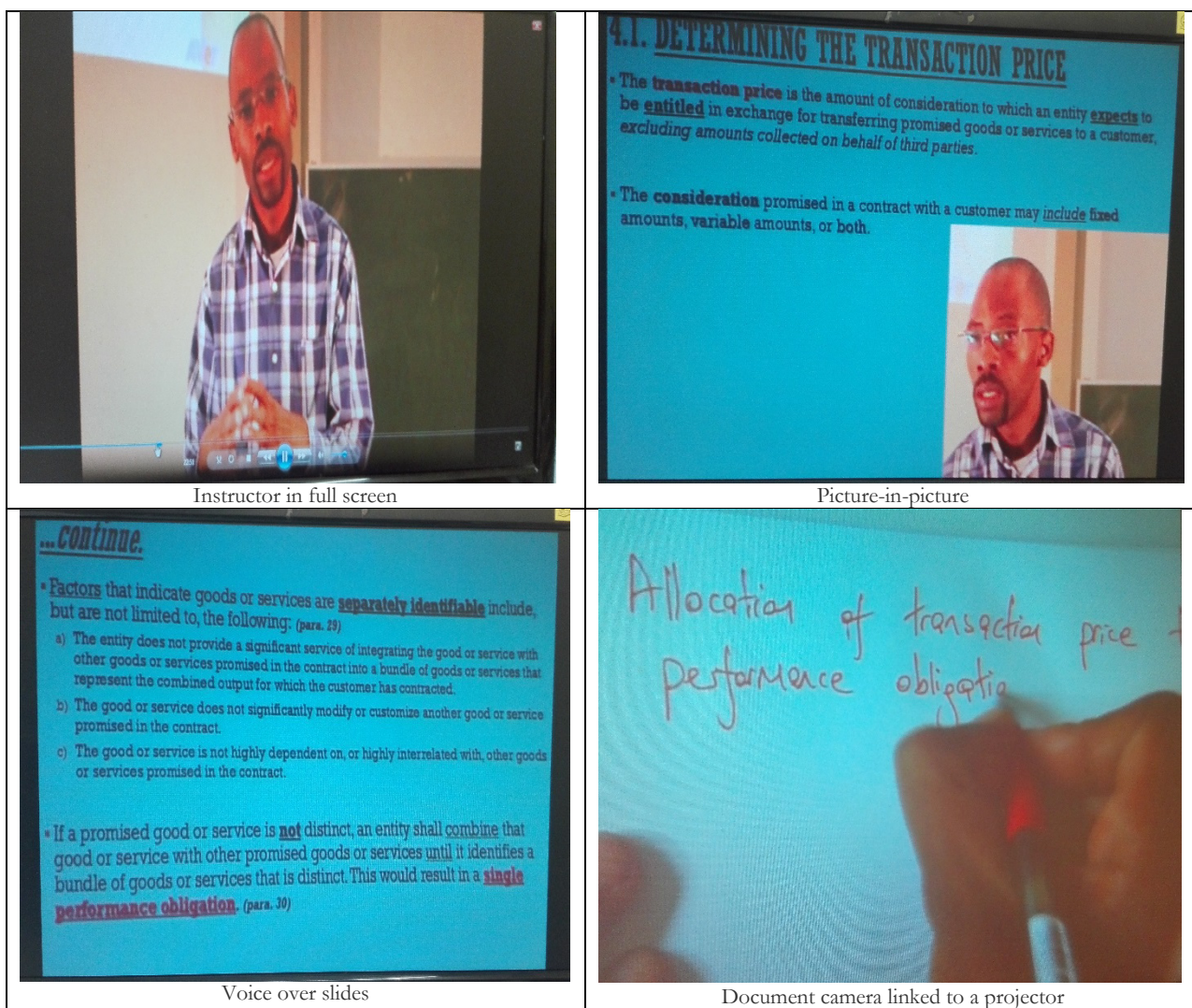
Figure 1 - Video lecture's design styles

Figure 2 — Study design and samples

31-Jan	2 months	09-Mar	4 weeks	07-Apr	2 months	07-Jun	2.5 months	31-Aug
First survey	→	Videos	→	Second survey	→	Exam written	→	Third survey

Total number of students	Early/ Experiment 1	Experiment 2
Did Not Watched	97	79
Watched - early	205	205
Watched Video A only	82	82
Watched Video B only	34	34
Watched both videos	89	89
Watched - late	—	18
Watched both videos	—	18
	302	302

Figure 2. Study design and samples

Figure 3.1 – Normality testing on the group who watched IFRS 5	**Figure 3.2** – Normality testing on the group who did not watch IFRS 5
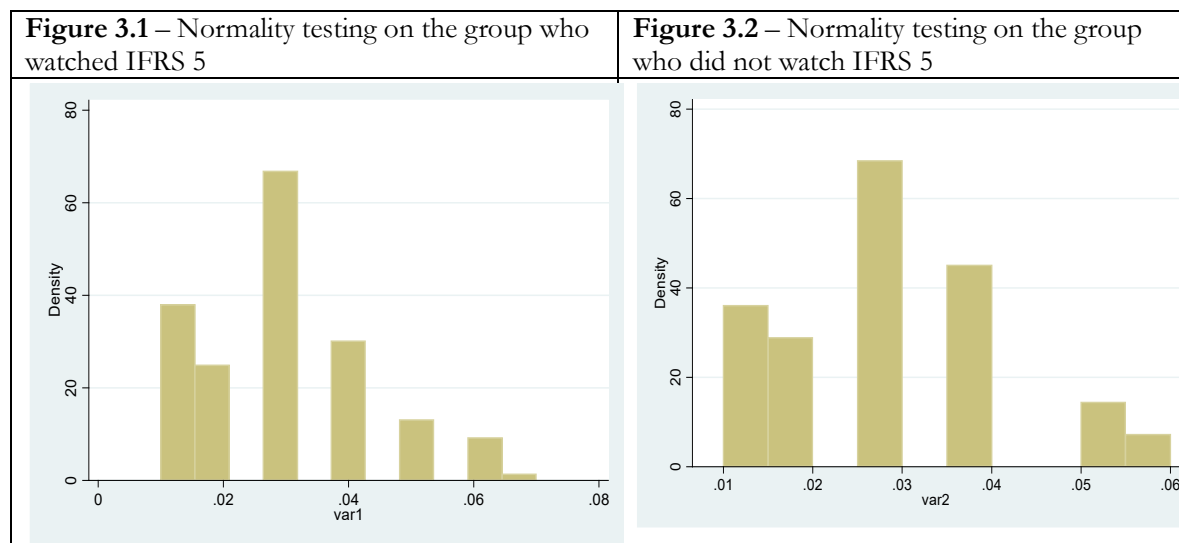
Figure 3.2. Normality testing on the group who did not watch IFRS 5 for test 2

Figure 4.1 – Normality testing on the group who watched IFRS 15 early	**Figure 4.2** – Normality testing on the group who watched IFRS 15 late	**Figure 4.3** – Normality testing on the group who did not watch IFRS 15
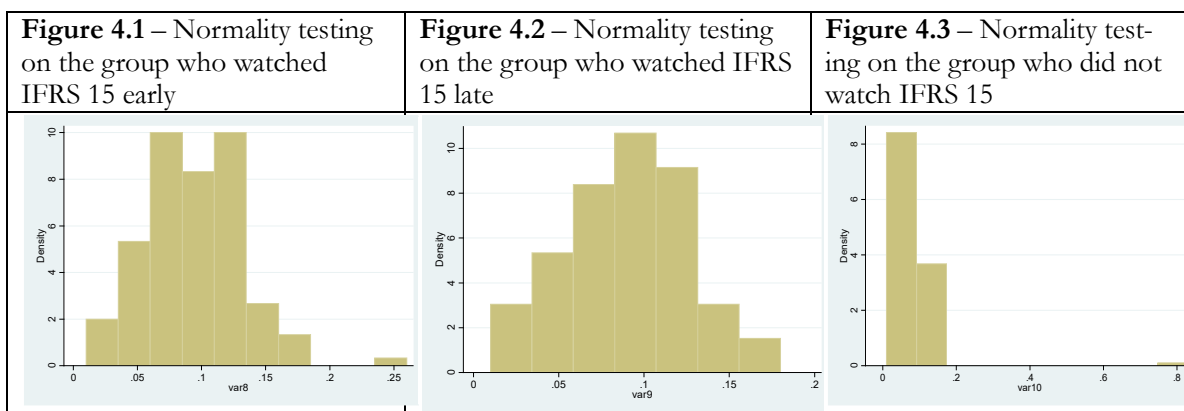
**Figure 4.2. Normality testing on the group who watched
IFRS 15 late for final semester examination**

Figure 5.1 – Histogram of normality testing on topics covered in both videos	**Figure 5.2** – Histogram of normality testing on topics not covered in both videos
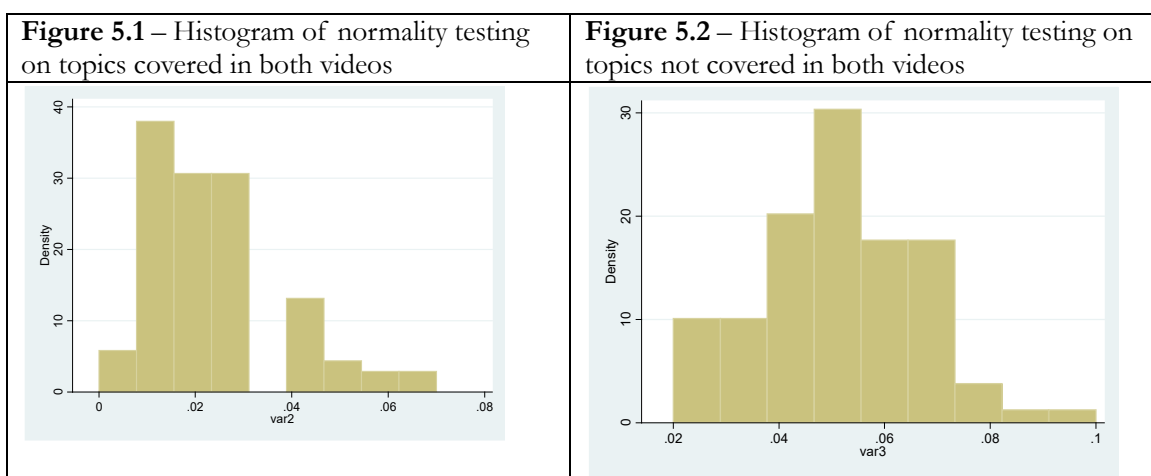
**Figure 5. Normality testing on students' performance of students who watched
both videos for test 2**

Figure 6.1 – Histogram of normality testing on topics covered in IFRS 15 video	**Figure 6.2** – Histogram of normality testing on topics not covered in IFRS 15 video
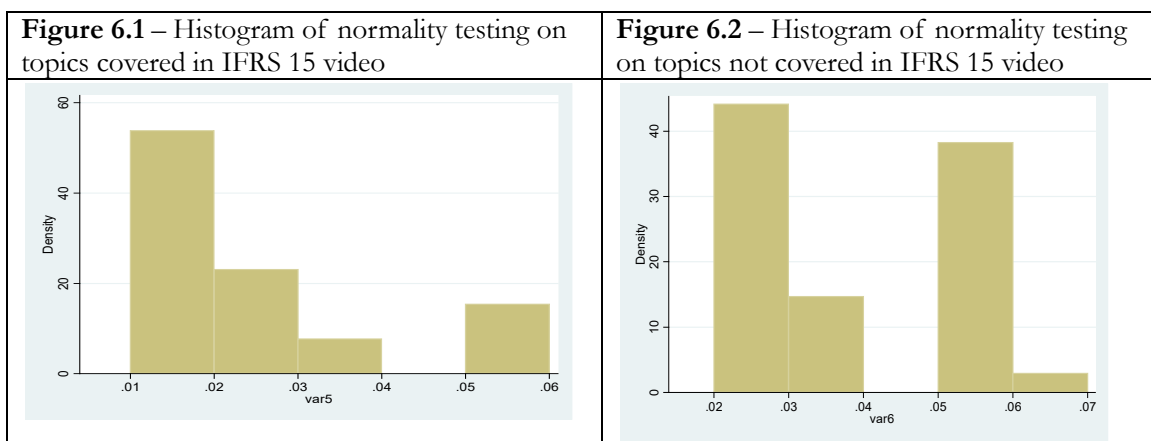
**Figure 6. Normality testing on students' performance of students who watched
only IFRS 15 video for test 2**

Figure 7.1 – Histogram of normality testing on topics covered in IFRS 5 video	**Figure 7.2** – Histogram of normality testing on topics not covered in IFRS 15 video
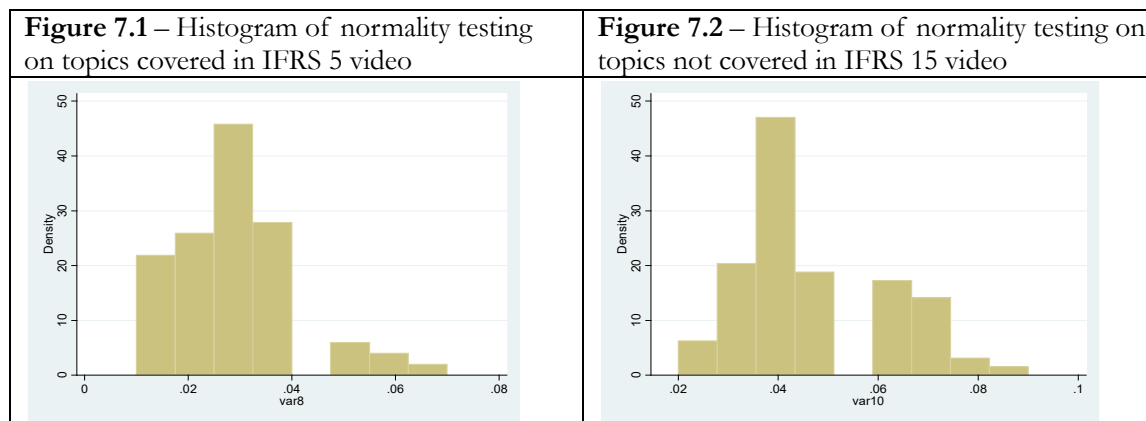
Figure 7. Normality testing on students' performance of students who watched only IFRS 5 video for test 2

Figure 8.1 – Histogram of normality testing on topics covered in both videos	**Figure 8.2** – Histogram of normality testing on topics not covered in both videos
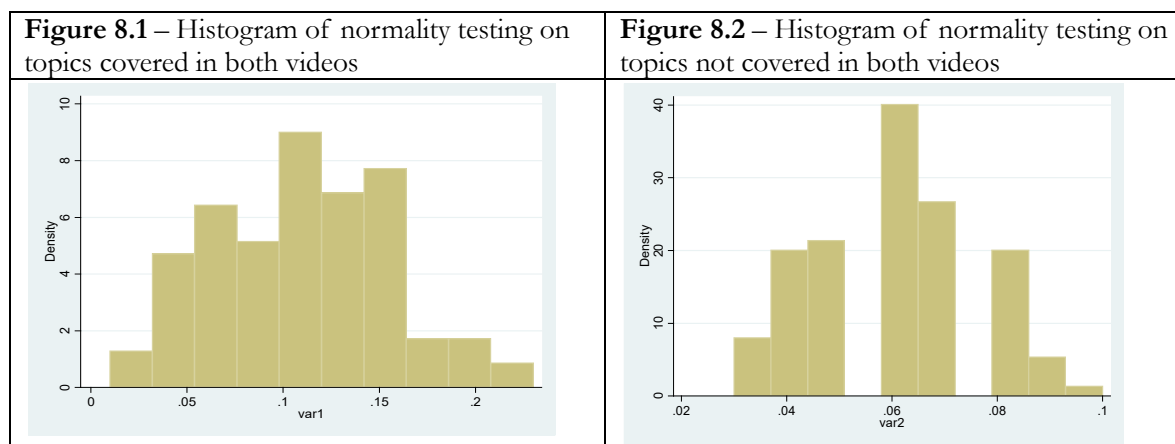
Figure 8. Normality testing on students' performance of students who watched both videos for final semester examination

Figure 9.1 – Histogram of normality testing on topics covered in IFRS 15 video	**Figure 9.2** – Histogram of normality testing on topics not covered in IFRS 15 video
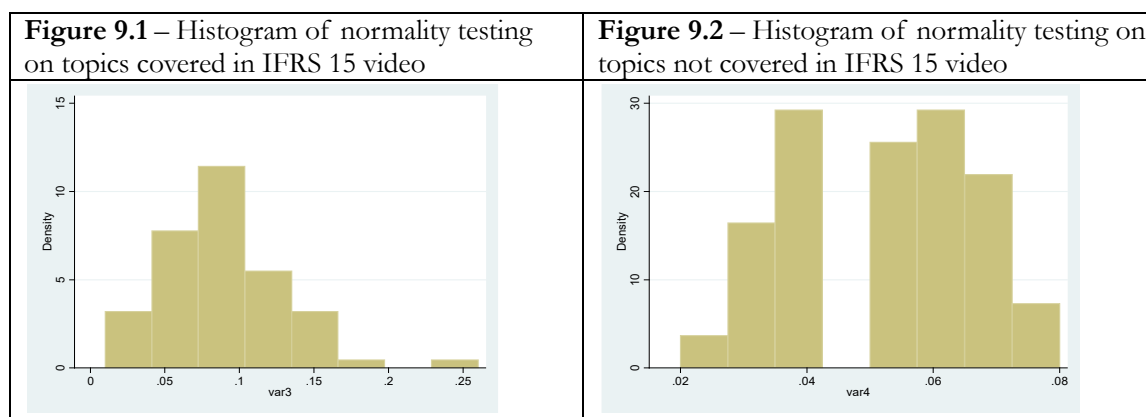
Figure 9. Normality testing on students' performance of students who watched only IFRS 15 for final semester examination

Figure 10.1 – Histogram of normality testing on topics covered in IFRS 5 video	**Figure 10.2** – Histogram of normality testing on topics not covered in IFRS 5 video
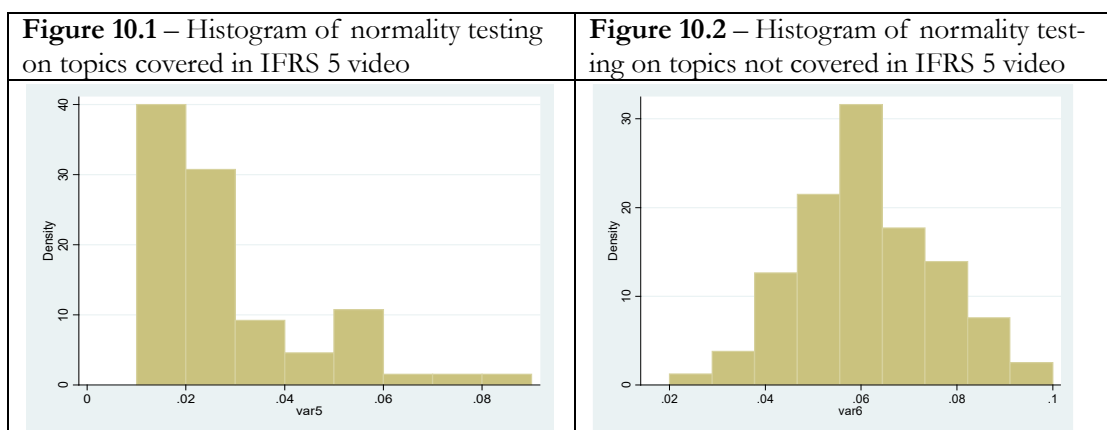
Figure 10. Normality testing on students' performance of students who watched only IFRS 5 video for final semester examination

Figure 11 – Scatter graph for heteroscedasticity for test 2
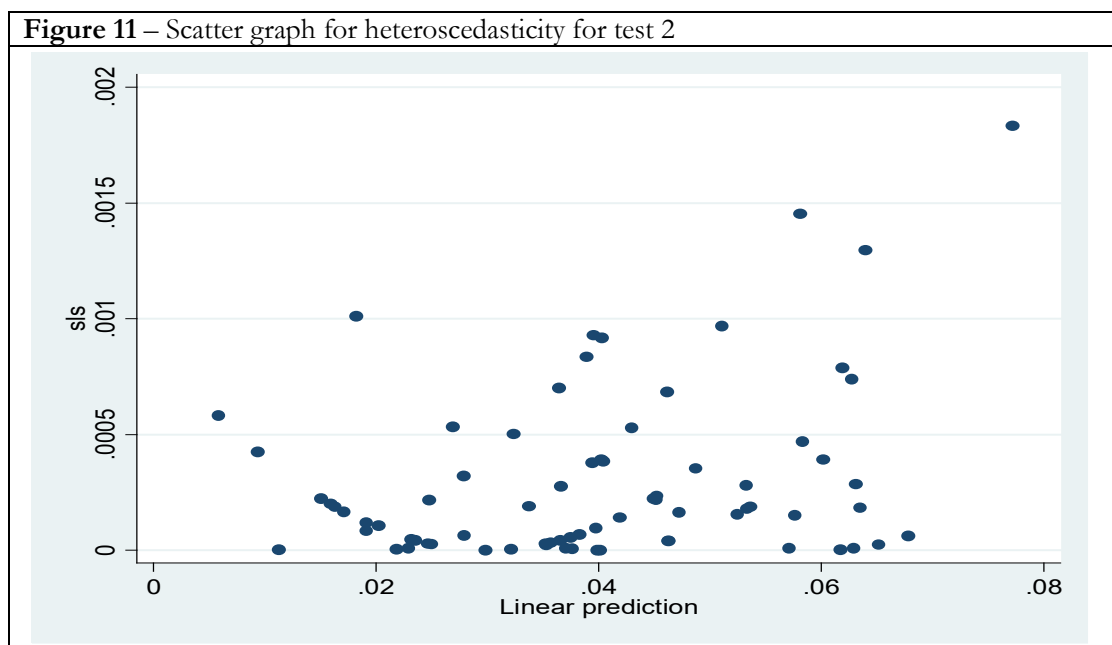
Figure 11. Scatter graph for heteroscedasticity for test 2

Figure 12 – Scatter graph for heteroscedasticity for final semester examination
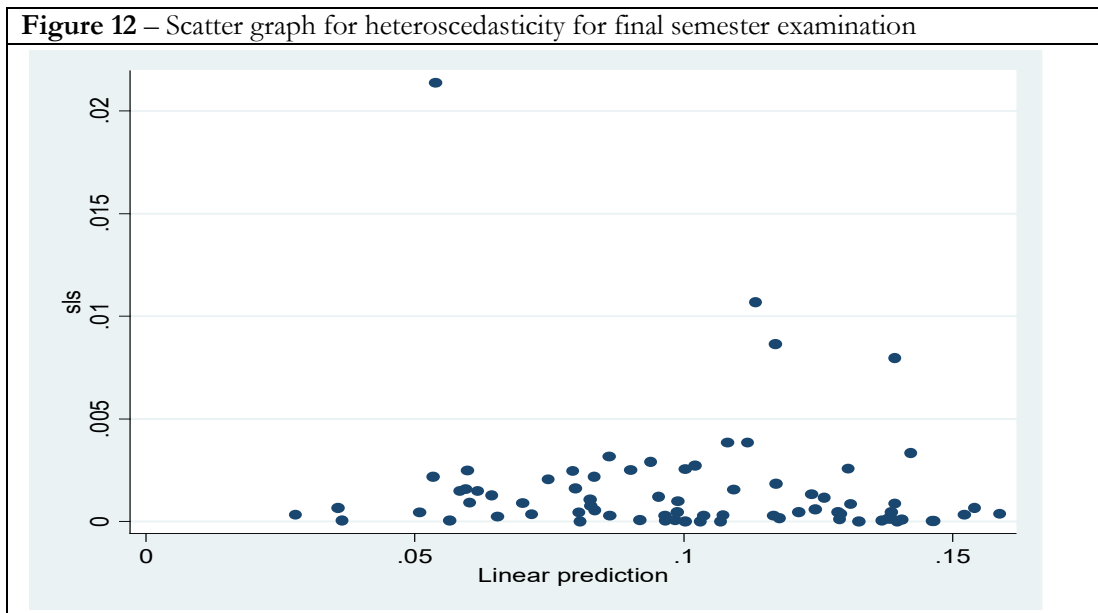
Figure 12. Scatter graph for heteroscedasticity for final semester examination

TABLES

Table 1 – Kruskal-Wallis equality-of-populations rank test		
Videoifrs15	Obs	Rank Sum
DNW	116	14612.00
Early	120	19223.50
Late	54	8359.50

chi-squared = 10.645 with 2 d.f.
probability = 0.0049

chi-squared with ties = 10.712 with 2 d.f.
probability = 0.0047

Table 2 – Breusch Pagan for test 2

Source	SS	df	MS		Number of obs = 74	
Model	2.0997	17	1.2351		Prob > F = 0.6222	
Residual	8.0573	56	1.4388		R-squared = 0.2067	
Total	0.0000	73	1.3914		Adj R-squared = -0.0341	
					Root MSE = 0.00038	
sls	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
quality	-0.0001	0.0001	-0.81	0.419	-0.0002	0.0001
usefulness	3.6500	0.0001	0.06	0.950	-0.0001	0.0001
organisation	-0.0000	0.0001	-0.51	0.610	-0.0002	0.0001
instructor	0.0001	0.0001	0.85	0.396	-0.0001	0.0002
suppport	0.0001	0.0001	1.01	0.316	-0.0001	0.0002
assessment	-0.0000	0.0001	-0.38	0.702	-0.0002	0.0001
repeating	0.0000	0.0001	0.24	0.810	-0.0002	0.0003
age	-0.0000	0.0000	-1.32	0.193	-0.0001	0.0000
genderm	0.0002	0.0001	1.51	0.136	-0.0001	0.0004
genderf	0 (omitted)					
courseperception	-0.0000	0.0000	-0.48	0.634	-0.0001	0.0001
commitment	0.0001	0.0000	2.05	0.045	2.39	0.0002
priorperformance	-2.5000	0.0003	-0.01	0.994	-0.0007	0.0006
Type of school:						
- Boarding	-0.0002	0.0003	-0.62	0.538	-0.0009	0.0005
- Model C	-0.0002	0.0003	-0.68	0.500	-0.0009	0.0005
- Private	1.3700	0.0003	0.00	0.997	-0.0006	0.0006
- Township	-0.0000	0.0003	-0.11	0.915	-0.0007	0.0006
- Rural	-2.5800	0.0003	-0.01	0.994	-0.0006	0.0006
cons	0.0009	0.0010	0.91	0.366	-0.0011	0.0028

Table 3 – Breusch Pagan for final semester examination

Source	SS	df	MS				
Model	0.0002	17	9.8308		Number of obs = 75		
Residual	0.0005	57	8.7574		Prob > F = 0.3567		
					R-squared = 0.2508		
Total	0.0007	74	9.0040		Adj R-squared = 0.0274		
					Root MSE = 0.00296		

sls	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
quality	0.0001	0.0004	0.24	0.810	-0.0008	0.0010
usefulness	-0.0000	0.0005	-0.08	0.938	-0.0010	0.0009
organisation	-0.0008	0.0005	-1.63	0.109	-0.0018	0.0002
instructor	0.0012	0.0006	2.06	0.044	0.0000	0.0024
support	0.0001	0.0005	0.19	0.853	-0.0009	0.0011
assessment	-0.0004	0.0006	-0.65	0.520	-0.0017	0.0009
repeating	0.0002	0.0011	0.15	0.878	-0.0020	0.0023
age	-0.0002	0.0003	-0.54	0.588	-0.0007	0.0004
genderm	-0.0010	0.0008	-1.25	0.215	-0.0026	0.0006
genderf			0	(omitted)		
courseperception	-0.0002	0.0003	-0.49	0.624	-0.0007	0.0004
commitment	-0.0004	0.0004	-1.09	0.280	-0.0012	0.0003
priorperformance	0.0003	0.0049	0.07	0.946	-0.0094	0.0101
Type of school:						
- Boarding	-0.0002	0.0022	-0.11	0.914	-0.0046	0.0042
- Model C	0.0033	0.0022	1.49	0.142	-0.0011	0.0077
- Private	-0.0004	0.0021	-0.20	0.842	-0.0047	0.0038
- Township	0.0014	0.0020	0.70	0.488	-0.0025	0.0053
- Rural	0.0009	0.0021	0.46	0.650	-0.0032	0.0051
cons	0.0058	0.0074	0.78	0.436	-0.0090	0.0206

Table 4 - Correlations for Experiment 1

	Marks	Quality	Useful-ness	Organi-sation	Instruc-tor	Sup-port	Assess-ment	Prior perfor-mance	Course percep-tion	Com-mit-ment	Age	Gen-derm	Gen-derf	Repeat-ing	Type of school
Marks	1.00														
Quality	0.05	1.00													
Usefulness	0.19	0.49	1.00												
Organisation	0.06	0.46	0.46	1.00											
Instructor	-0.03*	0.56	0.52	0.51	1.00										
Support	0.03*	0.45	0.42	0.24	0.40	1.00									
Assessment	-0.05*	0.42	0.53	0.22	0.33	0.49	1.00								
Prior performance	0.30	-0.03*	0.00*	-0.07	0.07	-0.09	-0.27	1.00							
Course perception	0.02*	0.19	0.16	0.18	0.19	0.17	0.07	0.07	1.00						
Commitment	0.35	0.03*	0.01*	-0.06	-0.04*	0.05	0.10	-0.06	0.16	1.00					
Age	-0.33	-0.24	-0.30	-0.34	-0.26	-0.13	-0.13	-0.27	-0.28	-0.16	1.00				
Genderm	0.04*	0.10	0.07	0.06	0.06	0.08	0.19	0.01*	-0.05	0.05	0.05	1.00			
Genderf	-0.04*	-0.10	-0.07	-0.06	-0.06	-0.08	-0.19	-0.01*	0.05	-0.05	-0.05*	-1.00	1.00		
Repeating	-0.02*	-0.30	0.15	-0.10	-0.26	-0.11	-0.18	-0.11	0.11	-0.09	0.29	-0.14	0.14	1.00	
Type of school	0.18	-0.16	0.02*	0.09	-0.25	-0.12	-0.16	-0.15	-0.25	0.04*	0.19	0.16	-0.16	0.19	1.00

Note: * p < 5%

Table 5 - Correlations for Experiment 2

	Marks	Quality	Useful-ness	Organi-sation	Instruc-tor	Sup-port	Assess-ment	Prior perfor-mance	Course percep-tion	Com-mit-ment	Age	Gen-derm	Gen-derf	Repeat-ing	Type of school
Marks	1.00														
Quality	0.05	1.00													
Usefulness	0.19	0.50	1.00												
Organisation	0.06	0.46	0.46	1.00											
Instructor	-0.03*	0.56	0.52	0.51	1.00										
Support	0.03*	0.45	0.42	0.24	0.40	1.00									
Assessment	-0.05*	0.42	0.53	0.22	0.33	0.49	1.00								
Prior performance	0.30	-0.03*	0.00*	-0.07	0.07	-0.09	-0.24	1.00							
Course perception	0.03*	0.19	0.16	0.18	0.19	0.17	0.07	0.07	1.00						
Commitment	0.35	0.03*	0.01*	-0.06	-0.04*	0.05	0.10	-0.06	0.16	1.00					
Age	-0.33	-0.24	-0.30	-0.34	-0.26	-0.13	-0.13	-0.27	-0.28	-0.16	1.00				
Genderm	0.04*	0.10	0.07	0.06	0.06	0.08	0.19	0.01*	-0.05	0.05	0.05	1.00			
Genderf	-0.04*	-0.10	-0.07	-0.06	-0.06	-0.08	-0.19	-0.01*	0.05	-0.05	-0.05*	-1.00	1.00		
Repeating	-0.02*	-0.30	0.15	-0.10	-0.26	-0.11	-0.18	-0.11	0.11	-0.09	0.29	-0.14	0.14	1.00	
Type of school	0.18	-0.16	0.02*	0.09	-0.25	-0.12	-0.16	-0.15	-0.25	0.04*	0.19	0.16	-0.16	0.19	1.00

Note: * $p < 5\%$

Table 6 – One-way ANOVA for IFRS 5

Summary of Test2

IFRS 5	Mean	Std. Dev.	Freq.
DNW	0.0297	0.0131	111
Early	0.0294	0.0141	140
Total	0.0295	0.0136	251

Analysis of Variance

Source	SS	df	MS	F	Prob > F
Between groups	8.5947	1	8.5947	0.05	0.8304
Within groups	0.0465	249	0.0002		
Total	0.0465	250	0.0002		

Bartlett's test for equal variances: chi2(1) = 0.6530   Prob>chi2 = 0.419

Table 7 – One-way ANOVA for IFRS 15

Summary of Test2

IFRS 15	Mean	Std. Dev.	Freq.
DNW	0.0277	0.0174	148
Early	0.0270	0.0170	107
Total	0.0274	0.0172	255

Analysis of Variance

Source	SS	df	MS	F	Prob > F
Between groups	0.0000	1	0.0000	0.10	0.7513
Within groups	0.0751	253	0.0003		
Total	0.0751	254	0.0003		

Bartlett's test for equal variances: chi2(1) = 0.0600   Prob>chi2 = 0.807

Table 8 – Paired t test for students who watched only IFRS 5 video

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
Video	67	0.0293	0.0016	0.0133	0.0260	0.0325
No_video	67	0.0464	0.0019	0.0154	0.0427	0.0502
diff	67	-0.0171	0.0022	0.0180	-0.0216	-0.0128

mean(diff) = mean(video - no_video)   t = -7.8094
Ho: mean(diff) = 0   degrees of freedom =   66

Ha: mean(diff) < 0   Ha: mean(diff) != 0   Ha: mean(diff) > 0
Pr(T < t) = 0.0000   Pr(|T| > |t|) = 0.0000   Pr(T > t) = 1.0000

Table 9 – Paired t test for students who watched only IFRS 15 video

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
Video	26	0.0254	0.0030	0.0153	0.0192	0.0316
No_video	26	0.0400	0.0025	0.0130	0.0348	0.0452
diff	26	-0.0146	0.0039	0.0200	-0.0227	-0.0065

mean(diff) = mean(video - no_video)   t = -3.7176
Ho: mean(diff) = 0   degrees of freedom =   25

Ha: mean(diff) < 0   Ha: mean(diff) != 0   Ha: mean(diff) > 0
Pr(T < t) = 0.0005   Pr(|T| > |t|) = 0.0010   Pr(T > t) = 0.9995

Table 10 – Paired t test for students who watched both videos

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
Both videos	88	0.0236	0.0016	0.0150	0.0205	0.0268
Both no_videos	88	0.0502	0.0018	0.0171	0.0466	0.0538
diff	88	-0.0266	0.0020	0.0192	-0.0307	-0.0225

mean(diff) = mean(video - no_video)   t = -13.0111
Ho: mean(diff) = 0   degrees of freedom =   87

Ha: mean(diff) < 0   Ha: mean(diff) != 0   Ha: mean(diff) > 0
Pr(T < t) = 0.0000   Pr(|T| > |t|) = 0.0000   Pr(T > t) = 1.0000

Table 11 – Multiple regression for Test 2

Source	SS	df	MS		
				Number of obs = 74	
				F(17, 56) = 2.79	
Model	0.0190	17	0.0011	Prob > F = 0.0020	
Residual	0.0223	56	0.0004	R-squared = 0.4590	
Total	0.0413	73	0.0006	Adj R-squared = 0.2947	
				Root MSE = .01997	

Marks	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Quality	0.002	0.003	0.67	0.503	-0.004	0.008
Usefulness	0.007	0.003	2.24	**0.029***	0.001	0.013
Organisation	0.000	0.003	0.15	0.878	-0.006	0.007
Instructor	-0.006	0.004	-1.39	0.172	-0.014	0.003
Support	0.001	0.003	0.32	0.750	-0.006	0.008
Assessment	-0.005	0.004	-1.32	0.194	-0.013	0.003
Prior performance	0.036	0.017	2.09	**0.042***	0.001	0.070
Course perception	-0.002	0.002	-1.07	0.290	-0.006	0.002
Commitment	0.008	0.003	3.02	**0.004***	0.003	0.013
Age	-0.004	0.002	-2.12	**0.039***	-0.008	-0.000
Genderm	0.006	0.005	1.05	0.296	-0.005	0.017
Genderf	0****** (omitted)					
Repeating	0.008	0.007	1.11	0.270	-0.006	0.022
Type of school:						
- Boarding	-0.002	0.017	-0.11	0.910	-0.037	0.033
- Model C	0.020	0.018	1.08	0.287	-0.017	0.056
- Private	0.030	0.017	1.80	0.077	-0.003	0.064
- Township	0.014	0.016	0.89	0.378	-0.018	0.047
- Rural	0.012	0.017	0.68	0.497	-0.022	0.046
_cons	0.048	0.051	0.94	0.349	-0.054	0.151

Note 1: * p < 5%

Note 2: ****** genderf omitted because of collinearity

Table 12 – One-way ANOVA for IFRS 5

Summary of Exam			
IFRS 5	Mean	Std. Dev.	Freq.
DNW	0.0279	0.0170	63
Early	0.0305	0.0177	123
Late	0.0320	0.0174	15
Total	0.0298	0.0174	201

Analysis of Variance					
Source	SS	df	MS	F	Prob > F
Between groups	0.0003	2	0.0002	0.57	0.5639
Within groups	0.0602	198	0.0003		
Total	0.0606	200	0.0003		

Bartlett's test for equal variances: chi2(1) = 0.1424   Prob>chi2 = 0.00

Table 13 – One-way ANOVA for IFRS 15					
Summary of Exam					
IFRS 15	Mean	Std. Dev.	Freq.		
DNW	0.0828	0.0790	116		
Early	0.0934	0.0390	120		
Late	0.0894	0.0397	54		
Total	0.0884	0.0585	290		
Analysis of Variance					
Source	SS	df	MS	F	Prob > F
Between groups	0.0067	2	0.0033	0.97	0.3790
Within groups	0.9815	287	0.0034		
Total	0.0751	289	0.0034		

Bartlett's test for equal variances: chi2(1) = 68.0279   Prob>chi2 = 0.000

Table 14 – Paired t test for students who watched only IFRS 5 video						
Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
Video	65	0.0317	0.0023	0.0183	0.0271	0.0363
No_video	65	0.0648	0.0019	0.0153	0.0610	0.0686
diff	65	-0.0331	0.0022	0.0178	-0.0375	-0.0287

mean(diff) = mean(video - no_video)   t = -15.0163
Ho: mean(diff) = 0   degrees of freedom =   64

Ha: mean(diff) < 0   Ha: mean(diff) != 0   Ha: mean(diff) > 0
Pr(T < t) = 0.0000   Pr(|T| > |t|) = 0.0000   Pr(T > t) = 1.0000

Table 15 – Paired t test for students who watched only IFRS 15 video						
Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
Video	70	0.0913	0.0049	0.0412	0.0815	0.1011
No_video	70	0.0519	0.0019	0.0154	0.0482	0.0555
diff	70	0.0394	0.0051	0.0428	0.0292	0.0496

mean(diff) = mean(video - no_video)   t = 7.7021
Ho: mean(diff) = 0   degrees of freedom =   69

Ha: mean(diff) < 0   Ha: mean(diff) != 0   Ha: mean(diff) > 0
Pr(T < t) = 1.0000   Pr(|T| > |t|) = 0.0000   Pr(T > t) = 0.0000

Table 16 – Paired t test for students who watched both videos

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
Both videos	106	0.1094	0.0045	0.0461	0.1006	0.1183
Both no_videos	106	0.0604	0.0015	0.0157	0.0574	0.0634
diff	106	0.0490	0.0042	0.0431	0.0408	0.0574

mean(diff) = mean(videos - no_videos)   t = 11.7108
Ho: mean(diff) = 0   degrees of freedom =   105

Ha: mean(diff) < 0   Ha: mean(diff) != 0   Ha: mean(diff) > 0
Pr(T < t) = 1.0000   Pr(|T| > |t|) = 0.0000   Pr(T > t) = 0.0000

Table 17 – Multiple regression for Final semester examination

				Number of obs =	77	
Source	SS	df	MS	F(17, 56)	=	2.01
Model	0.0746	17	0.0044	Prob > F	=	0.0255
Residual	0.1292	59	0.0022	R-squared	=	0.3662
Total	0.2038	76	0.0027	Adj R-squared	=	0.1836
				Root MSE	=	.04679

Marks	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Quality	0.001	0.007	0.09	0.931	-0.014	0.015
Usefulness	-0.002	0.007	-0.23	0.819	-0.016	0.013
Organisation	0.009	0.007	1.28	0.205	-0.005	0.024
Instructor	-0.010	0.010	-1.04	0.303	-0.029	0.009
Support	0.009	0.008	1.13	0.265	-0.007	0.024
Assessment	0.003	0.010	0.25	0.803	-0.018	0.023
Prior performance	0.263	0.074	3.53	**0.001**$*$	0.114	0.412
Course perception	0.003	0.004	0.62	0.537	-0.006	0.012
Commitment	0.014	0.006	2.30	**0.025**$*$	0.002	0.027
Age	-0.000	0.001	-0.24	0.814	-0.003	0.002
Genderm	-0.011	0.013	-0.87	0.386	-0.038	0.015
Genderf	0** (omitted)					
Repeating	0.011	0.017	0.69	0.493	-0.022	0.045
Type of school:						
- Boarding	-0.025	0.034	-0.74	0.461	-0.093	0.043
- Model C	-0.021	0.035	-1.61	0.545	-0.091	0.049
- Private	0.020	0.033	0.60	0.551	-0.046	0.086
- Township	0.007	0.031	0.22	0.824	-0.056	0.070
- Rural	0.000	0.033	0.00	0.997	-0.066	0.066
_cons	-0.074	0.057	-1.28	0.205	-0.189	0.041

Note 1: * p < 5%

Note 2: ** genderf omitted because of collinearity

APPENDIX A: STUDENT DEMOGRAPHICS AND SELF-REPORTING AND PRE-TREATMENT QUESTIONS IN THE SURVEYS

First survey
Name and surname:
Student number:

IFRS 5 - Non-current assets held for sale
1. List the classification criteria for non-current assets held for sale in terms of *IFRS 5*. *(8 marks)*
2. Indicate true or false, do you stop depreciating a depreciable asset after it has been classified in terms of *IFRS 5*? *(1 mark)*
3. How are the assets measured after they have been reclassified as non-current assets held for sale in terms of IFRS 5? *(1 mark)*
4. Under which section in the statement of financial position do you present non-current assets held for sales? *(1 mark)*

IFRS 15 - Revenue from contracts with customers
5. List the five steps for recognition and measurement of revenue in terms of *IFRS 15*. *(5 marks)*
6. What is the difference between contract debtor and contract liability? *(2 marks)*
7. What is the definition of the 'performance obligation'? *(1 mark)*
8. Explain what is meant by the allocation of a transaction price. *(1 mark)*
9. List the requirements for a valid contract in terms of IFRS 15. *(5 marks)*
10. Define the term 'customer' in terms of IFRS 15. *(1 mark)*

Second survey
Name and surname:
Student number:

Tick the appropriate box:
A   - I watched IFRS 5 video
B   - I watched IFRS 15 video
C   - I watched both online videos
D   - I did not watch any online video

Third survey
Name and surname:
Student number:

Tick the appropriate box:
1.1. Did you watch the IFRS 5 online video?
   -   Yes
   -   No
1.2. Why did you (or why you haven't) watch the IFRS 5 online video?

Tick the appropriate box:
2.1. Did you watch the IFRS 15 online video?
   -   Yes
   -   No
2.2. Why did you (or why you haven't) watch the IFRS 15 online video?

APPENDIX B: HYPOTHESIS RELATED QUESTIONS IN THE SURVEY

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Quality: Content & video (for: IFRS 5, IFRS 15, BOTH)

1. Instructor has provided expectations regarding online video lecture/s.
2. Module objectives and learner learning objectives are clearly identified as part of the videos.
3. Are learners provided with information that will assist them in completing the course; this includes clear directions.
4. The video lectures are comparable in rigour, depth, and breadth to traditionally normal class lectures.
5. Course promotes active learning through learner interaction with class peers and/or instructor.
6. Is the level of the language used in the videos appropriate for the intended audience?
7. The picture of the video/s are clear.
8. *The video incorporated current issues into discussions.*
9. *Overall, I was satisfied with the quality of the online video/s.*
10. *Is there anything else you would like to add?*

Useful/helpful

11. The online video/s loaded on Blackboard are extremely good at explaining things.
12. *The questions completed on the online video/s helped me to understand the face-to face class examples.*
13. I watched the online video before the normal class, and it helped me to learn during the face-to-face class lecture.
14. The online teaching materials are designed to really try to make topics interesting to learners.
15. I interacted, shared or watched the video/s with other learners.
16. The online video motivated or encouraged me to get the most out of my learning.
17. *The videos responded to my learning needs.*
18. *Online videos helped me to learn effectively.*
19. I generally had enough time to watch and understand the things I had to learn in the online videos.
20. *Is there anything else you would like to add?*

Organisation & design

21. The material in the online video is organised in such a manner that learners can discern relationships between parts of the course.
22. The layout of the online video/s facilitates learning.
23. *The online videos are attractive and appropriate for the course content and the intended audience.*
24. *The length of the online videos is appropriate for the course content.*
25. *Is there anything else you would like to add?*

Instructor

26. The instructor communicated effectively in the online video.
27. *The instructor's voice was clear in the online video.*
28. *The instructor provides timely, specific, and authentic feedback.*
29. *The instructor prepared well for teaching and learning activities in the online video.*
30. *Is there anything else you would like to add?*

Learner support & resources

31. The resources (i.e., lab, computer, airtime, network or phone) to access the online video are satisfactory.
32. The online video is very accessible.

33. Information for obtaining technical assistance is provided.
34. Tutors were available to provide support during the online learning.
35. *Is there anything else you would like to add?*

Evaluation/assessment

36. For a learner to do well in the parts of the test that are on the online video/s, all s/he really needed is a good memory.
37. The online video/s are related to the items assessed in the test.
38. Overall, I am satisfied with the test in relation to the parts that are on the online video/s.
39. *Is there anything else you would like to add?*

APPENDIX C: QUESTIONS DURING TEST 2

The students were given this scenario (adapted from – GAAP *Graded question 2016 edition*):

Islamic State Ltd owns only one item of property, the plant and equipment being a water purification plant, which it has always carried under the revaluation model, details of which are as follows:

- Cost (1 January 2014)   R500 000
- Base cost (1 January 2014)   R500 000
- Fair value/revalued amount (1 January 2015)   R800 000
- Depreciation 20% per annum on a straight-line to a nil residual value
- The tax authority allows a wear and tear deduction of 25% of (not apportioned).

Islamic State Ltd uses the net replacement method to account for changes in the fair value of the plant.

On 1 April 2016, the company decided to sell the plant. All necessary criteria to reclassify the plant as a non-current asset held for sale were met on this date. The following information was relevant on this date:

- Fair value/revalued amount   R650 000
- Costs to sell/Costs to dispose   R50 000
- There was no evidence that this plant was impaired.

At 31 December 2016 (the company's year-end) the following information was relevant:

- Fair value   R500 000
- Costs to sell/Costs to dispose   R30 000

The policy is to reverse the revaluation surplus on the eventual disposal of the related asset.

The income tax is 28%, and the capital gains tax is 80%.

After the above scenario, the students were asked to answer the following:

a) List the criteria that must be met for a sale to be considered 'highly probable', in accordance with IFRS 5 *Non-current assets held for sale*.
b) Prepare the journal entries relating to the plant for the year ended 31 December 2016. *Narrations are NOT required.*
c) Disclose the effect of the above information in the statement of financial position of Islamic State Ltd at 31 December 2016.

The students were also given this scenario

Goodman Gallery is an art gallery in the Polokwane municipality. The gallery makes little money from various sources. For example, the sponsor (Goodman Gallery) makes a private agreement with the artist to subsidise the costs of his/her solo exhibition. In exchange for the exhibition, Goodman Gallery typically takes a 40% commission on the sale of any artwork, paintings, photos, monotypes, sculpture or other work of art in relation to such an exhibition. However, if no art piece is sold. The sponsor (Goodman Gallery) may request to keep a painting or two, depending on the value of the paintings of the exhibiting artist in exchange for its patronage.

Goodman Gallery sold three paintings of the artist (Ayanda Mabulu) in September 2016 for R284 000, in terms of the above agreement. The fair value of this artist's painting is R60 000 each.

As part of the agreement, an artist typically gets one-month exhibition for free, for which s/he would have paid R20 000. Further, the estimated costs of marketing, promoting, and selling the artwork on behalf of the artist by Goodman Gallery are around R15 000 for the duration of the exhibition. Hence, Goodman Gallery works on the profit margin of 60% on cost.

Following which, the students were asked to answer the following:

a) Explain what is meant by the allocation of a transaction price, in accordance with IFRS 15 *Revenue from contracts with customers*.
b) Discuss, with reference to IFRS 15 *Revenue from contracts with customers*, the number of performance obligations in the private agreement between Goodman and the artist.
c) Prepare the journal entries relating to the three paintings of the artist that were sold in 2016. Narrations are required.

APPENDIX D: QUESTIONS DURING THE FINAL EXAMINATION

The students were given this scenario

The following is the trial balance of Capitalise Ltd, a company with a 31 December year end. The information will be used to prepare the financial statements.

CAPITALISE LTD TRIAL BALANCE AT 31 DECEMBER 2016		
	Debit R	Credit R
Cost of sales	490 000	
Administration costs	120 500	
Finance costs	12 200	
Income tax expense	70 340	
Gain on cash flow hedges		55 000
Dividends paid	65 000	
Dividends received		44 000
Distribution costs	20 500	
Salaries	107 700	
Depreciation	119 000	
Bank	100 600	
Inventory	60 000	
Debtors	30 060	
Property, plant and equipment	600 000	

	205 000	
Investments	205 000	
Retained earnings (01/01/2016)		506 900
Revenue		1 000 000
Creditors		26 000
Current portion of long-term borrowings		15 000
Long-term borrowings		104 000
Revaluation surplus (01/01/2016)		150 000
Ordinary share capital		100 000
	2 000 900	**2 000 900**

Additional information:

- The financial director has already, and correctly, classified the expenses according to function method.

- On 1 July 2014, Capitalise Ltd purchased a building for a cost price of R1 000 000. The building is depreciated over the useful life of 20 years on a straight line basis and with a zero residual value.

  On 1 May 2016, the company decided to sell the building and all necessary criteria to reclassify the building as a non-current asset held for sale were met. However, due to a lack demand for properties in this area, the fair value less costs of disposal was found to be R820 000 (fair value R890 000 and costs of disposal R70 000) and the value in use was R750 000.

  At 31 December 2016, the fair value had increased to R915 000 and the expected costs to sell remained unchanged.

- On 31 December 2015, an amount of R30 000 was transferred from revaluation surplus to retained earnings.

- The financial statements of Capitalise Ltd will be authorised for issue on 31 March 2017.

- Ignore all tax implications.

Following which, the students were asked to answer the questions below:

a) Prepare the journal entries relating to the building for the year ended 31 December 2016. Narrations are NOT required.
b) Prepare the statement of comprehensive income of Capitalise Ltd for the year ended 31 December 2016, in accordance with IFRS, using function method. Comparatives are NOT required.
c) Prepare the statement of changes in equity of Capitalise Ltd for the year ended 31 December 2016, in accordance with IFRS. Comparatives are NOT required.
d) Prepare the non-current assets held for sale disclosure note for the financial statements of Capitalise Ltd for the year ended 31 December 2016, in accordance with IFRS. Comparatives are NOT required.

The students were given this scenario

Loose Mobile Ltd is a mobile phone service provider operating in South Africa. The company sells a variety of contract options for new cellphones. For example, a customer may buy a new smartphone on a 24-month contract of R400 per month, which includes 100 minutes of airtime and 400MB of data.

Loose Mobile Ltd would have charged the following fees for each item in the contract:

Item:	Stand-alone selling price:
• Smartphone	R4 000
• Airtime	R180 per month
• Data bundles	R85 per month

Assume the financing component in this transaction is immaterial.

Following which, the students were asked to answer the questions below:

a) What is the difference between a receivable and contract asset?
b) Discuss, with reference to IFRS 15 *Revenue from contracts with customers*, whether the three items mentioned in the 24-month contract are separate performance obligations.
c) Calculate the allocation of the transaction price to each performance obligation for the above transaction, in terms of IFRS 15 *Revenue from contracts with customers*.
   Note: also indicate how the performance obligation/s will be satisfied.

BIOGRAPHY

Thando Loliwe is an accounting lecturer at the University of Limpopo. He is a PhD candidate in Finance at the University of Cape Town and holds an M.Com in Accounting Science from the University of Pretoria.