

UNIVERSITY OF WINCHESTER

Developing and Evaluating Selected Pedagogic Innovations
to Improve Learning Outcomes for Higher Education Accounting Students

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Doctor of Philosophy by Works in the Public Domain

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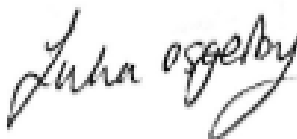
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DEDICATION

This work is dedicated to my parents, Stephen, and Joan Burgess, for their life-long commitment, encouragement, and support.

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I want to thank Professor Pru Marriott and Dr Mike Pogue for allowing me to participate in research work during the early stages of my educational career. They offered me much guidance, support, and advice. What I learned during these early years was immensely valuable.

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I would also like to thank my friends and colleagues (and co-authors) at the University of Winchester for assisting in delivering components of the research studies covered by this Submission. Finally, I also thank the broader academic community for their comments, suggestions, and constructive criticisms on the papers I have presented at conferences and as peer reviewers when submitted for publication.

My thanks go to my doctoral supervisors Professor Martin Broad and Dr Jorge Bruno for their constructive comments and support in producing this Submission which presents my works in the public domain.

I thank the British Accounting & Finance Association and the University of Winchester for their financial support in undertaking various studies over the years, which allowed me to conduct research resulting in the submitted works.

I am grateful to the University of Winchester and the Faculty of Business and Digital Technologies for their support during the research periods and for funding my PhD Submission.

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ABSTRACT

Developing and Evaluating Selected Pedagogic Innovations
to Improve Learning Outcomes for Higher Education Accounting Students

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Doctor of Philosophy by Works in the Public Domain

June 2023

This Submission presents a research programme in the period 2006-2018 which developed and evaluated practical pedagogic innovations to improve learning outcomes for undergraduate Accounting Students at the University of Winchester. The Submission discusses the ontology (*assumed nature of the reality of Accounting*), epistemology (*the origins, skills, and knowledge requirements of the Accounting Programme*) and the reasoning for the methodological approaches adopted for evaluating the innovations. Six papers published in peer-reviewed professional journals are presented. Five papers describe and evaluate learning innovations implemented in the Business School of the University of Winchester. The innovations are Blended Learning (Publications 1 & 3), the use of Twitter as a social-media application in the classroom (Publication 4), practical Programme Focussed Assessment (Publication 5), and visual methods for Personal Development Planning (Publication 6). A parallel study which examined the level of financial awareness of business students in the UK is also submitted as it contributed to the redevelopment of the undergraduate Accounting Programme (2013), which is the context of the innovation programme. The published studies are described with a background, a comparison with other practitioners, a digest of the methodology and findings, an appreciation of originality and contribution and an outline of how the studies were disseminated to the academic community. The Submission concludes with reflections about:

- a. Researching and evaluating educational Innovation from a constructivist Perspective.
- b. Exploiting ICT in educational innovations.
- c. The methodology of using students' perceptions to evaluate pedagogic innovations.

Keywords: Constructivism, ICT Exploitation, Learning Outcomes, Pedagogic Innovation

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CHAPTER 1 - INTRODUCTION TO THE SUBMISSION

Overview of this Submission for the Award of PhD by Works in the Public Domain

The award of Doctor of Philosophy by works in the public domain at the University of Winchester requires candidates to submit for examination an approved body of published work with significant authorship by the student, accompanied by a submission (*a context statement*) demonstrating connectivity in the research, originality, and contribution to the overall body of knowledge. Table 1 introduces a body of published work which explores improving undergraduate accounting students' learning outcomes through a programme of innovation in pedagogic practices and exploitation of Information, Communication and Technologies (ICT), where appropriate. As required by the Thesis Presentation Guidelines, the full bibliographic details of the works (available online) are in Appendix 1, which includes the associated abstracts, keywords, and web links.

Table 1

List of Submitted Published Works in the Public Domain 2008-2018

Publication	Chronological List of Publications (<i>Double-blind peer-reviewed international journals</i>)
1	Burgess ¹ , J. (2008). Is a blended learning approach suitable for mature part-time finance students? <i>Electronic Journal of E-Learning</i> , 6(2), 131-138.
2	Marriot, P., Pogue, M., & Osgerby, J. (2010). An analysis of students' awareness of personal finance in higher education: A Welsh, English and Northern Ireland perspective. <i>International Journal of Management Education</i> , 9(1), 43-56.
3	Osgerby, J. (2013). Students' perceptions of the introduction of a blended learning environment: an exploratory case study. <i>Accounting Education</i> , 22(1), 85-99.
4	Osgerby, J., & Rush, D. (2015). An exploratory case study examining undergraduate accounting students' perceptions of using Twitter as a learning support tool. <i>International Journal of Management Education</i> , 13(3), 337-348.
5	Osgerby, J., Jennings, P., & Bonathan, A. (2018). Do students see the benefits? An exploratory study of undergraduate accounting students' perceptions of a programme focussed assessment International. <i>International Journal of Management Education</i> , 16(2), 327-339.
6	Osgerby, J., Marriott, P., & Gee, M. (2018). Students' Perceptions of using Visual Metaphor as part of Personal Development Planning: An exploratory case study of accounting students. <i>Accounting Education</i> , 27(6), 570-589.

1. Burgess is Osgerby maiden surname.

Background to the Research Programme

The origin of the innovative research programme described in this Submission lies in the author's unpublished dissertation, a critical evaluation of the University of Winchester Accounting Curriculum (Burgess, 2007)². This dissertation examined how undergraduate accounting was presented in the Faculty and identified the potential for a refreshed academic, professional, and vocational content. In addition, the dissertation analysed the gaps between the ageing extant accounting curriculum and the expectations of academics in the accounting education literature, accounting professional bodies, and accounting practitioners in the context of the Quality Assurance Agency (QAA) Accounting Benchmark Statement (2007)³. The QAA Benchmark Statement defined cognitive skill targets and the requirement for a robust curriculum with vocational emphasis. This unpublished dissertation contributed to the Faculty Accounting Curriculum Review (2012-2013)⁴, which generated a revised multi-pathway structure as follows:

- a. A three-year undergraduate degree course schedule (UK Study Levels 3-6):
 - BA (Hons) Accounting and Finance.
 - BA (Hons) Accounting and Management.
 - BA (Hons) Accounting, Finance, and Investment.
- b. An innovative fourth-year master's degree (MAcc) (*UK Study Level 7*) with selective entry by graduating BA (Hons) students:
 - MAcc (Hons) (Accounting and Finance).
 - MAcc (Hons) (Accounting, Finance, and Investment).
 - MAcc (Hons) (Accounting and Management).

For brevity, this Submission refers to this overall package of undergraduate degree subject pathways using the term "Accounting Programme".

2. Burgess, J. C. (2007). *A critical evaluation of the context, design, and proposed development of the University of Winchester Accounting Curriculum* [Unpublished Dissertation, Postgraduate Certificate in Advanced Education Studies, Learning and Teaching in Higher Education], University of Winchester.

3. The Quality Assurance Agency (QAA) Accounting Benchmark Statement (2007) was revised in 2014, 2016 and in 2019. These minor revisions did not change the overall principles of defining the educational requirements for threshold graduate accountants in vocationally related terms.

4. The Accounting Programme revalidation exercise was led by the Dean of Faculty. The Accounting Programme Revalidation Document (2013) was designed, co-ordinated, developed and presented by J. Osgerby.

Structure of the Submission

Table 1 summarises the themes of the six published practical research projects described in this Submission. Publication 2 (2010) reports on a survey of students' Financial Awareness and is presented separately as an example multi-institution quantitative study, later contributing to the redevelopment of the Winchester undergraduate Accounting Programme (2013). Publications 1, 3, 4, 5, & 6 were the products of the growing influence of the Internet, ICT provision in the University and the exploitation of the institutional Learning Management Systems (LMS). As listed in Table 2, these five studies share coherent themes of developing innovative, practical approaches to improve learning outcomes from the perspective of Constructivist Theory while exploiting the use of available (and evolving) institutional ICT and the Internet. Figure 1 illustrates the sequential relationship between the publications and how they appear in the Submission chapters. Publications (1, 3, 4, 5, & 6) report the evaluations of innovations using quantitative, qualitative, and mixed approaches. Studies collected mainly students' perception data and reported views/opinions. The research participants were typically undergraduate students attending selected learning modules of the Accounting Programme in the Faculty of Business, Law, and Sport at the University of Winchester (now titled the Faculty of Business and Digital Technologies, June 2023).

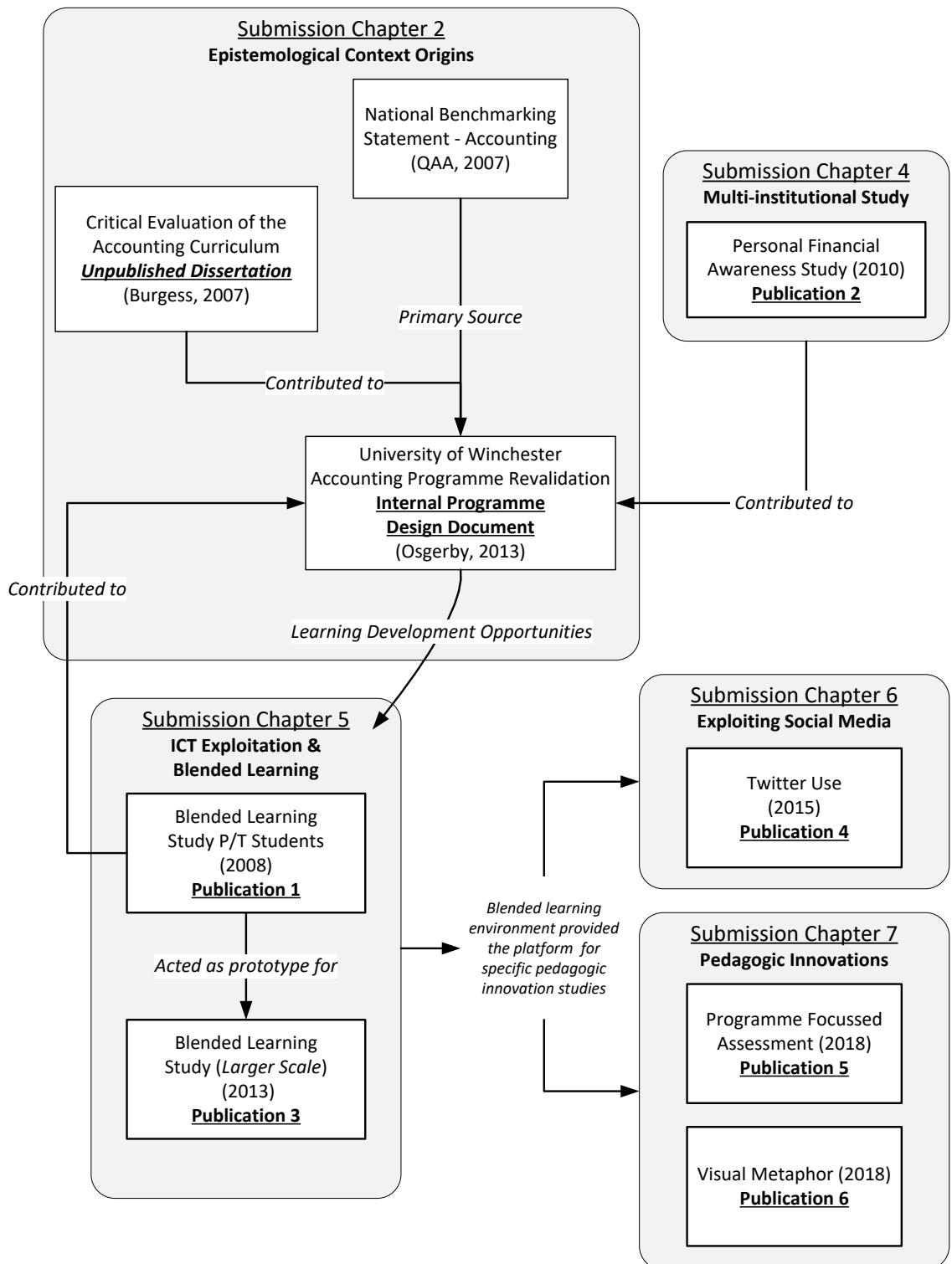
Table 2

Themes in the Submitted Published Works

Publication Order	Topical Focus	Scale	Exploits ICT	Pedagogical Perspective	Research Methodology
1 (2008)	Innovation <i>(Blended Learning)</i>	Modular Level	✓	Constructivist <i>(Learning Outcomes)</i>	Quantitative
2 (2010)	Student Awareness <i>(Financial)</i>	Multi Location	N/A	N/A	Quantitative
3 (2013)	Innovation <i>(Blended Learning)</i>	Programme Level	✓	Constructivist <i>(Learning Outcomes)</i>	Qualitative
4 (2015)	Innovation <i>(Twitter)</i>	Module Level	✓	Constructivist <i>(Learning Outcomes)</i>	Mixed Method
5 (2018)	Innovation <i>(Programme Assessment)</i>	Programme Level	✓	Constructivist <i>(Learning Outcomes)</i>	Mixed Method
6 (2018)	Innovation <i>(Visual Metaphor)</i>	Programme Level	✓	Constructivist <i>(Learning Outcomes)</i>	Mixed Method

Figure 1

The Relationship of the Publications to the Revalidated Accounting Programme (2013) and Order of Presentation of the Publications in the Submission Chapters



The redevelopment and implementation of the Accounting Programme generated a period of active pedagogic research conducted by various Faculty and Accounting Department staff members. The author's specific studies presented in this Submission were conducted in the context of the institutional strategy, the evolving vocational Accounting Programme, the need to develop students' employment prospects, and to meet the requirements of associated vocational professional bodies. The organisation of the Submission is:

- a. Chapter 2 considers ontological and epistemological positions for Accounting Education, which underpin the practical research studies and discusses the meaning of targeted improved learning outcomes.
- b. Chapter 3 discusses general methodological concepts and explains how the evaluation methodology evolved during the research period.
- c. Chapter 4 presents a quantitative study of students' financial awareness (Publication 2). The Submission presents Publication 2 (2010) first, as it is a larger-scale multi-institutional study providing an essential contribution to understanding accounting students' initial knowledge and experience and informing the redevelopment of the University of Winchester Accounting Programme (2013).
- d. Chapter 5 presents the implementation of Blended Learning in the Accounting Programme, firstly as an experimental prototype (Publication 1, 2008) and then as a scaled-up programme-level exploitation of the institutional LMS (Publication 3, 2013).
- e. Chapter 6 presents a unique, comprehensive experiment using the Twitter social media application as a learning support tool (Publication 4).
- f. Chapter 7 presents two pedagogic innovations directed at students' pedagogic, cultural, personal development and communication practices by targeting improvements in metacognitive skills, personal development, assessment, and personal reflection (Publications 5 & 6).
- g. Chapter 8 reflects on the presented research studies from the perspectives of:
 - (1) Researching and evaluating educational innovation from a Constructivist perspective.
 - (2) Exploiting ICT in educational innovations.
 - (2) The utility of capturing students' perceptions to evaluate pedagogic innovations.

Ethical Policy Considerations

For the research presented in this Submission:

- a. The Ethical Policy considerations are in Appendix 2.
- b. The referencing system for the published works and this Submission conforms to the American Psychological Association (APA) standards. The sources available in the public domain and used to support this Submission's presentation are in the Reference List.
- c. The published works contain information about living participants, but this information is functionally anonymous. Although no ethical review was required, the University of Winchester Ethics Committee received Ethics Approval forms for the records.
- d. During the research period 2006 – 2018, the author received small internal Learning and Teaching grants to support the research programme and a minor British Accounting & Finance Association (BAFA) grant specifically for the development of blended learning.

Professional Career and Research Journey

For information, the following statements are in Appendix 3.

- a. Personal Career and Experience.
- b. Overall Contribution to Practice and Research Journey.
- c. Rationale for Undertaking the Doctorate.

CHAPTER 2 – THE CONTEXT OF THE RESEARCH

Ontological Context of Accounting

A first ontological assumption about Accounting is that it has a formal well-understood essential content based on practical activities in conceptual and tangible numerical terms. In this sense, accounting has an objective, testable reality as a social phenomenon independent of its actors (Bryman, 1988). Consequently, accounts will either be correct and have value or incorrect with questionable value.

The core objective reality of accounting is the use of methods applicable at any scale for processing transactional financial information, understanding the relationship between assets and liabilities, and interpreting the value of a financial entity. Accounting provides an objective real-world legitimising device for entities to demonstrate accountability, transparency, efficiency, and sustainability. From this objective perspective, accounting education focuses on learning to apply many detailed and interconnected algorithmic processes and procedures with fidelity and accuracy. Therefore, traditional accounting educational practice delivers “the knowledge”, where students work through repetitive, perhaps even tedious, numerical exercises of increasing size and complexity until reaching an appropriate standard. From this perspective, learning outcomes are related more to the teacher/expert-led instructional quality, the sequencing of technical tasks, and the presentational order of learning exercises to maximise understanding of the technical principles and consideration of exceptions. Assessment requires students to demonstrate understanding, competence, precision, and accuracy in using accounting rules, processes, and numerical procedures. Such an approach has the characteristics of learning belonging to the behaviourist paradigm.

The impact of automation has been transformational. Financial Information systems can now be operated with minimum training and experience, and raw transactional data can be captured at source and passed directly to auditable accounts. However, even with removing the clerical effort of manually capturing and recording financial data, accounting students still must master “the knowledge”. They must understand precise and accurate cyclic processes of recording financial transactions and generate and utilise financial summaries, analyses, audits, and reports. In addition, the craft of accountancy still demands the ability to create and interpret the output from accounting systems.

A second ontological assumption about accounting is that it represents the intricacy of human commercial endeavours and offers a culturally based interpretation of social interactions in the real world. In this sense, accounting is an invented and socially constructed

human activity with a reflective interpretive reality requiring considerable intellectual endeavour. From a socially constructed perspective, accounting has a complex ontology dependent on its actors (Laughlin, 1995). In the financial world, information, presented as objective is open to human interpretation, intervention and interference, misinterpretation, misdirection, misunderstanding, misjudgement, manipulation, and misrepresentation. Objective and subjective interpretation of financial information requires judgemental processes of forecasting, performance monitoring, making strategic decisions and controlling risk. The accountant must use routine technical procedures and deploy interpretative skills and subjective judgement, which provides value in organisational, technical, sustainable, legal, ethical, and environmental realities. In this sense, the accountant is a supportive business partner sharing in the governance of organisations operating legitimately within economic realities and environmental and ethical constraints. Therefore, a well-educated and experienced accountant should have significant social and capital value in any organisation as a manager, advisor, consultant, leader and owner. As a result, accountants should expect long-term employment prospects with relatively high remuneration, especially as members of professional bodies which offer opportunities for continuous personal development and advanced certification.

A third consequent ontological assumption is about the experiential nature of accounting education, where curriculum requirements align with a constructivist learning paradigm. Constructivism, as a theory of knowledge acquisition, postulates that mental processes store knowledge and experience as internal representations in an integrated cognitive landscape. Constructivist Theory infers learning as an assimilation process that continually reframes individuals' existing mental structures through internal assessment, validation, and absorption processes, where learners consciously and unconsciously react to a dynamic world. In parallel, Social Constructivist Theory presents a broader philosophical stance about learning as a collectively structured reality deeply dependent on social activity and shared symbolic meaning. Social Constructivism focuses on the background and culture of the learner, the value of participation, experiential learning activities and learning from peers. Overall, constructivism implies that learners are not passive but are active participants in constructing socially shaped meanings and understandings based on experience. The ideas of Constructivist Theory and its practical implications for accounting education are discussed below and in later chapters.

In conclusion, the ontological position provides a foundation for the epistemological context of the accounting education curriculum and its implementation. First, accounting students must develop empirically based language, knowledge, and skills to master the

objective complex and interconnected 'means-ends chain' of technical accounting processes. Secondly, the curriculum should facilitate the development of the demanding interpersonal, intellectual, judgemental, and interpretive skills for accounting alongside acquiring a range of competencies for employment. Finally, from a constructivist perspective, accounting education should be organised systematically to develop students progressively to operate the complex aspects of accounting procedures and build the knowledge, skills, and experience to operate successfully in the global economic environment.

Epistemological Context of the Accounting Programme

The foundation of this Submission's epistemological content is the Quality Assurance Agency (QAA) for Higher Education (HE) Bench Marking Statement (BMS) (2007)⁵, which provides the authoritative framework for a vocationally orientated undergraduate Accounting Programme. The QAA BMS (2007) described a balance between the conceptual (*including theoretical*) content and applied aspects of the subject in the context of current research and academic debate. The QAA expects assessment to be appropriate for evaluating student achievement across the ability range and study level, demonstrating at least a minimum proficiency in cognitive abilities and skills when dealing with accounting situations. Assessment activities should also demonstrate an understanding of conceptual and applied aspects of accounting. In addition, students must exhibit developed generic academic and vocational employability skills as part of an integrated accounting education curriculum designed to create empowered lifelong learners in accounting and beyond. Table 3 summarises the QAA BMS and institutional epistemological expectations.

In 2013, conforming to these strategic imperatives, the undergraduate accounting programme was redeveloped and revalidated to include BA (Hons) (3 years) and MAcc (4 years) courses offered with additional combinations of finance, management, and business studies. The new accounting curriculum directed innovative, student-centred teaching and learning practices (constructivist perspectives) and exploitation of the institutional learning management system (LMS). The pedagogic focus was developing intellectual skills of analysis, synthesis, and evaluation in preparation for work and developing skills to solve real-life problems in the accounting, finance, and business environment.

5. At time of writing QAA BMS Accounting (2019) is the current version, with only minor changes from the 2007 version.

Table 3

Underlying Curriculum and Institutional Context Fields for the Research Programme

<p>Summary of the QAA Benchmarking Statement Expectations [Accounting] (2007)</p>	<p>Summary of Institutional Strategic Learning & Teaching Policy Expectations (2013)</p>
<p>Objective Content.</p> <p><i>Design, operation, control, validation, and audit of accounting systems in political, organisational, market, legal, ethical, socioeconomic, and environmental contexts.</i></p> <p>Subjective Content.</p> <p><i>Critical thought and evaluation of arguments and evidence for decision analysis, performance measurement, financial control, decision-making, accountability, managerial, regulatory, resource allocation and the control of risk.</i></p> <p><i>The ability to work in groups and teams requires participatory skills.</i></p> <p><i>ICT skills for discovering, extracting, and analysing data from multiple sources.</i></p> <p><i>Problem-solving skills for structured and unstructured problems.</i></p> <p><i>Numeracy skills, including the ability to manipulate financial data and statistical concepts.</i></p> <p><i>Communication skills include presenting quantitative and qualitative Information in multiple forms appropriate to the audience.</i></p> <p><i>Capability for independent and self-managed lifelong learning.</i></p> <p><i>Attention to vocational employability skills</i></p>	<p>Pedagogy based on guidance, not prescription.</p> <p>Learning modules are characterised by innovative, student-centred teaching and learning and the development of intellectual skills of analysis, synthesis, and evaluation.</p> <p>Challenging learning experiences for students.</p> <p>Assessment appropriate to aims and outcomes.</p> <p>Research-inspired teaching.</p> <p>Timely formative and summative feedback.</p> <p>Pedagogic depth. Integrates lectures, workshops, and tutorials with a greater variety of teaching and learning methods.</p> <p><i>(To include computer-assisted learning, interactive lectures, multimedia presentations, individual and group presentations, simulations, role-play activities, case-study analyses, visiting speakers and generally a greater emphasis on workshops for problem-solving activities.)</i></p> <p>Intellectual skills developed throughout the programmes with individual and group-based problem-solving exercises that require planning, analysis, design, and evaluation within a theoretical and practical context.</p> <p>A strong ethos of supporting students.</p> <p>Attention to vocational employability skills.</p>

In developing learning module content and assessment, reference was also made to the professional accounting syllabi and the requirements of the professional accounting bodies, providing for accreditation of prior learning. For reference, Appendix 4 summarises the revised, redesigned and extended Winchester Accounting Curriculum (Knowledge and Skills requirements) introduced in the period 2013-2016.

Context of Improving Learning Outcomes

Improved learning outcomes innovations in learning will likely focus on students' development across the cognitive domain (*comprehension, thinking, evaluation, synthesis, analysis, and problem-solving*), affective domain (*engagement, emotions/feelings, matters of the 'self', values, and behaviours*) and psychomotor domain (*skills, adaption, and responses*) (Imms, Mahat, Byers, & Murphy, 2017; Magen-Nager & Steinberger, 2017; Ozkal, Tekkaya, Cakiroglu & Sungur, 2009; Redding, Twyman & Murphy, 2013). Innovations in learning may also expose students to specifically designed learning support environments (Osbourne, 2016) and technology-driven "smart" classrooms (Palanisamy, Paavizhi & Saravanakumar, 2020) to facilitate or trigger learning innovations. As a result, students participating in a learning innovation are likely to encounter more elaborate and demanding approaches to learning. Students may also be required to participate in evaluating the innovation. The demands on students to participate in an innovation may require the development of more advanced metacognitive skills, e.g., reflective skills, critical thinking, the appropriate experience of learning methods, psychosocial skills to participate in collaboration with peers, and perhaps the motivation to participate in an innovation's evaluation (Ozkal et al., 2009).

It is common in the literature to find innovations in learning associated with a pedagogic shift from Behaviourism (*teacher-centric and control focus/ learner passivity*) to Constructivism (*teacher facilitation/ student-centric and control focus*). Innovation presents attractive opportunities for changes to pedagogy, standardisation, individualisation, student engagement, assessment, feedback, and enhanced consistency across the teaching team. It should be possible to discern how an educational innovation within the constructivist paradigm links to learning theory and then forecast learning outcomes as targets for evaluation (Herodotou et al., 2019). Innovation designers will have ideas about what they seek to achieve with innovation. However, given the implied complex multi-factor and multi-process nature of the constructivist paradigm, innovation will likely impact its design targets and create a broader profile of outcomes well beyond the stated objectives, perhaps even negatively. Redding et al. (2013) argue that educational innovation has been poorly or inconsistently defined, undermining our ability to harness and scale it for better, more efficient learning results. "Without a standard for innovation, everything—or nothing—qualifies"

(Redding et al., p. 5). The challenge is to define a set of building blocks for improved learning outcomes to identify what might be targeted or observed during innovative changes in educational practices.

For this Submission, Table 4 offers an original summary taxonomy of the likely building blocks of learning outcomes in the literature within the constructivist/student-centric paradigm context. Using this taxonomy, Table 5 illustrates the contextual relationship of the Publications in this submission and shows the learning outcomes impacted by the innovations in the research programme (*discussed further in Chapter 8*).

This Chapter identifies the requirement for accounting students to become competent in applying a bounded area of technical knowledge and operate vocationally. Upon graduation, graduates will require further technical training and on-the-job experience. Accounting graduates also have opportunities to become members of various professional bodies for more advanced training and follow specialist pathways. From an ontological perspective, the undergraduate programme must also develop a range of other intellectual and vocational capabilities, not only to enable the application of technical knowledge and skills but also to enable employability and to be prepared for more advanced accounting education. From an epistemological perspective, the requirements of the undergraduate accounting programme are well defined nationally in technical, intellectual, and vocational terms while providing some accreditation of prior learning by the professional bodies. The challenge is to deliver the Accounting Programme as designed and productively within institutional and temporal constraints. This challenge set the scene for many programme-level pedagogic initiatives, of which the following five were evaluated formally, presented at international conferences, published in peer-reviewed journals, and presented in this Submission.

- a. The development of blended learning approaches within the Accounting Programme (Chapter 5).
- b. Comprehensive use of social focussed on media practical pedagogic use of Twitter (Chapter 6).
- c. Programme Focussed Assessment development initiative (Chapter 7).
- d. Experimental use of visual metaphor for aiding student reflection (Chapter 7).

Table 4*Proposed Taxonomy of Categories of Prospective Improved Learning Outcomes in Pedagogic Innovations from a Constructivist/student-centric Perspective*

Categories of Improved Learning Outcomes (Example Sources)	Explanation
<p>Autonomy/ Learners' Responsibility and Control. (Drennan, Kennedy, & Pisarski, 2005, Honebein, 1996; Osbourne, 2016; Redding et al., 2013; Zimmerman, 2000)</p>	<p>Autonomy is the delegation of responsibility and control of learning, where the student can select the route through learning, adopt suitable learning methods and control the pace of learning. Autonomy makes students active participants and partners in the learning process. Student autonomy provides students with the "power to act", allowing students to decide the "what", "where", "when", "pace", and "divergence" along the learning path.</p>
<p>Collaboration/ Social Experience. (Beatty, 2000; Molenaar, van Boxtel, & Slegers, 2011; Honebein, 1996; Imms et al., 2017; Osbourne, 2016)</p>	<p>From a constructivist perspective, social experience is a core contribution to cognitive development. Learning is influenced meaningfully through interaction between teachers/ students, students/ experts, students/ peers, and students/ others at various levels in binary and group situations, which may lead to deeper learning than achievable through solitary learning).</p>
<p>Engagement. (Blackmore et al., 2011; Bond & Bedenlier, 2019; Drennan et al., 2005; Jaskyte, Taylor & Smariga, 2009; Redding et al., 2013; Rubie-Davies Peterson, Irving, Widdowson, & Dixon, 2010).</p>	<p>Learner engagement relates to how much time and effort students put into their studies and other related activities. Engagement is the degree of attention, curiosity, involvement (and disruptiveness), optimism, passion, and persistence a student deploys while engaged in a learning period. In addition, students' engagement has social dimensions, focusing on inter-student and learner-teacher relationships.</p>
<p>ICT (Drennan et al., 2005; Magen-Nager & Steinberger, 2017; Jaskyte et al., 2009; Redding et al., 2013; Schuitema, Peetsma & van de Veen, 2012; Palanisamy et al., 2020).</p>	<p>ICT has functions of interactivity, answering questions, checking answers, and providing feedback in real-time. In addition, social media, an integral part of many people's lives, can, if used appropriately, encourage student collaboration. Finally, ICT provides the power to enable adaptivity, where performance information about students can be collected overtly and covertly.</p>
<p>Learning Environment Development. (Osbourne, 2016; Ovbiagbonhia, Kollöffel, & Brok, 2019; Palanisamy et al., 2020).</p>	<p>Emerging literature describes developing the learning environment as essential to improving learning outcomes.</p>
<p>Metacognitive Skills Development. (Herodotou et al., 2019; Honebein, 1996; Molenaar et al., 2011; Ovbiagbonhia et al., 2019; Veenman, Van Hout-Wolters, & Afflerbach, 2006).</p>	<p>Developing students' metacognitive knowledge and skills support and improve learning outcomes. Target areas for metacognitive development include critical thinking, problem analysis and solving, social collaboration, personal reflection, and digital literacy.</p>
<p>Monitoring, Assessment, and Feedback. (Imms et al., 2017; Osbourne, 2016, Röhl & Gärtner, 2021).</p>	<p>Learning innovation offers practical opportunities to develop monitoring, assessment, and feedback improvements to support learning. In some cases, innovation may focus directly on these processes.</p>

Categories of Improved Learning Outcomes (Example Sources)	Explanation
<p>Pedagogic Changes. (Ham, Johnson, Weinstein, Plank, & Johnson, 2003; Molenaar et al., 2011; Imms et al., 2017; Jaskyte et al., 2009; Smith, 2012).</p>	<p>An exhaustive and variable list of identifiable changes to specific pedagogies and/or replacement pedagogy.</p>
<p>Personalisation. (Blackmore et al., 2011; Honebein, 1996; Imms et al., 2017; Palanwamy et al., 2020; Redding et al., 2013; Smith, 2012).</p>	<p>Personalisation is about directing learning according to individual and group differences based on background, history, prior knowledge, aspirations, motivation, ability, learning styles and inclusivity.</p>
<p>Reflective Skills Development. (Azevedo & Hadwin, 2005; Amundson, 2006; Bojer, 2018; Gauntlett, 2005; Molenaar et al., 2011; Maree, Ebersöhn, & Molepo, 2006; Timmermans, de Boer & van der Werf, 2016).</p>	<p>Reflection is a metacognitive technique to support personal analysis, work through feelings and ideas, and record and communicate personal development needs and opportunities. Reflection, grounded by personal narrative, is part of implementing students' autonomy, allowing them to be responsible for their learning by understanding themselves.</p>
<p>Self-efficacy Development. (Blackmore et al., 2011, Rubie-Davies et al., 2008, Timmermans et al., 2016).</p>	<p>Learner-centred education will be responsive to students' background, prior knowledge, learning styles and contributory personal characteristics and expect to see students develop in areas such as self-confidence/self-belief.</p>

Table 5

Learning Outcomes Impacted by the Published Studies (Publications 1, 3, 4, 5, 6 included in Table).

<i>Prospective Categories of Improved Learning Outcomes</i>											
Educational Practices (Imms et al., 2017)	Autonomy & Control	Collaboration & Social	Engagement	ICT	Metacognitive skills	Monitoring & Assessment	Learning Environment	Pedagogic Changes	Personalisation	Reflective skills Development	Self-efficacy Development
Pedagogic Practices	P1 (P3)	(P3) P4	(P1) (P3)	P1 (P3) (P4)	(P5) (P6)	P4 (P5)	(P1) (P3) (P4)	(P3) (P5)	(P6)	(P6)	P3 (P6)
Temporal Practices	(P1) (P3)		P1 (P3)	(P3)							
Structural & Organisational Practices	P1 P3		(P1) (P3)	(P4)		(P5)	P5	(P5)			
Cultural Practices	(P1) (P3)		P1 (P3) P5	(P4) P5		(P5)	P4 P5	(P4) P5	P4	P6	
Social Practices		P3 P4	P4	(P4)	P4		P4			P4	
Personal Development Practices	P6		P6		P5 (P6)	P6		(P6)	(P6)	(P6)	(P6)
Communication Practices				(P3) (P4)	(P6)	(P3) (P5)	(P4)	(P3) (P6)	P4 (P6)		
Semiotic Practices					P6			P1 P4	P6		

Table codes indicating submitted publications.

- P1 & P3 Blended Learning Innovation Publication.
- P4 Social Media (Twitter) Innovation Publication.
- P5 Programme Focussed Assessment Innovation Publication.
- P6 Visual Metaphor Innovation Publication.
- (Px)** Learning outcomes in the studies (expected improvements)
- Px Other learning outcome areas impacted.

CHAPTER 3 – RESEARCH METHODOLOGY

Introduction

This Submission presents Publication 2, a multi-institutional “fact-finding study” about the financial awareness of over 400 business students, where data is collected quantitatively using a developed questionnaire tool and knowledge test. Publications 1, 3, 4, 5, & 6 present research “case studies” that evaluate selected educational innovations of varying ambition, impact, scale, and complexity confined to a single institution. For the case studies, the methodological challenge is finding productive and valid analytical techniques to evaluate learning innovations undertaken alongside existing educational practices by relatively small populations of students.

Approaches to Research Methodology

Traditional research approaches utilise quantitative (positivist) or qualitative (interpretive) methodologies. However, no research methodology appears superior for small-scale studies (except perhaps for the researcher's expertise) and chosen analysis techniques must match the characteristics of the available data. Bashir, Syed, and Qureshi (2017) argue that the methodological techniques adopted for evaluating innovations must be “grounded” in the following:

- a. The research questions related to the ontological and epistemological assumptions covering situations, behaviours, norms, and practices under study.
- b. The types of quantitative or qualitative data available and assumed quality, validity, and reliability.

Firstly, the characteristics of the **quantitative** research paradigm include hypothesis generation, empirical testing of selected variables, statistical analysis, and interpretation of results using objective deductive reasoning. For confidence, the survey sample should be as large as possible. The underpinning assumption of quantitative methods to evaluate educational innovations is that empirical observation of the natural sciences can apply to the social sciences. That is, sufficient objective, valid data can be collected and used to test hypotheses. In this context, questionnaires are a popular psychometric tool using scaling to collect nonparametric data on a continuum of perceived values upon which measurements are placed (Taherdoost, 2019). Questionnaire scales provide predetermined ratings for closed items to control responses, e.g., itemised, comparative, or attitudinal scales. However, despite their apparent simplicity, questionnaires can have issues with item composition, scope, limited variables, inadequate and misused scales, and variable and gathering unreliable responses to questionnaire scales. In addition, the educational researcher must be wary of misapplying

statistical methods involving ordinal and interval scale data, a common source of error (Buttle, 1995). Questionnaires also assume respondents have mature, stable and accurate views of their experiences and can apply questionnaire scales consistently and reliably. Innovation evaluators must assess students' perceptions of their experiences, assuming questionnaire scales will draw out accurate representations of attitudes and opinions. Of concern is the validity of received data, where students are invited to provide a questionnaire item agreement or disagreement rating when perhaps some opinions did not exist beforehand or if there is a long period between the innovation experience and questionnaire completion. Respondents may also select a socially desirable survey response rather than provide a truthful opinion or even abstain for unclear reasons. Clifton and Carrasco (2018) conclude that data gathering based on participant perceptions is multifaceted. Researchers need to respond to its breadth, depth and potential pitfalls separating the normative approaches (*what ought to be*) from scientific approaches based on hypotheses and experiments with controlled variables. Quantitative methods applied in educational research will attempt to manage such issues with survey validity and reliability controls using narrow closed-ended, categorical or limited-choice questions related to magnitude estimation, forced choices, and Likert scale reporting.

Secondly, qualitative research assumes a complex human variation among individuals. Therefore, the qualitative researcher attempts to take a holistic stance and interacts flexibly with research participants, exploring questions as they emerge. A qualitative methodology will use data capture techniques such as focus groups, interviews, direct observation, and other reflective sources. Qualitative techniques pose questions about the 'why' and 'how' of participants' experiences to understand behavioural patterns and specific socially orientated phenomena (Bashir et al., 2017). However, qualitative techniques to record and code participants' discourses and narratives are resource intensive, and the data collected needs sophisticated analysis and interpretation by experienced researchers (Sundin & Fahy, 2008).

Thirdly, comparable data can be collected using multiple methods from either the quantitative or qualitative domains. For example, Teddlie and Tashakkori (2012) employ the term 'methodological eclecticism' and describe researchers as 'connoisseurs of methods' (p.774) who choose appropriate techniques from the quantitative or qualitative toolboxes to research a given scenario. However, the literature also controversially describes mixing quantitative and qualitative methods to collect data to support realistic methodological triangulation and the cross-verification of data from multiple sources (Bashir et al., 2017; Mukumbang, 2021). In applying mixed methods, a researcher would:

- a. Identify data collection situations requiring specific quantitative or qualitative approaches.

- b. Collect, analyse, and interpret data within the constraints of quantitative and qualitative approaches.
- c. Integrate findings according to some predetermined inferential or unifying strategy to provide conclusions of sufficient breadth, depth, and corroboration (Baskarada & Koronios, 2017; Creswell & Plano Clark, 2018; Hall, 2013).

How this controversial pragmatic unifying process should operate in practice is unclear (Denzin, 2012) when conceptual incompatibilities exist between quantitative and qualitative data. However, for this pragmatist stance, mixing methods (quantitative and qualitative) is proposed in the literature as a productive connective methodological approach to collecting data in the “real world” rather than limiting the researcher to operate within a single methodological paradigm (Feilzer, 2010; Maxwell, 2011). Mixing quantitative and qualitative methods creates opportunities to find “truthful” perspectives when evaluating broad, multi-level, unpredictable and multidimensional sets of data (Mukumbang, 2021), especially where the researcher cannot control the variables under investigation. A pragmatic mixed methods research paradigm is grounded in the researcher’s ability to collect various data types and analyse this data by applying common sense, judgement, and experience. In summary, Kelly and Cordeiro (2020) condense the general operating principles of a pragmatic mixed methods approach into three logical steps:

- a. Emphasise actionable knowledge (*focus on human impacts, real-world problems, respondent experience and repeatability*).
- b. Recognise the interconnectedness between study participants’ experience, knowledge, and observable behaviours.
- c. Enquire about innovation in learning based on participants’ perceptions of their experiences, treating participants as information-rich sources, and exploring their macro and micro perspectives.

There are also many other overlooked sources of information, such as other students not participating in an innovation (*acknowledging the impact of peer relationships in the learning process*), curriculum designers, other teachers, support staff, institutional staff, other institutions, professional bodies, and perhaps even parents (Smith, 2012).

When gathering student data about learning innovations, there may be conflicts with students’ previous and current learning experiences and anxieties about personal capabilities. Innovation may expose students to unexpected, perhaps even unwelcome, pre-experience orientation, personal preparation requirements and increased workload. Students may react unpredictably and emotionally to an innovation’s demands for increased engagement,

unfamiliar tutor attention and changes in assessment methods. In addition, evaluating an innovation may require students to be involved in time-consuming record-keeping and applying underdeveloped reflective skills. The methodological challenge is to design, build and resource an evaluation process which adopts a sensitive, pragmatic interpretive approach to assessing students' emotions, motivations, social interrelationships, prior experience, capabilities, self-beliefs, personal issues, feelings and even misunderstandings. In this complex research environment of evaluating learning innovations, using mixed methods independently, sequentially, concurrently, or iteratively, subject to careful planning and awareness of data assumptions and limitations, provides opportunities to pursue associated similar and dissimilar data collected to provide a 'rich picture' of phenomena under investigation (Maxwell, 2011).

Context of the Studies Presented in this Submission

As introduced in Chapter 1, Publication 2 (2010) reports on a survey of students' Financial Awareness and is presented separately as an example multi-institutional quantitative, factual data collection study.

Publications 1, 3, 4, 5, & 6 cover the consistent theme of developing and evaluating specific pedagogic innovations initiated around the revised Accounting Programme 2013 and subsequent years. Table 6 shows the broad contexture relationship of the five specific learning innovation case studies designed to improve learning outcomes in a vocationally orientated accounting curriculum.

Innovative changes in educational practices generally have a critical trial and evaluation component which assesses viability and validity before adoption as standard methods. The five learning innovation studies vary in scope, size, aims and ambition, resourcing, expected impacts, sample size and period of implementation. Overall, the implicit general research questions for Publications 1, 3, 4, 5, & 6 are:

- a. Do the specific learning innovations deliver sustainable pedagogic benefits in actionable and practical terms? (Kelly & Cordeiro, 2020; Ovbiagbonhia et al., 2019; Redding et al., 2013) (see Chapter 2, Table 5 for listed target learning outcomes).
- b. Can the innovations be scaled up and exported internally and externally? (Salmon, 2014; Smith, 2012).
- c. What are the lessons for practice?

Table 6

Relationship of the Accounting Curriculum to the Pedagogic Innovations Covered by the Summited Publications (Publication 2 is not an innovation study)

Summary of Accounting Curriculum Components	Publications				
	1	3	4	5	6
<u>Knowledge & Understanding</u>					
Design, operate, control, validate and audit accounting systems.	●	●		●	
Understanding organisational, market, legal, ethical, socio-economic, and environmental factors.	●	●		●	
<u>Cognitive abilities and skills/attributes</u>					
Research data, critical analysis, and evaluation.	●	●		●	
Problem-solving skills.	●	●		●	
Self-management of Learning.	●	●			
Numeracy skills.	●	●		●	
Communication & ICT skills & application.	●	●	●	●	●
Participatory/group work skills.	●	●	●	●	●
<u>Learning for the Workplace</u>					
Working with others.	●	●	●		●
Application of ICT.	●	●	●		●
Self-awareness and self-reflection.					●

Notes.

Publication 1 (2008) Topic: Blended Learning (Part-time Students).

Publication 3 (2013) Topic: Blended Learning (Full-time Students).

Publication 4 (2015) Topic: Educational Use of Twitter.

Publication 5 (2018) Topic: Programme Focussed Assessment.

Publication 6 (2018) Topic: Use of Visual Metaphor.

Summary of the Evolving Methodological Approaches Adopted in the Research Studies

Quantitative Studies

The research work for Publication 1 (Blended Learning, published in 2010) predates the work for Publication 2 (Financial Awareness, published in 2008). Although both studies have a quantitative methodology, they are markedly different in size and scope.

Publication 1 is based on a significant amount of learning materials development, development of a presentation model and exploitation of ICT to address issues of a neglected group of part-time students (10 -12 per year). The study was a critical step forward for the Accounting Programme because it experimented with changes to learning strategy and

focussed on a neglected group of part-time students. However, student group size and timetabling restrictions constrained the evaluation, and only a short questionnaire was used which is included for information as a research artefact (see Appendix 5). While the questionnaire was core to the evaluation, later informal discussions with students indicated the questionnaire could have contained more items and the capture of students' broader opinions might have been explored.

Publication 2, a relatively large-scale quantitative survey, exploited the existing "Student Awareness of Personal Finance in Higher Education" (SAPHE⁶) instrument offered to over 400 students attending three business schools in England, Wales, and Northern Ireland. Three hundred sixty-five students returned valid questionnaires, resulting in a reliable factual baseline of quantitative census data profiling business students' financial awareness.

Qualitative Study

Publication 3 describes the scaling up of the blended learning approach for 128 second year, third year and post-graduate accounting students. This case study adopted a qualitative approach using focus groups to elicit students' views about Blended Learning across a broad agenda, e.g., students' expectations, personal competence, engagement, and collaboration. Three focus groups were established with 29 voluntary student participants. The products of the discussions were recorded verbatim, and students' comments were analysed to generate a set of consistent themes. An example set of typed contemporaneous notes taken by the author during a first focus group meeting is included for information as a research artefact in Appendix 6.

This methodology provided a broad student commentary. However, this open-ended grounded approach was time-consuming, providing many lines of enquiry requiring considerable analysis to identify consistent themes. As a result, there was potential for misinterpretation, and the material needed several analysis phases followed by confirmatory follow-up focus group meetings. Although the flexible focus group method provided a rich source of information, it was constrained by student availability and finding time to conduct the focus group meetings. A more directed methodological approach was required, and this was initiated for the case study leading to Publication 4 using a "mixed" methods approach.

6. Marriott, P. (2009) describes the SAPHE Instrument developed at the University of Glamorgan (2006-2008) resulting in online version.

Mixed Methods Studies

Publication 4 describes an 11-week pedagogic social media trial (Twitter) by 37 volunteer students based on a model of proposed Twitter functions identified in the literature. Although Publication 2 reports an “experimental” trial, a student control group was not permitted for practical and ethical reasons. Due to the small sample of students involved, a mixed methods approach utilised a questionnaire and focus group meetings. The questionnaire was based on perception measures (Lickert style scale), allowing for frequency counts and cross-tabulations (see Appendix 7 as a research artefact). The questionnaire data provided the agenda (see Appendix 8 as a research artifact) for two focus group discussions attended by a subset of 12 students. The evaluation process was also constrained by student availability and timetabling. However, using a detailed questionnaire to provide the basis for a directed agenda for focus group meetings to explore the complex issues of student engagement, group work and collaboration and identifying lessons for pedagogic practice.

Publication 5 is based on a 24-week trial of Programme Focussed Assessment for 67 first-year accounting students. The assessment covered learning over two semesters based on integrated programme level learning outcomes rather than more focussed learning module outcomes. For students, the form of preparation and the assessment had novel characteristics outside of their experience. The PFA was conducted at the end of the academic year. A mixed method was adopted. The unique PFA evaluation questionnaire was substantial (see Appendix 9 as a research artefact), and for reasons of student accessibility, the follow-up confirmatory focus group was held with only four students (see extract of transcript in Appendix 10 as a research artefact). Publication 5 identified eight lessons for practice.

Publication 6 is based on specific bounded use of the visual metaphor technique to develop students' reflective skills. Students (71) participated in the reflection exercise during timetabled periods and private study. The evaluation used a questionnaire (see Appendix 11 as a research artefact). Timetable restrictions prevented the use of focus groups. Participating students were required to write qualitative reflective responses to open-ended questions presented in the questionnaire.

Overall, the general evolutionary form of the research methodology represents increasing sensitivity to the circumstances and constraints of each study and the need to identify a focussed agenda for discussion, analysis, and representation of findings to create lessons for practice. Table 7 summarises the form and relationship of the quantitative and qualitative methods used to evaluate the innovations presented in this Submission using the following design criteria for mixing methods (Bashir et al., 2017; Cresswell, 2013).

- a. Level of interaction between methods. Are the methods used independently or interactively? For this Submission, the term “interactive” is used to denote questionnaire results used to create the agenda for focus groups.
- b. Prioritised method in the research study. What precedence or priority do the qualitative and quantitative methods have in each study?
- c. Relative method timings. How are the methods deployed (concurrently, sequential, or multi-phase)?
- d. Mixing of study products. When are the products of the qualitative and quantitative methods mixed (during data collection, analysis, or during interpretation)?

Table 7

Summary Comparison of Methodological Approaches Used for the Published Works

Publications	Methodology	Data Collection	Mixed Methods Characteristics	
			Interaction & Precedence	Timing & Mixing
Publication 2 (2010) Student Awareness <i>(Financial)</i>	Quantitative Method	Questionnaire & Knowledge Test	(N/A)	(N/A)
Publication 3 (2010) Innovation <i>(Blended Learning)</i>	Qualitative Method	Focus Groups Interactive Discussions	(N/A)	(N/A)
Publication 4 (2015) Innovation <i>(Twitter)</i>	MIXED METHODS	Questionnaire then Focus Groups	Interaction (Interactive) Precedence (Equal)	Timing (Sequential) Mixing (In interpretation)
Publication 5 (2018) Innovation <i>(Programme Assessment)</i>	MIXED METHODS	Questionnaire then Small Focus Groups	Interaction (Interactive) Precedence (Questionnaire)	Timing (Sequential) Mixing (In interpretation)
Publication 6 (2018) Innovation <i>(Visual Metaphor)</i>	MIXED METHODS	Questionnaire and additional reflective open-ended questions	Interaction (Independent) Precedence (Equal)	Timing (Concurrent) Mixing (In interpretation)

CHAPTER 4 – AN EXAMPLE MULTI-INSTITUTIONAL FINANCIAL AWARENESS STUDY

Publication 2 Introduction

Publication 2

Marriot, P., Pogue, M., & Osgerby, J. (2010). An analysis of students' awareness of personal finance in higher education: A Welsh, English and Northern Ireland perspective. *International Journal of Management Education*, 9(1), 43-56.
<https://doi.org/10.3794/ijme.91.298>

This research study was conducted under the tutelage of Dr P. Marriot of the University of Winchester Business School. It carried forward her earlier work for the Higher Education Academy (Marriot, 2009) on the development of an online instrument for assessing students' awareness of personal finances in higher education (SAPHE). Publication 2 The instrument measures students' personal financial awareness, budgeting capabilities, debt levels and other information such as part-time working hours. Publication 2 extends the survey work nationally to 420 students (365 usable questionnaires) attending three UK business schools in England, Wales, and Northern Ireland (Scotland was excluded because of different student funding arrangements).

The research provides a valuable contribution to understanding financial challenges in for Business School students, irrespective of social class, who find balancing their finances tricky and face unparalleled debt burdens during and after their studies. The research study's proposition is that with adequate personal financial awareness, students can manage their debt better. Firstly, the work for Publication 2 provided and first opportunity to participate in a large scale professional research study, working with other academic staff, handling, and analysing the data collected, and as part of the small team, writing components of the follow up paper. Secondly, the findings were taken forward into the redevelopment of the University of Winchester Accounting Programme Revision (2013) in the consideration of the future 'Accounting Student Model' and was part of the motivation for the development of a separate first year Academic and Professional Skills Module.

Publication 2 Comparison with other Practitioners

Previous research suggests that term-time working, particularly long hours, is more likely when students are experiencing hardship or are from lower social backgrounds and are, therefore, already at a disadvantage in HE (Metcalf, 2003; Callender & Wilkinson, 2003). Purcell, Elias, Davies and Wilton (2005), in their study of 8,600 graduates, found that 47% had undertaken paid work during term time, with prevalence among respondents from lower social class backgrounds. Research undertaken by Barke et al. (2000) and Connor and Dawson (2001) also revealed that students from less well-off backgrounds were likelier to work part-

time and work longer than students from better-off families. More recently, Inman (2008) reported the National Union of Students' concerns regarding the credit crunch's effect on student results as it forced more of them to work to fund their living costs. Previous research suggests that term-time working, particularly with long hours, is more likely when students are experiencing hardship or are from lower social backgrounds and are, therefore, already at a disadvantage in HE (Metcalf, 2003; Callender & Wilkinson, 2003). At the time, it was evident that average student debt was on the increase. One-in-three students were constantly overdrawn; two-in-five students admitted being completely disorganised about their money; and one in three never checked their bank statements or, if they did, only checked the final balance. Previous research indicated weaknesses in students' knowledge of financial matters leading to increasing personal debt with a detrimental effect on performance. While several educational initiatives had been undertaken up to 2008, the research question was how effective have these initiatives been in increasing undergraduates' awareness of their personal finance issues and preparing them for life at university?

Publication 2 Methodology and Findings

To investigate and measure the personal financial awareness of students a quantitative approach was adopted using a pre-developed multi-part questionnaire and knowledge test. Five hypotheses were defined for statistical investigation using questionnaire data:

- a. **Financial awareness.** Students' mean financial awareness score is not lower than 40%⁷, irrespective of receiving lessons on personal finance at school.
- b. **Impact of previous lessons.** Students who have received lessons on personal finance do not perform better on the test than students not receiving lessons.
- c. **Impact of part-time work.**
 - (1) Students' who intend to work part-time do not perform better in the test than students who do not intend to work part-time.
 - (2) Students' who intend to work part-time do not perform better on the employment questions section of the financial awareness test than students who do not intend to work part-time.
- d. **Impact of debt.** Students who enter university debt-free do not perform better on the test than those with pre-existing debts.

7. 40% was a well-known value related to the learning module pass threshold used by the three institutions involved in the study. This value was related to students' knowledge assessed by a knowledge test.

The questionnaire instrument (Marriot, 2009) was applied which gathered background variables including the amount and type of part time work undertaken, their current level of indebtedness at the commencement of their studies, their anticipated debt level upon graduating and whether they had received lessons on personal finance at school and included a multiple-choice question test explicitly targeted at the personal financial skills of undergraduates. The instrument explored:

- a. Students' preparedness for and attitudes about managing their university finances.
- b. Students' participation in term-time employment.
- c. Students' preparedness for managing their finances at university.
- d. Students' participation in term-time employment.

Students completed 365 usable questionnaires satisfactorily (86%-88% institutional range of sample), and the age of the students was 19 years (mode). However, the mean test scores on the financial awareness test revealed gaps in students' financial knowledge. They indicated they are entering a critical phase, poorly equipped to manage burdensome cash restrictions. The study highlights the weaknesses that still exist with the many initiatives introduced to increase young people's financial awareness and calls for more compulsory support and guidance at school and in higher education.

Publication 2 Originality and Contribution

The study provides a practical model for obtaining factual, attitudinal and perception data from multi-institutional student groups. The study makes an essential contribution to understanding the financial awareness, or lack of awareness, of business students in the UK. In addition, it identifies where further work is required with longitudinal studies and the use of broader groups of students attending different courses.

At the time, an original UK-wide study of business students in three UK universities highlighted the continued weaknesses of students' financial awareness of students and potential impacts, despite public and private sector initiatives designed to increase young people's financial awareness. As a unique snapshot of business student knowledge and attitudes, this study contributes to understanding students' financial awareness in the UK. It was disturbing to find such low financial awareness amongst business students studying and raises concerns about the financial awareness of non-business school undergraduates. While many academic institutions have recognised their responsibility to provide the help and advice students need to cope with the financial implications of attending university, in most institutions, this support is optional and means that students do not seek help and advice until

they encounter financial problems. Rather than preventing students from experiencing financial difficulties before requesting help, this study provides significant evidence and justification for including financial awareness as a mandatory component of curricula.

Publication 2 Dissemination

From the perspective of this Submission the research work provided a valuable first experience in administering larger scale survey work and processing the volume of quantitative data generated. The insight into students' surprisingly poor financial knowledge was a factor in the design of learning modules for the revised and revalidated Accounting Programme (2013).

CHAPTER 5 - EXPLOITING ICT AND BLENDED LEARNING INNOVATION

Publications 1 and 3 Introduction

Publication 1

Burgess⁸, J. (2008). Is a blended learning approach suitable for mature part-time finance students? *Electronic Journal of E-Learning*, 6(2), 131-138.

<https://files.eric.ed.gov/fulltext/EJ1098715.pdf>

Publication 3

Osgerby, J. (2013). Students' perceptions of the introduction of a blended learning environment: an exploratory case study. *Accounting Education*. 22(1), 85-99.

<https://doi.org/10.1080/09639284.2012.729341>

ICT can be used for pedagogic purposes for volumetric storage, creating content structure, access to resources, communication functions, and search and retrieval capabilities.

Students can expect the following:

- a. Easy but controlled access to equipment and productive software to support their studies, e.g., student/workstation ratio of 1:1, with high system availability, secure Internet connectivity, and social media access.
- b. Access to secure, trustworthy virtual space for working and lodging digital material.
- c. Consistent presentational standards and well-organised administrative arrangements.

ICT-supported learning innovations demand detailed design. In 2005, the University of Winchester adopted a learning management system (LMS) based on the Modular Object-Oriented Dynamic Learning Environment (Moodle), providing the opportunity for the development of virtual learning environments (VLE). Using Moodle, Learning and Teaching (L&T) materials can be assembled in a digital format in a well-organised and documented manner. In addition, Moodle provides functions to support collaborative work using community discussion, online forums, wiki writing, chats, blog writing and for “student–student” and “student–teacher” communication.

Publication 1

In 2006 there were emerging concerns about the part-time/off-site course for mature part-time finance students at the University of Winchester; these students were taught conventionally with lectures and tutorials during intensive evening periods. There were issues with students' attendance, engagement, access to resources, quality of assessed work, lack of

8. Osgerby maiden name.

study time and problems with balancing social, family, employment, and study time. Internal validation work also showed that these part-time students needed improved cognitive and enabling knowledge skills in self-directed research, e-literacy skills (particularly spreadsheets), and exposure to a broader range of commercial accounting software. As a result, the conventionally taught part-time Financial Management Module was redesigned to present a more holistic, accessible, and varied learning experience with flexible ICT-enabled innovations such as online quizzes, wikis and forums, online links for personal study and improved access to resources. The innovation was evaluated and reported as Publication 1.

Publication 3

Publication 3 presents an evolving and scaled-up blended learning innovation designed for full-time students and provides the basis for the practical use of interactive spreadsheets, virtual collaboration work, wikis, online journal research, regular online quizzes and additional self-study learning materials. The other innovative research evaluations (Publications 4, 5 and 6) occurred in a Moodle LMS environment. In addition, the curriculum redevelopment and revalidation of the Accounting Programme (2013) assumed the availability of the LMS. In 2017, the University migrated the LMS from Moodle to Canvas. While Canvas has reduced the potential for e-learning development, it provides improvements in creating and sharing educational materials online.

Publications 1 & 3 Comparison with Other Practitioners

There is no universally agreed definition of 'blended learning' in the literature, where even the use of the descriptive term remains controversial. Blended learning describes forms of L&T which combine pedagogic techniques, including self-study, classroom activities, and on-the-job instruction, tailored to the needs of specific individuals and groups and utilising an appropriate enabling (blended) technology to support learning. The overall purpose of a blended learning approach is to provide a superior learning experience to improve outcomes. Macdonald (2006) states that blended learning is mainly associated with introducing online media into a course whilst recognising the benefits of retaining face-to-face contact with students. Santy and Smith (2007) stress that ICT-enabled e-learning techniques can be 'networked'. Many case studies examining the effect of blended learning on student learning experience conclude that LMS use provides students with more effective, efficient, and satisfying learning situations.

In contrast, Oliver and Trigwell (2005) argue that blended learning is only concerned with developing media, teaching processes and presentation rather than developing students' learning. They suggest blended learning could be redeemed by focusing more on the variation in the learners' experiences and what was happening to them during the learning process. De

Lange, Suwardy and Mavondo (2003) found that using a blended virtual learning environment (VLE) for an accounting course yielded positive and negative outcomes, particularly in retaining students' attention.

The pedagogic rationale for the introduction of blended learning is summarised by Mayes and de Freitas (2004) cited in Sharpe, Benfield, Roberts, & Francis, (2006) and considers blended learning can support three classic pedagogic paradigms:

- a. **Associative Learning (Behaviourist Paradigm).** The teacher is at the centre of all learning practices. Associative learning focuses on the direct instruction of students. The paradigm displays the characteristics of stimulus–response conditioning with formative testing based on reproduction and recall. At the same time, exploiting ICT provides for the availability of study material, speed, fast feedback, and overt/covert monitoring of student performance.
- b. **Constructivist Learning (Constructivist Paradigm).** Learning is enabled through activities designed to facilitate learners' assembly of ideas and skills through personal interaction, experimentation, and feedback.
- c. **Situative models (Social Constructivist Paradigm).** Learning is enabled through participation in collaborative communities (*the social context*) using communication between participants for observation, group problem-solving, sharing resources, mentoring and feedback as the basis of learning.

Therefore, a blended learning approach is, by definition, flexible enough to combine all three paradigms concurrently. However, the research presented in this Submission focuses on pedagogic innovations in the context of the Constructivist and Social Constructivist paradigms.

The research reported (Publications 1 and 3) is grounded in the core idea that innovative approaches to L&T must be requirements led and designed to meet the learning needs of a particular programme and students. Therefore, while an Institutional LMS will likely require technical consistency, each instance of a blended learning implementation will have unique characteristics designed to meet specific educational scenarios. Sharpe et al. (2006) identify eight dimensions against which blended learning can be profiled, classified, and compared. Using these Blended Learning Dimensions, Table 8 compares the forms of blended learning presented in Publications 1 and 3.

In addition, Salmon (2003) proposes an ambitious Five-stage teaching and learning strategy for online learning, as summarised in Table 9. The blended learning examples presented here were designed to follow this strategic map based on a structured learning environment where learners have increasing levels of interaction (socialisation) working

through organised stages to master technical knowledge and skills. This strategy conforms to a constructivist/social constructivist approach to designing technology-supported learning.

Table 8

The Blended Learning Innovations Reported In Publications 1 and 3 profiled using the Dimensions of Blended Learning (After Sharpe et al., 2006)

Blended Learning Dimensions	Publication 1 Blended Learning (2008) Prototype Single Module	Publication 3 Blended Learning (2013) Scaled Up Multi Module
Students	10 Mature (+ 23 years) part-time students	128 undergraduates and postgraduate students (18-30 years) belonging to 2nd year, 3rd year & Postgraduate student groups.
Delivery Mode	Maintains face-to-face classroom presentations and seminars covering theory & methods. Study resources online (study materials, course notes, lecture slides, worksheets, classroom exercises, interactive trial spreadsheets, quizzes and discussion materials. Collaborative work and discussions. Administration on line.	Maintains face-to-face classroom presentations and seminars covering theory & methods. Close link to online study materials. Directed reading and personal research to be shared with other students. Study resources online (study materials, course notes, lecture slides, worksheets, classroom online exercises, interactive spreadsheets, simulations, group assignments, online worksheets & quizzes. Online formative assessments and journal references online for directed reading. Collaborative work and discussions increased substantially. Follow-up notes are provided online. Online tutor communication enabled. Administration online.
Technology Mix	VLE Platform and Internet	VLE Platform and Internet Emerging personal use of social media. Experimental use of voting devices in the classroom (clickers) for instant feedback.
Chronology & Synchronicity	Formal lecture/seminar structure retained. Synchronous presentation of learning material.	Formal lecture/seminar structure retained. Most learning materials are online.
Locus	Classroom and remote study.	Classroom and remote study.
Students Roles	Focus on Business part-time Business students studying Financial Management.	Attendance by students following multidisciplinary pathways.
Pedagogies	Limited changes. A range of study materials was adapted, including worksheets, quizzes, and interactive tests presented sequentially and available online for private study.	All learning resources adapted for online presentation or new online resources created. All course learning materials are available from the outset within the VLE.
Focus of Goals	Focussed on summative assessment.	Focussed on summative assessment.
Direction	Tutor-led programme.	Tutor-led programme.
Evaluation Methodology	Mixed quantitative and qualitative methods.	

Table 9

Five Stages of the Blended Learning Teaching and Learning Strategy (after Salmon, 2003)

Stage	Learning Stage	Summary of Study Approach
1	Access and Motivation	Students' preparation to use the VLE. Administration and passwords. Trial of functions.
2	Online Socialisation and sharing resources	Students work in small groups to create content, e.g., wikis. Students produce content materials to use in subject discussions and support personal study.
3	Information Exchange	Students use content materials for self-study and discussion with other students and tutors. In addition, students exchange content via collaboration.
4	Knowledge Construction (specific technical study of financial management)	Use of online resources for more intensive self-study. Preparation for assignments and formative assessments. Continued student collaboration.
5	Development (personal study and preparing for the examination)	In the context of their personal goals, students widen the scope of their studies in the context of the programme requirements and summative assessment. Continued student collaboration.

Publications 1 & 3 Methodology and Findings

Publication 1

The blended learning prototype in the Accounting Programme was directed at a small, neglected cohort of students who have improved online access to learning resources, focusing on cognitive and enabling skills development in self-directed research and e-literacy skills using spreadsheets and commercial accounting software. A questionnaire (see Appendix 5) gathered students' perceptions about the methods and resources used; Students generally liked the new approach (See Burgess, 2008, Table 4, p.137 for "likes" and "dislikes"). In this prototype innovation of blended learning in the Faculty, students moved relatively quickly through Learning Stages 1-4 (Salmon, 2003). However, the module period was too short to enable more comprehensive knowledge development. Nevertheless, compared with previous metrics, part-time students' assessment marks were about 8% higher, an 80% fall in the number of students requesting concessions to delay assignments, and overall attendance improved.

Publication 3

The scaled-up multi-module installation of blended learning was subject to qualitative evaluation using a programme of voluntary focus group meetings of students over an extended period where questions and issues were defined. The evaluation themes were students' expectations and perceptions, the use of ICT Resources, the environment of institutional practices, communication, interaction, and collaboration. During the focus group discussions, students reported they liked the following:

- a. the new structure of learning material and access to comprehensive learning resources.
- b. Reduced administrative effort.
- c. Visibility of the scope of material.
- d. The LMS as a "safety Net" – knowing where to find L&T materials (Love & Fry, 2006).

Although focus group discussions were recorded verbatim, Appendix 6 shows an example set of typed contemporaneous notes taken by the author during the first focus group meeting (presented as a research artefact). However, issues emerged about the practical use of older ICT systems and system availability, institutional constraints, students' confidence and competence, and ICT-based communication. Surprisingly, students did not use the LMS for online collaborative work, instead opting for more available but unmonitorable social media

applications. This student behaviour was the initial motivation for the later social media study (Publication 4).

Publications 1 & 3 Originality and Contribution

Publication 1 reports on a prototype blended learning example as a practical initiative designed to meet specific student needs while conforming to a theoretical learning stance and teaching strategy (Salmon, 2003). While Publication 3 reports on a scaled-up comprehensive approach to blended learning where qualitative evidence gathered from students confirm many of the findings of prior research (see example data recoding notes Appendix 6).

Publications 1 and 3 report students' perceptions of engaging with ICT, the value of classroom-based ICT resources, the impact of institutional practices and the nature of communication among students in live practical settings. Publications 1 and 3 demonstrate:

- a. How traditionally and conservatively taught learning modules can be reworked into practical well-structured innovative, and supportive blended learning approaches, exploiting the available ICT to create positive learning outcomes.
- b. Publications 1 and 3 demonstrate the value of the Five Stage Strategy Model for Blended Learning (Salmon, 2003), and its use provides a coherent framework to implement an innovative constructivist-orientated learning pedagogy exploiting the available ICT. It also demonstrates the time required for students to master blended learning practices and transition into habits associated with personal discovery and development.

Publication 3 offers practical lessons to colleagues planning the introduction of blended learning. Publication 3 identified negative students' perceptions about:

- a. Presentation of the technical subjects.
- b. Perceived volume of learning material visible in the LMS.
- c. Distrust of other students' contributions in online collaborative work (see Chapter 8).
- d. Communicating online using the LMS based facilities provided (See Chapter 6).

Publication 3 was an essential evolutionary step in the broader expansion of blended learning approaches in the Accounting Programme and later in other Faculty programmes. As a result, today, using the LMS in the Faculty is standard practice.

Publications 1 & 3 Dissemination

The research and its findings about blended learning were reported in the public domain as follows:

Publication 1: Blended Learning Prototype

- a. Presentation of the research at the European Conference on eLearning 2007, University of Copenhagen. Presentation title: *Is blended learning suitable for mature part-time students?*
- b. Publication in the Electronic Journal of E-Learning (2008).
- c. Presentation of Paper at the British Accounting Association Conference Special Interest Group (SIG) Education (2009), University of Essex. Title: *Do blended learning techniques enhance part-time finance students' learning experiences?*
- d. The Blended Learning prototype innovation was the basis for scaling up across other accounting programme learning modules.
- e. Paper 1 has been cited in 39 journal articles.

Publication 3: Scaling Up Blended Learning

- a. Presentation at the BAA Conference SIG Education (2010), University of Dublin. Title: *Blended Learning to enhance finance students' learning experiences: a case study approach.*
- b. Publication in Accounting Education (2013).
- c. Presentation at the BAA Conference (SIG Education) (2013), University College Winchester. The emerging paper was about extending the blended learning research reported in Publication 3 to examine undergraduate students' perceptions and awareness towards the utility of developing employability skills embedded in the curriculum of the revalidated accounting degree from 2014. This research was based on a broader longitudinal study about employability but was not published.
- d. Paper 3 has been cited in 134 other journal articles. The paper was among the most highly cited papers in Routledge Accounting journals in 2013-2014.

Publications 1 & 3 Summary

The lessons learnt from the prototype innovation (Publication 1) and the later scaled-up innovation (Publication 3) were incorporated into the broader development of blended learning in the redesign and development of the Accounting and Finance undergraduate programme (2013) and the new Economics degree in the Faculty. Subsequently, the blended

learning environment of the Accounting programme provided the L&T environment for the Social media Twitter trial (Publication 4), Programme Focussed Assessment development (Publication 5) and use of visual metaphor for reflective practice development (Publication 6) covered in the following chapters. Further reflection about the exploitation of ICT for pedagogic purposes is presented in Chapter 8.

CHAPTER 6 - EXPLOITING SOCIAL MEDIA FOR PEDAGOGIC INNOVATION

Publication 4 Introduction

Publication 4

Osgerby, J., & Rush, D. (2015). An exploratory case study examining undergraduate accounting students' perceptions of using Twitter as a learning support tool. *International Journal of Management Education*, 13(3), 337-348.
<https://doi.org/10.1016/j.ijme.2015.10.002>

Social media is a term used to describe the function of interpersonal interaction between people using a range of digital equipment. The explosive evolution and spread of inexpensive personal digital equipment and access to telecommunications networks have founded massive growth in social media usage and the creation of virtual communities. The distinctive characteristics of social media are easy accessibility to receive, store, read, create, forward and exchange online information of varying quality with few constraints. Recent social network statistics are illuminating where 4.8 billion people (60% of the world's population) now use social media applications with an average daily use of 2.5 hours and where, at the time of writing, there has been a growth rate of about 200 million new online users per year (Chaffey, 2023).

There were two motivations for the Twitter study. Firstly, during the expansion of blended learning in the Faculty (See Chapter 5), students undertaking online collaborative work chose not to use the LMS communication facilities, opting to communicate with personal social media accounts to support group work. Secondly, the literature offered Twitter as a potential contributor to literacy skills development (*particularly brevity*), resource sharing, collaborative work, peer support and administrative innovations using a communication tool, highly accessible and available, albeit with somewhat constrained messaging capacity/capability.

Publication 4 Comparison with Other Practitioners

The Literature proposes Twitter for pedagogic support from the perspective of the social-constructivist paradigm for maintaining student relationships, collaboration, facilitating groups, bonding and provoking virtual classroom discussions. However, the limited characteristics of Twitter restrict its pedagogic potential to express complex thoughts. Careless (2013) reported that students using social media in groups tended to “drop off the radar” more frequently than students meeting face to face. Furthermore, using social media is an individual activity where a student could be working in a solitary situation, perhaps even psychologically lonely, yet be attempting to participate in the online virtual pedagogic-social engagement. Using Twitter pedagogically might generate unintended student behavioural

consequences, as Kassens-Noor (2012) found, e.g., students' reflective practices shifted from considering personal faults to stressing the identification of faults in others. The literature also warns about presenting students with distracting and addictive, time-consuming online tools.

In the non-educational literature, Macskassy (2012) analysed 650,000 tweets from 2,400 Twitter users (general population) over one month. Only 13% of Twitter user activity was composed of dialogues, and 50% of users spent only 5% of their time in dialogue, while 42% did not participate in dialogues. Twitter's emerging natural social dynamics illustrate the potential for significant operational issues and difficulties in an educational environment requiring all students to engage with direct online collaborative dialogues.

The Literature has been enthusiastic about the potential of Twitter to encourage and generate improved learning outcomes. In the literature, there are over fifty potential pedagogic uses of Twitter identified to support at least eight educationally related functional communication processes (*broadcasting & co-ordination, microblogging, trend following, polling, personal projection & inter-student trust, online discussion, resource sharing and feedback*) across educator/student, student/student groups and students/world communication relationships. A taxonomic model (Figure 2), derived from the literature and original to Publication 4, shaped the nature of the pedagogic Twitter trial and its evaluation.

Figure 2

Model of the Proposed Functional Uses of Twitter to Support Pedagogy found in the Literature (Osgerby & Rush, 2015, p. 339)

Functional Communication Processes	Communication Interaction Models (After Moore, 1989)		
	Educator – Student (9, 12, 16)	Student – Student(s) (9, 12)	Students – World (9, 12)
BROADCASTING & CO-ORDINATION	Communication (5, 12), instant messaging (7, 8) & virtual conversations (8).		
	Co-ordination (1, 12) & administrative messaging (1, 3, 12, 15). Mobilising others (1, 7, 15). Fast/timely addressing of student matters (5).		Community highlighting (1).
MICROBLOGGING	Contributing to microblogs (8), brainstorming (1, 15), changing ideas (8) & rich discussion of themes (15). Asking peer questions (5, 8, 13, 15) & sharing opinions (1, 7, 8).		
TREND FOLLOWING	Monitoring chatter/murmuring (2, 3, 8), conference tracking & backchannel dialogues (1, 2, 3, 7). Question/answer dialogues (9). Trend following (<i>following professionals, organisations, issues</i>) (1, 3, 5).		
POLLING	Student assessment (1). Polling, popularity & voting (8, 10).	Comparison of own work/progress with other students (1).	
PERSONAL PROJECTION & REPRESENTATION	Developing personal projection/status (<i>social presence</i>) & personal credibility (5, 7, 8, 15). Building and maintaining inter-student relationships (3, 4, 5, 15, 19) & community building (3, 4). Developing respect for diversity (15). and interpersonal development (8, 12, 15).		
	Developing classroom dynamics (1) & facilitating groups (5). Developing cohort adhesion (2, 9), maintaining inter-student relationships (5, 8, 15) & Inter-student trust development (5, 8, 15).		Connecting to others (15).
ONLINE DISCUSSION	Provoking discussion (1) & intervening (8). Collaboration (5, 8, 13), virtual classroom discussions (1, 3, 8, 9, 15). Developing co-operation (15) & the learning community (12).		
	Developing credibility of staff & the institution (1).	Collaborative writing (1, 3). Developing a personal learning network (1, 4, 7). Collaboration in the blogosphere & networking (1, 8, 11, 15, 19).	
RESOURCE SHARING	Resource mixing/sharing (5, 7, 8, 15). Sharing Information ‘nuggets’ information & retweeting (1, 3, 5, 8, 9, 15, 17) & link promotion (1).		
FEEDBACK	Communicating expectations, results and suggestions (8, 15, 17). Gathering opinions & backchannel monitoring (1, 7). Immediate feedback (2, 4, 8, 9, 16) & generating reflection (1, 3, 7, 8), assignment setting/submission (1) & question/answer dialogues (1).		
<p><i>Numbers in parentheses refer to the sources listed below, which are in functional order of appearance and not in alphabetic order:</i></p> <p><i>(1). Grosseck & Holotescu, 2008; (2) Parry, 2008; (3) Skiba, 2008; (4) Stevens, 2008; (5) Dunlap & Lowenthal, 2009; (6) Wankel, 2009; (7) Conole & Alevizou, 2010; (8) Ebner, Lienhardt, Rohs & Meyer, 2010; (9) Junco, Elavsky & Heiberger, 2013; (10) McClean, Hagan, & Morgan, 2010; (11) Rheingold, 2010; (12) Badge, Johnson, Moseley, & Cann (2011); (13) Lowe & Laffey, 2011; (14) Buzzetto-More, 2012; (15) Greenow & Gleason, 2012; (16) Kassens-Noors, 2012; (17) Marriot & Teoh, 2012; (18) Zaidieh, 2012; (19) Zanamwe, Rupere, Kufandimbwa, 2013.</i></p>			

Publication 4 Methodology and Findings

Twitter as a learning support tool was presented to 37 first-year Management Accounting and Information technology students under 23 years of age. This first-year learning module was selected as the assessment would not contribute to the final degree classification. Ethics approval was granted based on voluntary student participation with alternative study approaches provided. All students opted to take part in the trial. The students were exposed to intensive use of Twitter in six teaching sessions over 11 weeks confined to communication processes within the learning module boundary, as shown in Figure 3. Related institutional and faculty communication functions were out of scope.

Figure 3

Experimental Pedagogic Use of Twitter Across Proposed Functional Processes (Osgerby & Rush, 2015, p. 343)

Functional Processes	BROADCASTING	MICROBLOGGING	TREND FOLLOWING	POLLING	PROJECTION	DISCUSSION	RESOURCE SHARING	ENGAGEMENT	FEEDBACK
SESSION 2: USE OF IT FOR LEARNING Use of Twitter/ Trend Following.	●	●	●		●				
SESSION 3: USING TWITTER: CONCISE WRITING AND POSTING Writing concise lists of management accountant staff's key roles and posting this on Twitter for other students to read and comment on. Posts discussed in a seminar. Groups tasked with expansion of ideas in writing.		●	●			●	●		
SESSION 5: USING TWITTER: POLLING (POPULARITY VOTING) Using Twitter for online debate.	●	●		●					
SESSION 6: USING TWITTER: POSTING ONLINE ACADEMIC LINKS Posting links to other students to explore a subject online (stock costing).		●				●	●		●
SESSION 7: USING TWITTER: POLLING (OPINION VOTING) Polling class members with questions and answers.		●		●					●
SESSION 8: TREND FOLLOWING Exchanging information and exploring group dynamics (trend following) with follow-up group work.			●			●			
SESSION SEMESTER 2/SESSION 5: ASSESSMENT SUBMISSION Formal Twitter-based assessment experiment covering the subject 'Activity Based Costing' (ABC). The exercise was carried out, but it was decided not to apply marks as part of the module assessment.	●	●					●		●

Evaluation applied a mixed methods approach using a questionnaire and focus group discussions. All 37 students completed the questionnaire. Two focus groups discussed the trial and the findings from the questionnaire. Student responses were mixed and cautious but generally supportive. There was a general view that Twitter was complicating the learning process, and students appeared unconvinced that Twitter improved the communication process. The physical limitations of using Twitter for learning were also disliked. This original wide-ranging trial demonstrates the relatively complex but ambiguous perceptions of students participating in a technical innovation proposed as having meaningful communication and pedagogic utility.

Publication 4 Originality and Contribution

The literature proposes Twitter as a fast, available, and convenient way of communicating in keeping with students' lifestyles. Twitter appears to have the potential to support many forms of communication, but the authors point to a lack of research about online relationships and dialogues in an educational environment. Publication 4 contributes to the literature with:

- a. An original holistic taxonomy (Figure 2) of proposed Twitter pedagogic uses. This taxonomy provides the framework for the wide-ranging Twitter evaluation study.
- b. Practical experience from a unique holistic and comprehensive trial of Twitter in an educational setting across the range of potential broad communications functions embedded into the delivery of a learning module over a significant period.
- c. An opportunity for students to experiment with a social media tool to prepare for future commercial employment.
- c. Identifying students' perceptions of the value of Twitter to support learning. Publication 4 describes unexpected complexity and unpredictability in students' perceptions, motivation, and support for technical innovations in the classroom. It was found that students' perceptions, attitudes, and behaviours as Twitter subscribers in a demanding educational context were complex, unexpected, and often confusing. These perceptions may reflect the natural real-world dynamics of Twitter usage (*generally not considered by educational authors*), which may mitigate against its value as a pedagogic tool except to support simple educational communication processes.
- d. Providing practical experiential guidance to colleagues planning to use Twitter in a similar educational environment where its controlled pedagogic use differs from its casual social use, even in collaborative activities.

Publication 4 Dissemination

The findings of the research about the use of Twitter as a pedagogic support tool have broad appeal. Therefore, the research findings and practice recommendations were reported in the public domain and disseminated as follows:

- a. British Accounting and Finance Association (BAFA) Conference SIG Education (2013), Middlesex University, West London. Presentation of the emerging paper: Investigation of the Utility for Accounting Education of the Internet-based Social Networking Service and 'Microblogging' Tool Called Twitter (*awarded the accolade of "best-emerging paper"*).
- b. BAFA Conference SIG Education (2014), The University of the West of England. Presentation of Full Paper: Investigation of the Utility for Accounting Education of the Internet-Based Social Networking Service and Microblogging Tool Called Twitter (*awarded the accolade of "best full paper" at this international conference*).
- c. Teaching with technology DAF/Higher Education Academy (HEA) Workshop (2014), Open University. Presentation: Social Networking experiences at the University of Winchester.
- d. The paper was published in the International Journal of Management Education (2015) and cited in 67 other journal articles.

Further reflection about the use of Twitter for pedagogic purposes is presented in Chapter 8.

CHAPTER 7 - TWO EXAMPLES OF CONSTRUCTIVIST PEDAGOGIC INNOVATIONS

Publications 5 & 6 Introduction

Publication 5

Osgerby, J., Jennings, P., & Bonathan, A. (2018). Do students see the benefits? An exploratory study of undergraduate accounting students' perceptions of a programme focussed assessment International. *International Journal of Management Education*, 16(2), 327-339.
<https://doi.org/10.1016/j.ijme.2018.04.006>

Publication 6

Osgerby, J., Marriott, P., & Gee, M. (2018). Students' Perceptions of using Visual Metaphor as part of Personal Development Planning: An exploratory case study of accounting students. *Accounting Education*, 27(6), 570-589.
<https://doi.org/10.1080/09639284.2018.1523735>

It is common practice to deliver undergraduate programmes with mixed mandatory and optional modules organised to provide learning pathways for students. The approach supports a manageable curricular framework for presenting the curriculum and institutional efficiency where summative assessments from learning modules provide the basis for a student's overall degree classification.

Degree modularisation has been criticised in the literature because overall learning progression is not assessed against programme level objectives (see Appendix 4), but against subsets of objectives. Programme Focussed Assessment (PFA) proposes measuring students' ability to deploy integrated knowledge and skills developed over an extended period and assessed against high-level learning outcomes. The PFA literature forecasts benefits such as improvement in students' overall satisfaction and motivation, confidence development, focus on programme outcomes and enhanced feedback. For institutions, the literature associates PFA with enhanced summative assessment, improvements to validity and reliability, and better visibility of student progression. PFA proponents also claim it enhances the overall learning process (Bok et al., 2013). The challenge is establishing a manageable overall PFA process without disrupting the extant pattern of learning module assessment.

Publication 5 Comparison with Other Practitioners

The primary trigger for attempting PFA in the Accounting Programme was the Programme Assessment Strategies (PASS) Report (2012)⁹. In 2015, there were few practical examples of PFA in the literature, and the practical resource, design and implementation issues appeared daunting. Publication 5 reports an original, innovative development of a

9. McDowell, L. (2012). Programme Focussed Assessment. *Bradford: Bradford University*, <https://www.bradford.ac.uk/pass/resources/short-guide.pdf>

practical PFA methodology to enable students to integrate and deploy knowledge and skills formed at a modular level for assessment against desired programme outcomes.

The concept of PFA fits into the constructivist paradigm of learning where the pedagogic concepts of 'deep' and 'surface learning' (Marton & Säljö, 1976; Pask, 1976) and 'slow scholarship' (Knight & Yorke, 2003) are relevant. The selection, consciously or unconsciously, of students' deep and surface learning approaches is likely driven by their perceptions of value, meaning, and understanding of the material under study (Wynn-Williams, Beatson, & Anderson, 2016). Students experiencing a surface learning approach, which may be a product of the fragmented modular assessments, are likely to rely more on recall, reproduction, application of standard techniques and straightforward right or wrong short answers. Whereas a deeper learning approach is more likely to be based on a structured, holistic design and integrated content, where knowledge is required to be interrelated and coupled to the development of generic higher-order skills such as analysis, critical thinking, and problem-solving (Beattie, Collins, & McInnes, 1997). However, there does not appear to be a simple separation between students' surface/deep learning approaches on what is likely to be a complex spectrum of learning activities articulated across a degree programme.

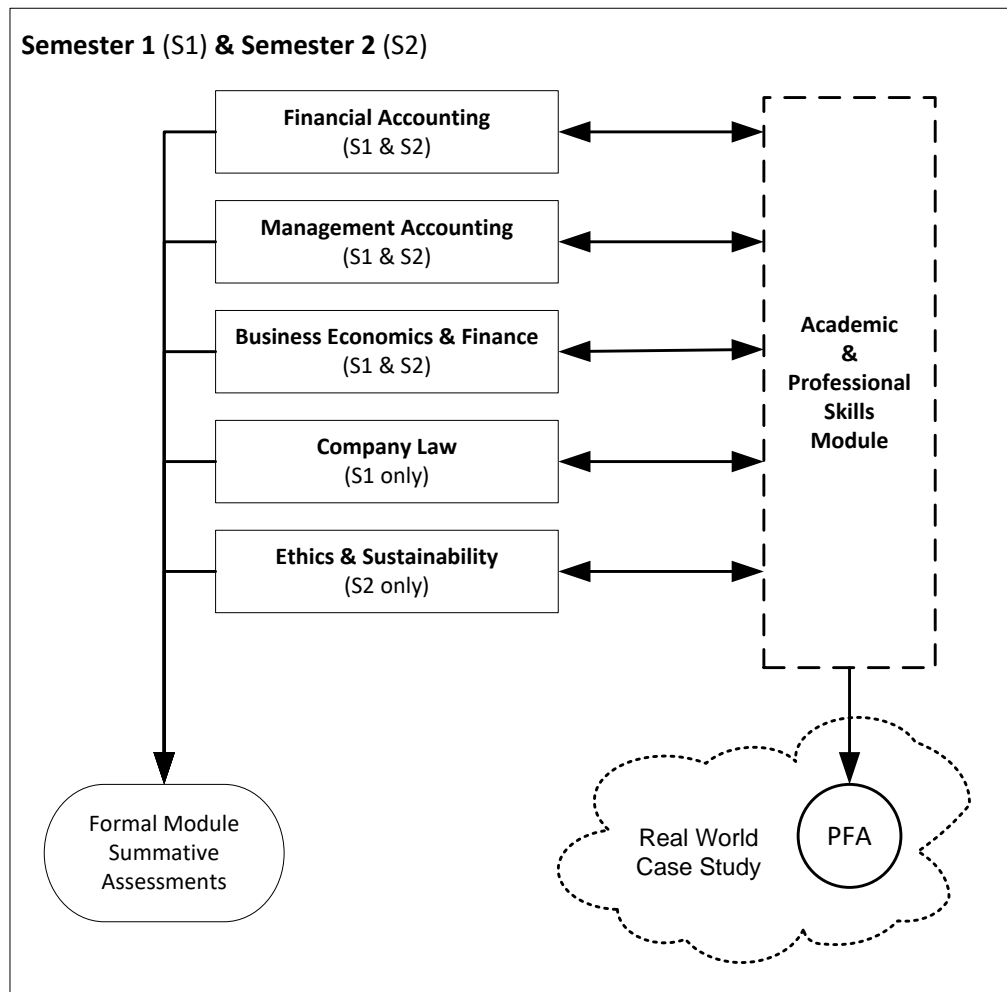
Publication 5 Methodology and Findings

The Winchester experimental PFA trial was undertaken over two semesters by 67 first year Accounting and Finance students aged between 18 – 23 years during the academic year 2015–2016 and covered five taught modules and one independent mandatory Professional Skills (APS) Module, which provided the framework for PFA preparation. The APS Module provides a unique practical solution. The module has the same status as other learning modules with a programme time allocation but no timetabled classes. The APS Module relies on students' activities and planned coordinated contributions from academic staff delivering the five related academic modules. Figure 4 shows the symbiotic relationship of the APS Module to the mandatory taught Accounting Programme modules. Students access the PFA support and exercise materials throughout the academic year, coordinated with the accounting modules, which retain their summative assessments.

The PFA is enacted as an examination at the end of the academic year based on a case study document pack using published real-world information of a well-known commercial company, e.g., Annual Financial Report and other varied evidence. The case study is presented to students 24 hours before the PFA to allow time for preparation and further online research. Students carry out a series of tasks which requires them to deploy knowledge and skills gained from the five mandatory first-year accounting programme modules under examination conditions.

Figure 4

The First Year Accounting Programme Modules relationship with the Academic and Professional Skills Module leading to the PFA.



The PFA allowed students to use their analytical knowledge and skills using financial information, make personal judgements, and consider ethical issues. Students' written answers are not assessed for technical "correctness", but how they apply their technical knowledge, skills, professional understanding, and transferable skills in the context of programme-level aspirations. Table 10 presents a summary of the PFA marking schedule.

Table 10*Summary of the Unique PFA Marking Schedule*

Major Section	Sub Section	Marks Allocation
Technical Knowledge & Professional Understanding (50%)	Technical accounting knowledge	30%
	Business understanding	10%
	Ethical awareness	10%
Transferable Knowledge & Skills (50%)	Use of information	20%
	Analysis	20%
	Evaluation	10%

The follow-up evaluation of the innovation was based on mixed methods using a questionnaire and a small focus group. Most students appeared to support the purpose of PFA and agreed that PFA provided a practical learning experience (79%). Students reported:

- a. PFA extended their understanding of accountancy (72%);
- b. being content PFA feedback (79%), where it provided the basis for reflection and action planning for further knowledge and skills development (92%).

However, students reported being apprehensive about PFA, wanting even more preparation time which displayed lack of confidence in their competencies. The detailed pattern of students' perception responses is in Table 4 of Publication 5 (Osgerby, 2018, p. 333).

Publication 5 Originality and Contribution.

The PFA was an original practical experimental implementation in the Faculty and was more than just the development of a single integrated end-of-year assessment test. The supporting APS module allowed the PFA to be part of the learning process, elevating students beyond the learning constraints of specific technical modules. The research reported in Publication 5 contributes by:

- a. Creating a practical remedy to some of the criticism of degree modularisation and an attempt to improve student satisfaction, confidence, preparedness, and overall engagement.
- b. Demonstrating a scalable and transferrable practical solution to establishing PFA with an APS Module integrated into the broader mandatory Accounting Programme over an extended learning period.

- c. Implementing pedagogy within the constructivist paradigm, designed to integrate skills, knowledge, understanding and interpretative judgement by stimulating students to make intermodular connections and new connections in their accounting studies through assessment using real-world multidimensional case studies.
- d. Developing a practical assessment process (*and marking system*) commensurate with measuring students' performance against target programme-level learning outcomes.
- e. Assessing the value of involving academic staff in presenting the Accounting Programme and supporting change.
- f. Providing conclusions and recommendations for practice of interest to colleagues involved in developing PFA.

Publication 5 Dissemination

The broader public domain contribution to the practice of this research was made at:

- a. Learning Workshop, University of Winchester (2014). Presentation. The use of Traffic Lights Feedback in Programme Level Evaluation.
- b. Learning and Teaching Conference, Southampton Solent University (2016, July). Presentation: Programme Focussed Assessment.
- c. BAFA Conference SIG Education, University of South Wales (2017). Presentation: Programme Focussed Assessment. (*awarded the accolade of "best full paper" at this international conference*).
- d. Association of Chartered Business Schools Conference, Glasgow, 2018. Presentation: Programme Focussed Assessment.
- e. The work was summarised in the published University of Winchester Capture Magazine (2017) (Jennings, Osgerby & Bonathan, 2017), and Paper 5 was published in the International Journal of Management Education (2018).
- f. The paper has been cited in 7 other journal articles.

Publication 6 Background

Creating a Personal Development Plan (PDP) is now part of many undergraduate programmes as an organised and supported set of processes for students to reflect upon their learning, performance, achievements, and shortcomings, going on to create an action plan for personal, educational and career development. During their first year, accounting students at the University of Winchester must develop a PDP while undertaking the compulsory year-long APS module described above. The expectation is that PDP will positively impact students' understanding of their capabilities, motivation, educational engagement, and achievement (Bullock & Jamieson, 1998). PDP operates within the constructivist paradigm with a personal reflection about life choices, defining goals, and planning personal development. Learning about oneself is personal responsibility (von Glasersfeld, 1989). The research presents a unique experimental exploration of accounting students using a visual metaphor approach to reflect on their skills and knowledge and to evaluate and communicate their PDP in visual rather than textual terms.

The literature reports issues about students' motivation for and difficulties with the reflection process, coupled with superficial and rushed engagement in the PDP process (Brennan & Shah, 2003; Fry, Davenport, Woodman, & Pee, 2002; James, 2013). The PDP reflection task for students is to assemble a meaningful integrated interpretation of their history and present circumstances and be cognisant of their development needs in the context of forecast professional career requirements (Amundson, 2006; Maree et al., 2006). Students with undeveloped reflective and communication skills are unlikely to find PDP activities straightforward. Students may even find PDP a negative experience when they find it challenging to evaluate, contextualise and articulate their knowledge and skills (Fry et al., 2002; Thompson, Hallwood, Clements, & Rivron, 2009).

Publication 6 Comparison with other practitioners

Linguistic and visual metaphors are forms of abstraction in interpersonal communication which convey knowledge, wisdom, insights, complexity, arguments, and relationships. A metaphor does not convey literal meaning but is a template to simplify the representation of complex ideas. For example, teachers use many forms of metaphor to enable learning (Eppler, 2003). Conceptual Metaphor Theory (Lakoff & Johnson, 1980) assumes human experiences are broadly similar; therefore, most people can generate and understand metaphors, whatever their circumstances. However, Gibbs (2011), does not accept this universality, where the understanding of metaphor as a product of reflection is likely to be contextual and experiential and have private personal meaning. The use of visual methods by students has been proposed in the literature as complementary to the constructivist paradigm,

providing students with the time and flexibility to attempt to represent the cognitive and affective aspects of their reflective thinking outside of linguistic constraints (Gauntlett, 2005; Ward & Shortt, 2013).

Publication 6 Methodology and Findings

Publication 6 describes a unique experiment where accounting students reflect deeply about their place in the world and their potential future career and produce a visual metaphor to express these ideas. An objective of the work was to encourage mathematically orientated students to create meaningful PDP imagery to provide a unique constructivist insight into their perceptions about themselves and their prospective developmental journey and planning for their future. Seventy-one Accounting Programme students undertook the experiment as part of the APS Module. Students had previous experience with mind mapping (85%), PDP (41%) and visual metaphor (22%). Students were free to use any visual method without restriction. The visual metaphor products were presented on paper (A3+) and attached to a final written PDP. In addition, a multipart questionnaire explored students' perceptions with additional free-text open-ended questions.

Students were content to try the visual metaphor exercise, but about half the students found the process complicated and time-consuming in the short period available. Nevertheless, the resulting visual products from all the students were profound attempts to articulate their PDP perspectives visually. Even with a remaining general ambivalence towards the visual method, over half the students agreed they had a greater interest in PDP, which had become a more critical process for them to pursue.

Publication 6 Originality and Contribution

- a. This study presented an original approach where students utilised an open-ended visual metaphor approach to encourage students to express the products beyond written words. This reflection exercise using visual metaphor was designed to boost personal critical assessment of knowledge and skills in the context of career aspirations.
- b. The study's findings suggest that this open-ended methodology with visual methods can encourage students to reflect meaningfully on educational, life experiences and career aspirations.
- c. The methodology provides shortcuts to expressing the meaning of their thoughts, which otherwise would be difficult to communicate in text form. The PDP metaphor exercise also introduces students to iconography and technical information presentation, which should be helpful in future professional careers.

- d. Contribute to the extant Literature regarding the utility of visual metaphor by vocational students, providing conclusions and recommendations for practice of interest to colleagues involved in developing students' reflective processes and PDP.

Publication 6 Dissemination

The broader public domain contribution to practice was made at the:

- a. BAFA Conference SIG Education, Manchester Metropolitan, 2015.
Presentation: Visual Metaphors in Accounting Education ('Say what you See')
Accounting students' perceptions of using Visual Metaphors as part of Personal Development Planning: An exploratory case study.
- b. University of Winchester Learning and Teaching Conference, 2015.
Presentation: Visual Metaphors in Accounting Education ('Say what you See' - Accounting students' perceptions of using Visual Metaphor as part of Personal Development Planning: An Exploratory Case Study.
- c. Contribution as a case study in the textbook "*Constructivist Approaches and Research Methods*" (Denlicolo, Long, & Bradley Cole, 2016, pp. 177 – 178).
- d. Paper 6 was published as a practical example of the educational use of visual metaphor in Accounting Education in the special edition devoted to visual methods (Accounting Education, 27(6), 2018).
- e. Publication 6 has been cited in **19** other journal articles.

Publications 5 & 6 Summary

The studies, evaluated using mixed methods, and leading to Publications 5 & 6, were based on learning innovations directed at students' pedagogic, cultural, personal development and communication practices. The PFA development was a product of the Academic and Professional Skills (APS) Module. The introduction of visual metaphors supported students' PDP skills development, also embedded in the APS Module designed to target improving students' metacognitive skills, personal development, assessment, and personal reflection.

CHAPTER 8 – A REFLECTION ON THE PUBLISHED RESEARCH PROGRAMME

Introduction

This Submission presents six publications, of which five evaluate pedagogic innovations original to the Faculty with value for the wider academic community. Furthermore, the practical innovation studies were integrated into the period's prevailing but evolving instructional regime (lectures, tutorials and formal summative assessments defined by institutional validation). This Chapter reflects on this research programme of learning innovations from a Constructivist perspective, the exploitation of ICT and the utility of evaluating innovations based on capturing participants' perceptions.

Constructivist Perspectives

The theories of Constructivism and Social Constructivism underpin the research presented in this Submission. Constructivism infers complex, coordinated cognitive processes for an individual's development and learning. It is postulated that learning occurs in the context of what is already known and where new knowledge is accommodated within existing knowledge, experience, and cultural framework. The implication is that learners are not passive recipients of knowledge and experience but are sentient individuals, constantly reacting to a dynamic social world and constructing unique cognitive landscapes consciously and unconsciously. In comparison, the Theory of Social Constructivism postulates social experience and interaction as the core contributors to cognitive development and behaviour driven by interactions with others (teachers, academic and social peers, parents, and social communities). The implication is that socially organised collaboration and group activities provide a robust basis for student engagement and learning. Given the described ontology and epistemology of accounting (Chapter 2), accounting students need to understand and operate not only the technical "means-end" chain of accounting and financial processes but develop complex interpretative and judgemental skills in preparation for the reality of employment.

Publications 1 and 3 describe a meaningful, change programme of blended learning innovation to produce a coherent and reliable learning environment to deliver (from 2013) a revised set of more student-centric learning modules. The establishment of a stable and, above all, evolving blended learning environment provided a platform for innovative constructivist approaches with the:

- a. Experimental pedagogic trial of social media (Twitter) which explored potential uses of this medium in the context of the broader use of social media. Publication 4 exposed cautionary lessons (Osgerby & Rush, 2015, pp. 346-347), restricting the future

pedagogic application of Twitter in the Accounting Programme and contributing general lessons about the pedagogic use of social media.

b. Development of PFA (Publication 5) allows students to integrate knowledge and skills developed progressively in discrete learning modules over an extended period and assess students' attainment against programme level outcomes (Appendix 4). This innovation has been successful, and the application of PFA continues to evolve, e.g., the PFA methodology was exported to the Economics Programme. The Winchester PFA remains a practical example of good practice, and the institution continues to receive requests for further information. In the future, PFA offers the potential for cross-programme efficiencies using similar case studies or perhaps introduce scaled-up case studies requiring activity by multi-disciplinary student teams replicating industrial/commercial working practices.

c. Introduction of innovative learning techniques to focus on specific skills development, where using visual metaphor (Publication 6) is one example. Although this innovation was small in scale, the process challenged students to reflect widely with few limitations.

The evaluation of Blended Learning (Publication 3) provided experience using the focus group as a qualitative technique for gathering perception data. With an open-ended agenda, such discussions yielded a rich experiential grounded commentary from students. The collected material required a high level of analysis to find patterns of consensus views. Many students consider accounting to be a challenging subject, and the complexity of the material presented in the supporting LMS to provide an overall pedagogic structure can be intimidating. While core study content is now presented "just in time", many students do not access such online material before lectures or tutorials, which mitigates its pedagogic value. Furthermore, the timing and quality of contributions by academic staff to online learning resources by various academic staff were particularly disliked, which led to significant Faculty efforts to standardise the production of online learning materials.

One blended learning (Publication 3) technique was student authoring of "wikis" (literacy development) and distributing them around the student set as part of shared online collaboration (social constructivist approach). Students reported that shared wiki authoring was a beneficial practice. However, in focus groups, it was a surprise to find students reporting distrust of the work of their peers in online group work. Macfarlane (2022) discusses trust issues from the perspectives of competence, benevolence, integrity, and predictability as elements of relationships between students and institutions. However, the impact of students' distrust of other students' products may significantly influence the value of collaboration-

based activities (a critical component in Constructivist Theory), and requires further investigation.

Exploitation of ICT

A techno-pedagogic definition for this Submission considers ICT a transformational catalyst to facilitate student-centred learning and teaching, including developing supporting learning environments (after Palanisamy et al. 2020).

In the context of this massive use of ICT since 2000, it is unsurprising that the educational literature tends to assume students must be “digital natives” (Prentsky, 2001). Students will have grown up in a digital world with forecast characteristics such as multitasking abilities, preferring visual imagery and listening to podcasts rather than reading and writing, interacting with others online, social networking to define their community presence and utilise digital learning materials formally and informally (Kinash, Wood & Knight, 2013; Prentsky, 2001; Ross, 2014).

The educational literature is enthusiastic about students accepting, and even demanding, the use of social networking applications within the educational environment as part of the learning process (Buzetto-More, 2012; Selwyn, 2009). In parallel, there has been evolving and ever-increasing institutional capability and availability of ICT to support learning. The five publications presented in this Submission were designed to exploit institutional ICT support and the Internet on the premise that accounting students of the period would be knowledgeable and comfortable with using ICT (*particularly the Internet*) and be familiar with social media applications.

While most students appear to have an overall positive attitude about using ICT to support their studies, they report feeling inhibited by the amount of time to research and select relevant study material online and trying to judge its contributory importance. In the focus groups for blended learning, a significant subset of students reported being underconfident about their ICT skills and inexperienced in using ICT for educational purposes. Students recognised the importance of developing ICT knowledge and skills as significant components of preparing for future employment.

Students like online quizzes and instant feedback and recognise the value of the easily accessible structured learning resources providing them with a “safety Net” (Love & Fry, 2006). However, students reported difficulties managing the time for ICT-enabled work, being challenged by the amount of material returned by Internet searches, and identifying what was necessary. In addition, it was astonishing to find that many accounting students dislike developing and using spreadsheet models to support their studies. Exploring further, the

dislike of spreadsheets appeared rooted in problem analysis and modelling skills. As a result, additional support and guidance about spreadsheet development have been provided.

Another significant concern was collaboration activities where students rejected tutor monitored LMS online communication facilities and opted to communicate generally using available social media. The reason for this was unclear but possibly relates to students' familiarity with their social media practices.

This use of social media was a primary motivation for a study into Twitter's pedagogic use, and Publication 4 explores an immersive experimental trial. Twitter is seen as a fast, available convenient way of communicating, but students are acutely aware of its capacity limitations. Some of Twitter's proposed functions appear to have pedagogic value, e.g., polling, but students feel constrained and select other social media applications. The Twitter study was vital because it articulated the advantages and disadvantages of practical of its pedagogic use and developed a set of lessons for practice (Osgerby & Rush, 2015, p.341). However, the Twitter study was personally disappointing as the social media application was found to be time-consuming to use at a classroom level, requiring much planning for little observable pedagogic return. Without the encouragement of academics at an international BAFA conference, the evaluation and the lessons learned might never have been published.

Publications 1, 3 and 4 report direct examples of ICT and social media exploitation to address many teachers' perceived deficiencies in accessing and presenting learning resources and developing the learning environment (internet accessibility and collaborative work). However, despite much evidence about the competence of young people (students) with ICT and social media, students can be much less confident than expected in their ICT competencies, with their reactions to the pedagogic use of ICT exacerbating complex academic anxieties. The conclusion is that students require careful, individualised assessment of entry ICT skills with the opportunity to develop skills before participating in ICT-supported pedagogy.

Evaluating innovations based on the Perceptions of Participants

Innovative changes in educational practices generally have a critical trial and evaluation component which assesses suitability, transferability, scalability, and consideration of efficiency and sustainability before being adopted as standard methods. Likely development attributes include problem definition, literature review, application of pedagogic theory, analysis of learners' knowledge and skills requirements, detailed planning, resourcing, piloting and experimentation, risk management, exploitation of suitable technology, involvement of learners in the design process, validation, and obtaining institutional support. Some innovations, whatever the motivations, enthusiasm and efforts of participating teachers and students, will even fail (Kim, 2018) because such change may introduce students to

unacceptable challenges, demands and novelty; or may not deliver expected benefits. It is unlikely to see a published report about an innovation which has not been adopted, although the lessons learned would add to the overall body of knowledge (Ou, 2017, Feilzer, 2010).

The foundation of evaluation is to define likely outcome targets (See Chapter 2, Table 4) and evaluate benefits in actionable and practical terms. Learning outcomes may also need to be associated with broader departmental and institutional questions such as:

- a. Is an educational innovation worth its cost?
- b. Is the innovation sustainable?
- c. Can the innovation be adopted as standard practice?
- d. Can the innovation be shared with others?

It is a common practice in the literature to evaluate innovative learning (*content, organisation, process, products, benefits/determinants, and relationships*) using participants' perceptions. For example, the publications (1, 3, 4, 5, 6) report innovation evaluation studies based on students' perceptions and yield data of considerable variation, with positive, indifferent, confusing, contradictory, and negative attributes. Examining perception data can be frustrating, as there is always a feeling that something has been missed. The research programme migrated to mixed quantitative and qualitative methods to maximise understanding and assess the relative merit of their reported perceptions.

The challenge for this research programme has been categorising and understanding emerging perception data and looking for consensus patterns. Perceptions of events as mental images are derived "a posteriori" from experience. Clifton and Carrasco (2018) warn of challenges for researchers in measuring perceptions, mainly where they may be poorly formed and may vary over time. The volatility of students' perceptions is a factor that does not appear well understood. Aronson, Elliot, Wilson, and Akert (2014) warn that the prior experience of individuals (expectations) can disturb the constructivist perception-meaning-attribution processes and create a participant perception bias even before participating in innovation. Researchers also need to consider the effect of words, actions or the mere presence of other people and peers on respondents' thoughts, feelings, and attitudes when participating in follow-up surveys (Aronson, Elliot, Wilson & Akert, 2014). Students also exist in overlapping socially constructed environments that position their views. In this context, the challenge is obtaining truthful and valid student perspectives (Goldkhul, 2012; Kelly & Cordeiro, 2020; Parvaiz, Mufti & Wahab, 2016).

Similarly, evaluators should take care with assigning generalised consensus views to artificially created groups and communities based on biographical attributes such as age,

gender, and race/ ethnicity (Ou, 2017). The additional work overheads, extra supervisory attention, novelty, and the distraction of other academic commitments could also perturb students' perceptions of innovations. As carried out in the published studies, students' perceptions should be collected while participating in the innovation or as soon as possible once completed. Other human factors may impact students' responses to innovation, such as prior experience, emotional state, engagement with undergraduate study, the nature of the innovation itself, the quality of support from academic staff and the form of its evaluation.

However, in hindsight, restricting innovation evaluation research to only collecting "a posteriori" data was a limiting factor, although the peer reviewers for the submitted works did not identify this as a limitation. The issue is that perceptions capture "a posteriori" data and do not provide a baseline for understanding what has changed. In contrast, expectations are "a priori" perceptions with associated (could happen) probabilistic characteristics driven by assumptions, suppositions, and bias. Expectations and consequent perceptions are potent elements in how people think and behave. For example, when teachers expect their students to do well, they interact with them in ways that lead to their expectations being self-fulfilled (Rubie-Davies et al., 2010). From a constructivist temporal stance, students' "a priori" perceptions of their knowledge and skills and expectations about future innovations will likely position and colour their "a posteriori" perceptions.

In the search for consensus patterns about innovations, evaluators might assume that students with the same previous experience are likely to report common and consistent perceptions with some validity. However, the prior experience of individuals (generating expectations) may vary enough to disturb the meaning-attribution processes and create perception bias, even between similar individuals carrying out the same tasks leading to difficulties with interpretation (Aronson et al., 2014). Investigations of learners' prior experiences, consequential expectations, and use of this information collected from students appear uncommon in the literature. Requesting students to comment on their prior expectations and previous knowledge and skills after completing an innovation is flawed practice.

The idea of collecting "a priori" expectations is not new. As an illustrative digression, Parasuraman, Zeithaml, and Berry (1985), in their pioneering work on commercial Service Delivery Quality Theory, proposed the pairing of "a priori" expectations and "a posteriori" perceptions based on participants' experience as the basis for evaluating service quality. Service Quality Theory has strong parallels in the delivery of educational practices (albeit a form of complex "service provision" over time), which are delivered by institutions/ teachers/ staff ("suppliers") to learners/ students (as "customers"). The theory proposes that the sum of

positive and negative gaps between conscious and unconscious “a priori” expectations and “a posteriori” perceptions of actual service delivery would drive students’ (customers) levels of satisfaction and dissatisfaction. In this context, the delivery of innovative learning could have at least three perceptible states: “as designed”, “as documented”, and “as delivered”, creating a ballooning network of expectation-perception customer satisfaction variable pairs to analyse, particularly from a cause-effect perspective. Parasuraman, Zeithaml, and Berry (1988) developed SERVQUAL as a commercial multiple-item scale measuring consumer perceptions of service quality, but it was subject to some criticism in the literature.

The principle of collecting expectation and other “a priori” data should now perhaps be revisited as the starting point for understanding what has changed during a pedagogic innovation as the basis for improving context, understanding students’ “a posteriori” views, and so improving overall evaluation methodology. The challenge is deciding how and when to investigate students’ expectations before undertaking innovation to create the baseline for understanding changes. Future innovation evaluation studies will provide the opportunity to develop methodology further.

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APPENDIX 1**SUBMITTED WORKS IN THE PUBLIC DOMAIN**

Burgess, J. (2008). Is a blended learning approach suitable for mature part-time finance students? *Electronic Journal of E-Learning*, 6(2), 131-138.
<https://files.eric.ed.gov/fulltext/EJ1098715.pdf>

Marriot, P., Pogue, M., & Osgerby, J. (2010). An analysis of students' awareness of personal finance in higher education: A Welsh, English and Northern Ireland perspective. *International Journal of Management Education*, 9(1), 43-56. <https://doi.org/10.3794/ijme.91.298>

Osgerby, J. (2013). Students' perceptions of the introduction of a blended learning environment: an exploratory case study. *Accounting Education*. 22(1), 85-99.
<https://doi.org/10.1080/09639284.2012.729341>

Osgerby, J., & Rush, D. (2015). An exploratory case study examining undergraduate accounting students' perceptions of using Twitter as a learning support tool. *International Journal of Management Education*, 13(3), 337-348.
<https://doi.org/10.1016/j.ijme.2015.10.002>

Osgerby, J., Jennings, P., & Bonathan, A. (2018). Do students see the benefits? An exploratory study of undergraduates accounting students' perceptions of a programme focussed assessment International. *International Journal of Management Education*, 16(2), 327-339.
<https://doi.org/10.1016/j.ijme.2018.04.006>

Osgerby, J., Marriott, P., & Gee, M. (2018). Students' perceptions of using Visual Metaphor as part of Personal Development Planning: An exploratory case study of accounting students. *Accounting Education*, 27(6), 570-589. <https://doi.org/10.1080/09639284.2018.1523735>

Publication Submission 1

Type	Journal Paper.
ORCID	https://orcid.org/0000-0002-8261-4481
Title of Work	Burgess, J. (2008). Is a blended learning approach suitable for mature part-time finance students? <i>Electronic Journal of E-Learning</i> , 6(2), 131-138. https://files.eric.ed.gov/fulltext/EJ1098715.pdf <i>(Note: Burgess is Osgerby maiden name)</i>
Abstract/Preface	Blended learning is a pedagogy that is sometimes heralded as the answer to some of the problems which part time students face. Creating a module for part-time students with some e-learning elements is time consuming and resource intensive. Therefore, it must be demonstrated that the investment in such innovations will benefit the students and create wider learning opportunities in the most effective manner. An investigation has been conducted which has looked at the learning needs of part-time finance students at The University of Winchester to see whether a blended approach would have benefited their studies. The results of this investigation have been used as the basis for developing the course to allow a more blended style. This paper attempts to outline how the course was designed and to carry out a preliminary analysis of the use of blended learning for part-time mature finance students
Keywords	Blended-learning, finance, part-time, mature-student, e-learning

Publication Submission 2

Type	Journal Paper.
ORCID	https://orcid.org/0000-0002-8261-4481
Title of Work	Marriot, P., Pogue, M., & Osgerby, J. (2010). An analysis of students' awareness of personal finance in higher education: A Welsh, English and Northern Ireland perspective. <i>International Journal of Management Education</i> , 9(1), 43-56. https://doi.org/10.3794/ijme.91.298
Abstract/Preface	This study measured the personal financial awareness, budgeting capabilities, levels of debt and part-time working hours of a sample of first year undergraduate students at three UK business schools and provided a contribution to understanding the financial challenges faced by students in higher education in the UK. The study, which gathered facts and perceptions from students attending different institutions use a questionnaire to gather data. The study illustrates ways of gathering, analysing, and presenting a large quantity of student perception and response data.
Keywords	Blended learning, finance, part-time, mature- student, e-learning

Publication Submission 3

Type	Journal Paper.
ORCID	https://orcid.org/0000-0002-8261-4481
Title of Work	Osgerby, J. (2013). Students' perceptions of the introduction of a blended learning environment: an exploratory case study. <i>Accounting Education</i> . 22(1), 85-99. https://doi.org/10.1080/09639284.2012.729341
Abstract/Preface	Virtual Learning Environments (VLE) provide the opportunity to deliver blended learning approaches that combine mixes of Information and Communications Technology (ICT) with various delivery methods and media. In 2008 and 2009, the University of Winchester in the UK redesigned a variety of accounting and financial management modules for presentation in a blended learning environment. An exploratory, qualitative case study investigated students' perceptions of the new approach. Through focus groups, students reported favourably on the blended learning approach and the views of students correlated with previous research, although there were some contrary findings. Focus groups raised issues concerning students' expectations, competence, and engagement. Resources and institutional practices were identified as factors in students' attitudes towards blended learning. Issues about communication, student interaction and collaboration also emerged. Finally, some practical lessons from this case study are proposed.
Keywords	Accounting education, blended learning, focus groups, virtual learning environment, students' perceptions.

Publication Submission 4

Type	Journal Paper.
ORCID	https://orcid.org/0000-0002-8261-4481
Title of Work	Osgerby, J., & Rush, D. (2015). An exploratory case study examining undergraduate accounting students' perceptions of using Twitter as a learning support tool. <i>International Journal of Management Education</i> , 13(3), 337-348. https://doi.org/10.1016/j.ijme.2015.10.002
Abstract/Preface	The aim of this exploratory case study is to investigate the perceptions of undergraduate accounting students using Twitter as a learning support tool. The literature suggests the use of Twitter supports a range of communication functions as well as pedagogic functions. Although there have been few studies, the educational literature is generally positive about the use of Twitter, whereas there is an emerging non-educational literature about the operational aspects of Twitter which provides evidence of potential limitations in its educational use. This study offered students a range of experiences using Twitter as a learning support tool and examined their experiential perceptions. Overall, this study demonstrates the relatively complex perceptions of accounting students about using Twitter. It is concluded that while Twitter has some communication and pedagogic potential, it has limitations and confusing operating dynamics. Some unpredictability in students' motivation and varying support for its use should be expected.

Publication Submission 5

Type	Journal Paper.
ORCID	https://orcid.org/0000-0002-8261-4481
Title of Work	Osgerby, J., Jennings, P., & Bonathan, A. (2018). Do students see the benefits? An exploratory study of undergraduates accounting students' perceptions of a programme focussed assessment International. <i>International Journal of Management Education</i> , 16(2), 327-339. https://doi.org/10.1016/j.ijme.2018.04.006
Abstract/Preface	Degree programme modularisation is popular to develop degree pathways, student choice and economic use of resources. Modularisation has been criticised for its potential to create disjointed learning environments and assessment limitations. Programme Focussed Assessment (PFA) describes an assessment process based on measuring students' attainment of multiple programme level learning outcomes. While the literature describes benefits associated with PFA such as improving student satisfaction, student confidence, assessment validity, pedagogy, feedback, student reflection and motivation, there is relatively little research of students' perceptions about PFA. This paper reports on an exploratory study which investigated the perceptions of students undertaking PFA at the end of Year 1 of an Accounting and Finance Degree. The study found students had positive perceptions about some of the claimed benefits of PFA. However, other findings were more ambiguous. The paper examines the findings from students' and institutional perspectives and concludes with a set of recommendations for practice.
Keywords	Programme Focussed Assessment; students' perceptions

Publication Submission 6

Type	Journal Paper.
ORCID	https://orcid.org/0000-0002-8261-4481
Title of Work	Osgerby, J., Marriott, P., & Gee, M. (2018). Students' perceptions of using Visual Metaphor as part of Personal Development Planning: An exploratory case study of accounting students. <i>Accounting Education</i> , 27(6), 570-589. https://doi.org/10.1080/09639284.2018.1523735
Abstract/Preface	This UK based exploratory case study explores the perceptions of accounting students using visual metaphor to support personal development planning (PDP). The requirement within PDP for students to reflect on their skills and knowledge and to evaluate, visualise and communicate their development and achievement needs is demanding. Students find the use of visual tools offers them the time, flexibility, and functionality to explore, imagine, structure, interrelate and communicate the products of their reflections as part of the PDP process. The use of imagery in accountancy is growing with professional accounting bodies taking an increasing interest in the use of visualisation. The application of visual metaphor provides undergraduate accounting students with a valuable early experience of using iconography for technical information presentation. The findings suggest that students perceive the technique of visual metaphor as a stimulating exploration of their personal goals that enhanced their engagement in the reflective PDP process.
Keywords	Visual metaphor, accounting education, personal development planning, PDP, students' perceptions

APPENDIX 2

ETHICAL POLICY CONSIDERATIONS

Research at the University of Winchester is subject to institutional Ethics Policy and associated procedures. Scrutiny of proposed research is usually carried out either at the Faculty or University level. Before any research is approved, the researcher must submit an appropriate ethics form, identifying if ethics review and approval is needed. Ethical approval was sought at the Faculty level as the research programme involved living human participants (university students).

After May 2018, researchers had a responsibility to comply with the General Data Protection Regulation (GDPR) 2018, which provided the lawful basis for undertaking the research studies as tasks in the public interest; the use of the data was credible and collected for the public good. Following GDPR, a researcher must keep any data collected safe, research subjects informed of any changes to the use of their data and report any breaches.

However, the bulk of the research was carried out prior to introducing the GDPR but was consistent with it. The research conformed to the following policies.

- a. Research Design. Before starting any research projects, the researcher completed an ethics form, and ethical approval was obtained before proceeding. Publication 2, which reviews students' financial awareness, was a collaborative project with the University of Glamorgan. The researcher completed the ethics scrutiny at Winchester, and the paper's co-authors completed the respective ethical signoffs at the other universities.
- b. Data Collection.
 - (1) Participation in the research studies was voluntary. The researcher explained to students that they would not be disadvantaged if they did not participate.
 - (2) Participants were informed about the purpose of the research, the nature, scope, and the data collected and how long the data would be stored.
 - (3) Participation was acknowledged using a signed consent form. Signed consent forms and completed paper-based questionnaires were stored in university offices in locked filing cabinets.
 - (4) The researcher explained how the data would be stored, the right to withdraw from studies, and how the researcher would present and publish the findings from the work.

c. Data Analysis.

(1) To respect the privacy of the research participants (and to preserve anonymity), each participant was allocated a unique serial number (for data processing reasons). When carrying out the research, students' names were not collected. Students could record their student numbers (pseudonymised data) on the paper-based questionnaires, but this was optional. Students' comments were listed against anonymous identifiers when recording conversations in focus groups.

(2) Transcriptions and survey data were stored in a password-protected electronic file.

(3) Data was used for its original purpose and analysed in a way that is fair and avoids misrepresentation.

(4) Participants were invited to identify with an age group and gender. No sensitive data about participants' race, religion, health, sex life or sexual orientation was collected.

d. Reporting Findings. Findings were reported accurately and in a way that respected the privacy of the participants and the University involved.

Suggestions from ethics officers reviewing the ethics approval forms were applied to the research plans. For example, a request was made to run the second Blended Learning project with a control group, as two groups were concurrently studying the Financial Management module. This request was denied as offering one group a potentially improved learning experience would be unethical.

This Submission refers to literature published in the public domain. Finally, the Submission does not refer to any individual in any way that provides identification.

Ethical approval was sought and granted for this Context Submission using Form 1 Triage and Form 2 Self Declaration documents copied below.

FORM 1



UNIVERSITY OF
WINCHESTER

ETHICS FORM 1

WHAT LEVEL OF REVIEW DO I NEED?

GUIDELINES

This form is for staff and doctoral students. It will help you identify the level of review needed for your project. Before completing it, you need to:

1. Read *The University Research Ethics Policy*.
2. If you are a student, discuss the ethical aspects of your project with your supervisor.

It is your responsibility to follow the University's Policy on the ethical conduct of research and to follow any relevant academic guidelines or professional codes of practice pertaining to your study when answering these questions.

The questions and checklist in this proforma are intended to guide your reflection on the ethical implications of your research. Explanatory notes and further details can be found in the Policy document.

SECTION 1

DETERMINING WHETHER YOU REQUIRE ETHICS REVIEW

YOUR PROJECT
Project title: Context statement for a PhD by publication entitled 'Developing and evaluating s innovations to improve learning outcomes for higher education accounting students'.
Your name: Julia Osgerby

1.	Is the proposed activity classified as Research or Audit /Service Evaluation or similar?	
	<input checked="" type="checkbox"/> Research	<input type="checkbox"/> Audit or Service Evaluation
	<p><i>Use the Policy to help you answer this question. If the proposed activity meets the definition of research (see the policy), CONTINUE.</i></p> <p><i>If the activity is an audit or a service evaluation, STOP. You do not need to seek ethics approval, but you do need to formally register your project with UREC, along with a project outline. To do this complete Form 2.</i></p> <p><i>If you are unclear what type of activity you are undertaking, please refer to the Policy for additional types.</i></p>	

2.	Does the research involve living human participants, human samples or data derived from individuals who may be identifiable through the data collected?	
	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	<p>Use the Policy to help you answer this question.</p> <p>If you answer NO, SKIP to QUESTION 6 and CONTINUE.</p> <p>If you answer YES, CONTINUE.</p>	
3.	Is the research being conducted for a medicinal purpose?	
	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<p>Use the Policy to help you answer this question. See Appendix 2 - FAQs and definitions.</p> <p>If you answer YES, and think your research comes under the definition of 'for a medicinal purpose,' it will need to be scrutinised by the Committee. Please email the Committee Chair (ethics@winchester.ac.uk) for further guidance on what to do.</p> <p>If you answer NO, CONTINUE.</p>	
4.	Does your research require external ethics approval or review?	
	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<p>For example, from the NHS or another overseeing body. Use the Policy to help you answer this question.</p> <p>If you answer NO, CONTINUE.</p> <p>If you answer YES, you need to formally register your project with UREC, along with the relevant external ethics approval. To do this complete Form 2.</p>	
5.	Is the project underway and, the researcher or PI, has moved institution to Winchester?	
	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<p>If you answer YES, please read the following:</p> <p>If the research began when the PI was employed at another institution but has subsequently moved to Winchester, and the project has previously been subjected to ethics scrutiny at that institution, then it need not go through ethics review again. The outcome of ethics review by that institution should be communicated to UREC for formal recording. To do this complete Form 2 and include evidence of the previous ethics approval.</p> <p>HOWEVER, if there have been significant changes to the original research design which have ethical implications or recruitment of a cohort of participants will be undertaken through Winchester, then the project will require ethics review and you should apply for approval, CONTINUE.</p> <p>If you answer NO, CONTINUE.</p>	
6.	Is the research collaborative?	

	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	<p>If you answer YES:</p> <ul style="list-style-type: none"> • where the Principal Investigator (PI) of the research is located at another institution, it is their responsibility to seek ethics approval, including partner research sites. The outcome of ethics review by that institution should be communicated to UREC for formal recording. To do this complete Form 2 and include evidence of the previous ethics approval. • where the PI is located at Winchester, then the project will undergo scrutiny as per Winchester's Ethics Policy, CONTINUE. <p>If you answer NO, CONTINUE.</p>	
7.	Is the research being conducted in another country?	
	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	<p>If you answer YES, please read the following:</p> <p>Where a project is conducted in another country, the researcher should consider if it is possible to obtain ethics review by a local research ethics committee or other relevant body. The outcome of such a review by that institution should be communicated to UREC for formal recording, along with a project outline. To do this complete Form 2.</p> <p>If this is not possible, the project should be reviewed by the University of Winchester, either at Faculty level or Committee depending on the nature of the proposed work, so CONTINUE.</p>	
8.	Does the research involve the use of documentary material(s) for analysis - for example artifacts, papers, historical records, literary works or documents in a public or private archive?	
	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	<p>Note: Documentary material does not include academic papers or other 'building block' literature in the public /academic domain which is used to inform the research context or rationale for the study. Instead, the documentary material would be the 'data' for the study, therefore literature reviews or literature critiques are not considered documentary research.</p> <p>If you answer YES, you need to formally register your project with UREC, along with a project description. To do this complete Form 2. Where materials are in a private archive or closed collection, please include details of the nature of the private archive /closed collection and provide evidence of permission to use this material for research purposes. Please also consider if there may be outcome ethical implications e.g. the subject matter may have a negative impact on those still connected to the materials.</p>	
9.	Does the research involve live vertebrate animals?	
	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	<p>If you answer NO, CONTINUE.</p> <p>If you answer YES, you need to formally register your project with UREC, along with a copy of the relevant licence (if required). To do this complete Form 5.</p>	

10.	Does the research involve environmental interventions?
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	<p><i>If you answer NO, CONTINUE.</i></p> <p><i>If you answer YES, you need to formally register your project with UREC, along with a copy of the relevant licence (if appropriate). To do this complete Form 2</i></p>
11.	Does the project pose any potential or actual conflict(s) of interest for the researcher and /or stakeholders?
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	<i>If you answer YES, please ensure you provide information on the form you complete.</i>
12.	Does the data you will collect contain <i>any</i> information that could be linked back to participants or that might identify them (e.g. name, address, photo, voice, email)?
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	<p><i>If you answer NO, you need to formally register your project with UREC. To do this complete Form 2.</i></p> <p><i>If you answer YES, CONTINUE.</i></p>

☞ Reaching the end of these questions, **either** you will have been directed to complete a specific additional form **or** you should continue to section 2.

If you are still unsure whether you need ethics review or not, please re-read The Policy and email your query to ethics@winchester.ac.uk with details of your project.

SECTION 2

DETERMINING THE LEVEL OF ETHICS REVIEW REQUIRED

	<i>Please mark with an <input checked="" type="checkbox"/> as appropriate</i>
1.	<p>Does the research involve individuals who might be considered vulnerable?</p> <p><i>For example: vulnerable children, over-researched groups, people with learning difficulties, people with mental health problems, young offenders, people in care facilities, including prisons. For a note on research with children, see Appendix 2 of the Policy.</i></p>
2.	<p>Does the research involve individuals in unequal relationships e.g. your own students?</p> <p><i>Please note:</i></p> <p><i>1. students recruited via SONA are not considered 'your own students.' If you intend to recruit widely across the University or your Faculty (e.g. through snowball sampling or a mail shot) you do not need to consider such students as your own, even if some</i></p>

	<p><i>participants may be students you are directly involved with. Only tick "yes" if you are targeting your own students specifically.</i></p> <p>2. <i>if you are an undergraduate or postgraduate student carrying out research with children in either a school or early years setting, these DO NOT come under the category of your 'own students.'</i></p>		
3.	Will it be necessary for participants to take part in the study without their knowledge and consent at the time? <i>For example: covert observation of people in non-public places, use of deception. See Appendix 2 of the Policy.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.	Will the study involve discussion of sensitive or personal topics? <i>For example: (but not limited to) participants' relationships, emotions, sexual behaviour, experience of violence, mental health, gender, race / ethnicity status or experience, political or religious affiliations. Please refer to the Policy.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.	Is there a risk that the highly sensitive nature of the research topic might lead to disclosures from the participant concerning their own involvement in illegal activities or other activities that represent a threat to themselves or others which may need onward reporting? <i>For example: sexual activity, drug use, illegal activities or professional misconduct.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6.	Might the research involve the sharing data or confidential information beyond the initial consent given?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7.	Might participant anonymity be compromised at any time during or after the study? <i>For example: will the research involve respondents using the internet, social media, or other visual /vocal methods where respondents may be identified?</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8.	Is the study likely to induce severe physical harm or psychological distress?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9.	Does your research involve tissue samples covered by the Human Tissue Act (2004)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10.	Is there a possibility that the safety of the researcher may be in question? <i>For example: research in high-risk locations or with high-risk groups.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11.	Does the research involve creating, downloading, storing or transmitting material that may be considered to be unlawful, indecent, offensive, defamatory, threatening, discriminatory or extremist? <i>If you answer YES to this question, you must also contact the Director of Library and IT Services, who must provide approval for the use of such data.</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Answering **NO** to **all** these questions means your project is eligible for Faculty level ethics review. You now need to complete Form 3.

Answering **YES** to **any** of these questions means your project will require Committee ethics review. You now need to complete Form 4.

FORM 2
**UNIVERSITY OF
WINCHESTER**
ETHICS FORM 2**REGISTERING MY PROJECT****GUIDELINES**

This form is for staff and doctoral students, and you will be completing it as a result of working through Form 1. Form 1 has indicated your project does not need ethics review, but you do need to register your project with UREC. Before completing this form, you need to:

3. Re-read *The Research Ethics Policy*.
4. If you are a student, confirm your supervisor agrees that ethics review is not needed for your project.

It is your responsibility to follow the University's Policy on the ethical conduct of research and to follow any relevant academic guidelines or professional codes of practice pertaining to your study when answering these questions.

The questions in this form are intended to gather information to record your project.

If any aspect of your project changes during the course of the research, you must notify the Chair of UREC.

SECTION 1

YOUR DETAILS	
1.1.	Your name: Julia Osgerby
1.2.	Your department: Department of Economics, Accounting and Finance
1.3.	Your Faculty: Business and Digital Technologies
1.4.	Your status:
	<input type="checkbox"/> Undergraduate Student <input type="checkbox"/> Staff (Professional Services)
	<input type="checkbox"/> Taught Master <input type="checkbox"/> Staff (Academic)
	<input checked="" type="checkbox"/> Research Degree Student <input type="checkbox"/> Other (please specify below)
1.5.	Your university email address: j.osgerby.21@unimail.winchester.ac.uk
1.6.	Your telephone number: 01962 827510

	<u>For doctoral students only:</u>
1.7.	Your degree programme: PhD by works in the public domain
1.8.	Your supervisor's name: Dr Jorge Bruno
1.9.	Your supervisor's department: Digital Technologies
1.10.	Your supervisor's email: Jorge.Bruno@winchester.ac.uk
SECTION 2	
SPECIFIC PROJECT RECORDING REQUIREMENTS	
	Based on your answers from Form 1, select the relevant category for your research:
13.	<input type="checkbox"/> My project is Audit or Service Evaluation.
14.	<input type="checkbox"/> My project required external ethics review or approval. <i>In your project description in the next section, please include a copy of the relevant external ethics approval.</i>
15.	<input type="checkbox"/> My project involves the use of documentary material(s) for analysis - for example artifacts, papers, historical records, literary works or documents in a public or private archive. <i>In your project description in the next section, please indicate the nature of the contract with the owner /curator of the documentary material and provide evidence of the permission to use this material for research purposes if not in the public domain.</i>
16.	<input type="checkbox"/> My project involves environmental interventions. <i>In your project description in the next section, please indicate the procedures in place for the restoration of the site on completion of the research.</i> Licence details (if appropriate):
17.	<input type="checkbox"/> My project is collaborative, and the Principal Investigator (PI) is based at another institution. <i>Please include details of the ethics approval /opinion given with this form.</i>
18.	<input type="checkbox"/> My project is underway, and I have moved institutions to Winchester. <i>Please include details of the ethics approval /opinion by original institution.</i>
19.	<input type="checkbox"/> My project is being conducted in another country and I have obtained approval there. <i>Please include details of the ethics approval /opinion by a local research ethics committee or other relevant authority.</i>

20.	<input checked="" type="checkbox"/> My project does not involve live vertebrate animal(s). <i>Please include a description of /identify the animal(s) or insects involved.</i>
21.	<input checked="" type="checkbox"/> My project is not gathering any data or information that could be linked back to participants or that might identify them (e.g. name, address, photo, email). <i>Please ensure you fully describe the nature of the data you will collect.</i>
IF NONE OF THESE APPLY, YOU NEED TO COMPLETE FORM A DIFFERENT FORM.	

SECTION 3

YOUR PROJECT	
2.1.	Project title: Context statement for a PhD by publication entitled 'Developing and evaluating selected pedagogic innovations to improve learning outcomes for higher education accounting students.
2.2.	Start date: April 2022
2.3.	Expected completion date: September 2023
2.4.	Expected location of data collection: N/A (e.g. school, workplace, public place, University premises etc.)

PROJECT DESCRIPTION

This Form has been completed to support the release of this Context Statement (the Submission) for assessment.

This Submission presents a research programme in the period 2006-2018 which developed and evaluated practical pedagogic innovations to improve learning outcomes for undergraduate Accounting Students at the University of Winchester.

The Submission discusses the ontology (assumed nature of the reality of Accounting), epistemology (the origins, skills, and knowledge requirements of the Accounting Programme) and the reasoning for the methodological approaches adopted for evaluating the innovations.

Five evaluated learning innovations and one fact finding survey as published in peer-reviewed professional journals are presented. The five learning innovations implemented in the Business School of the University of Winchester were Blended Learning (Publications 1 & 3), the use of Twitter as a social-media application in the classroom (Publication 4), practical Programme Focussed Assessment (Publication 5), and visual methods for Personal Development Planning (Publication 6). A parallel study which examined the level of financial awareness of business students in the UK is also submitted as it contributed to the redevelopment of the undergraduate Accounting Programme (2013), which is the context of the innovation pro-gramme.

Innovative changes in educational practices generally have a critical trial and evaluation component which as-sesses viability and validity before adoption as standard methods. The five learning innovation studies vary in scope, size, aims and ambition, resourcing, expected impacts, sample size and period of implementation.

Overall, the implicit general research questions for Publications 1, 3, 4, 5, & 6 are:

- a. Do the specific learning innovations deliver sustainable pedagogic benefits in actionable and practical terms? (Kelly & Cordeiro, 2020; Ovbiagbonhia et al., 2019; Redding et al., 2013)

- b. Can the innovations be scaled up and exported internally and externally? (Salmon, 2014; Smith, 2012).
- c. What are the lessons for practice?

The published studies are described with a background, a comparison with other practitioners, a digest of the methodology and findings, an appreciation of originality and contribution and an outline of how the studies were disseminated to the academic community. The Submission concludes with reflections about:

- a. Researching and evaluating educational Innovation from a constructivist Perspective.
- b. Exploiting ICT in educational innovations.
- c. The methodology of using students' perceptions to evaluate pedagogic innovations.

SECTION 4

DECLARATION

I have read and understood the University of Winchester Research Ethics Policy.
I understand my responsibilities as a researcher as described in the University of Winchester Research Ethics Policy.
I declare that the answers above accurately describe the research as presently designed and that a new application will be submitted should the research design change in a way which would alter any responses given in Form 1 or here.


Researcher's signature: Julia Osgerby

Date: 08.06.2023

For **students** (masters, postgraduate) only:

The student has the skills to carry out the proposed research. I undertake to monitor the student's adherence to the relevant research guidelines and codes of practice.



Supervisor's signature: 

Date: 15-06-2023

Please submit this form along with Form 1 to the University Research Ethics Committee via email to

ethics@winchester.ac.uk

APPENDIX 3

PROFESSIONAL CAREER PROFILE AND RESEARCH JOURNEY

Personal Career and Experience

I am a qualified management accountant, and my early professional work was carried out in a large National Health Service Trust. I was responsible for accounting and reporting large multi-million-pound budgets covering human resources, nursing, and drug usage. In 2006, I was offered the post of Accounting Lecturer at the University of Winchester. I have taught various undergraduate and postgraduate subject modules within the Business School during my academic career. Therefore, I am a knowledgeable and experienced teacher of Accounting and Finance. I was Programme Leader for the Accounting Programme (2012-2016) and the Economics Programme (2016 - 2017). I was Head of Faculty Academic Development (2018) and Head of Department (Law, Economics, Accounting and Finance) (2018-2021). In September 2022, I was appointed an Associate Dean (Academic Experience and Student Outcomes) for the Faculty of Business and Digital Technologies at the University of Winchester.

Overall Contribution to Practice and Research Journey

In 2007, I became interested in using research-based teaching techniques while undertaking a Post Graduate Certificate in Learning and Teaching in Higher Education (PGCLTHE). As part of the PGCLTHE programme, I investigated the problems of the part-time Financial Management Programme undertaken by mature students already in commercial roles. This part of the Programme was a neglected institutional area where students displayed problems balancing work, study, and social life demands. The findings of the paper were well received at the British Accounting and Finance Association (BAFA) Special Interest Group (SIG) Education Conference (2013), where the work was awarded the accolade of the best-emerging conference paper. Research-based teaching influenced my approach to the 2013 re-validation of the undergraduate Accounting Programme at the University of Winchester and, as Team Leader, of the curriculum design and validation of a new Economics Undergraduate Programme. I have also led many educational projects of varying scales, some of which have been evaluated formally and published in peer-reviewed journals.

To support curriculum development, I have led the development of innovative teaching approaches to promote student engagement from a constructivist perspective. I led a small academic team in delivering an employability skills module which included Personal Development Planning (PDP), and introduced, as part of reflective development, the use of metacognitive techniques, for example, visual metaphor methods.

As an experienced teacher, I am attracted to the constructivist paradigm because I have observed the curiosity of students, the organisation of their ideas, how they make connections and synthesise new ideas. Constructivism drives my practice and was central to the development of the research about Programme Focussed Assessment (PFA). The proposition is PFA, with its emphasis on programme level learning outcomes, provides a better assessment of students' capabilities and fits well with the constructivist learning paradigm. In discussion with colleagues, I saw PFA could be a possible way of reducing the amount of students' assessment and take advantage of the potential pedagogic benefits described in the literature.

Rationale for Undertaking the Doctorate

It has been a personal aspiration to complete a doctorate and pursue an academic career. Whilst working as a lecturer at the University of Winchester, I assisted with and led several pedagogic research projects, some of which were the basis of papers published in international peer-reviewed journals. The general themes of this work were about investigating students' perceptions of various pedagogic innovations to support learning and promote student engagement. Unfortunately, since 2018, further research work has been on hold due to promotion to Head of Department (HoD) (2018), the Covid Pandemic (2020-2021), promotion to Associate Dean (Teaching & Learning) (2022) and then Acting Dean for two months (2023).

APPENDIX 4

ACCOUNTING PROGRAMME FUNCTIONAL KNOWLEDGE AND SKILLS CURRICULUM

This Appendix is an edited extract of the unpublished Accounting Programme Validation Document (APVD, 2013. pp. 4-12).

The aims of the Programme are to:

- Encourage, in students, a systematic and critical approach to the identification and analysis of solutions to problems by using the concepts of accounting, finance, investment and management.
- Develop students' knowledge and understanding of the inter-relationships between accounting, finance, investment, business, and management.
- Develop the capabilities of students to be future generators of sustainable value for business and society at large and to work for an inclusive and sustainable global economy.
- Develop students' capacity to apply the necessary skills to solve real life problems in an accounting, finance, investment, or management environment.
- Develop students' ability to receive, interpret and communicate financial information in oral, written, and other forms.
- Encourage, in students, flexibility, confidence and creativity in the way they deal with problems and relate to people and organisations.
- Enable students to become independent and collaborative learners.
- Provide an opportunity for students to undertake a period of supervised employment experience in a financial or accounting function thereby assisting in their personal development.
- Provide a foundation for a career in accounting or financial management and to show how the finance function in organisations is related to other functions.
- Produce graduates who possess the capacity for independent critical thinking, have functional skills and knowledge which can be drawn upon to cope with rapid change in the economic environment and promote vision, drive, and creativity in both personal and professional development.

On successful completion of the programmes, students will be able to demonstrate:

Knowledge and Understanding

1. An understanding of the contexts in which accounting operates in terms of the legal, ethical, social, and natural environment, the accounting profession, the business entity, capital markets and the public sector.
2. A knowledge and understanding of the main technical language and practices of financial accounting, management accounting, auditing and taxation for recognition, measurement, and disclosure purposes in a specified socio-economic domain.
3. A knowledge and understanding of the alternative technical languages and practices of accounting, e.g., alternative recognition rules and valuation bases, accounting rules followed in other socio-economic domains, alternative managerial accounting approaches to control and decision making.
4. The ability to record and summarise transactions and other economic events through the preparation, analysis and use of financial statements, financial ratios, and budgets, techniques of performance measurement and control. techniques of decision analysis. techniques of financial management and financial risk management.
5. A knowledge and understanding of the contemporary theories and empirical evidence in areas such as accounting and capital markets, accounting and the firm, accounting and the public sector, accounting and society and accounting and sustainability, together with and an ability to critically evaluate such theories and evidence
6. A knowledge and understanding of theories and empirical evidence concerning financial management, risk, and the operation of financial markets.
7. Develop the capabilities of students to be future generators of sustainable value for business and society at large and to work for an inclusive and sustainable global economy.
8. Develop students' awareness and understanding of the values of global social responsibility.

Cognitive Abilities

9. Capacity for critical evaluation of arguments and evidence.
10. Ability to analyse and draw reasoned conclusions from structured and/or unstructured problems from given and or self-generated data.

11. Ability to locate, extract and analyse data from multiple sources including the acknowledgement and referencing of sources.
12. Capacity for independent and self-managed learning.
13. Numeracy skills, including the ability to manipulate financial and other numerical data and to appreciate statistical concepts at an appropriate level.
14. Skills in the use of communications and information technology in acquiring, analysing, and communicating information.
15. Communication skills including the ability to present quantitative and qualitative information, together with analysis, argument, and commentary in a form appropriate to the intended audience.
16. Ability to work in groups and other interpersonal skills including oral/written presentation skills.

Other skills and attributes

17. Learning to learn and developing an appetite for learning, including that of managing own roles, responsibilities, and time in achieving objectives.
18. Working with and relating to others, by treating other values, beliefs, and opinions with respect. Interact effectively with individuals and groups and work effectively as a team member including leadership, team building and developing project management skills together with skills of effective listening, negotiation, persuasion, and presentation.
19. Applying communication and information technology, by learning to receive and respond to a variety of information, present information in a variety of visual forms that includes applying information technology for accounting applications.
Communicate in writing. participate in oral communication, e.g., the preparation and presentation of reports.
20. Solving problems, use of information sources, deal with a combination of routine and non-routine tasks. Create, evaluate, and assess a range of options together with developing the capacity to apply ideas and knowledge to a range of situations.
21. Applying numeracy and quantitative skills, with the development of personal initiative, attitudes of responsibility and systematic approaches to problem solving and project management, including data analysis, interpretation, and extrapolation.

22. Application of research skills to accounting issues, either individually or as part of a team for projects/dissertations/presentations. This requires familiarity with a range of data, research sources and appropriate methodologies.
23. Self-reflection and criticality including self-awareness, openness, and sensitivity to diversity in terms of people, cultures, business, and management issues.

Learning for the Workplace

For our graduates, the ability to reflect and to think critically is an important component of learning to learn. In the workplace, the ability to reflect affects professional behaviour, actions and judgement and the development of a reflective capacity is supported by the professional bodies. This development requires more than the cognitive skills gained from the skills based and experiences outside of higher education provide the context and relevance to what is learned and to how knowledge is applied. Throughout the programme external speakers from industry and the profession provide a real-world view of accounting and finance to all students. In addition to this, students are offered the option of undertaking a year-long, credit-bearing period of professional practice. The benefits to students of this experience include:

- significant relevant work experience.
- improved job opportunities on graduation.
- salaried work for a year.
- team working and development of interpersonal skills, confidence, and maturity.
- awareness of current developments in industrial and commercial environments knowledge gained which can be applied to final stage studies.
- exposure to the principles of effective career choice, job search and the application and selection process.
- development of a network of contacts that may be useful when the time comes to seek permanent employment – some students, of course, obtain positions as a direct result of the placement year.
- gaining relevant work experience which can be considered for inclusion as part of the employment experience necessary for professional body membership.

The programme conforms to the Learning, Teaching and Assessment Strategy of the University by providing:

- Challenging learning experiences for students.
- Motivated and qualified staff.
- Research inspired teaching.
- Assessment appropriate to aims and outcomes (see below).
- Strong ethos of supporting students in addition to university-based student support.
- Continuing monitoring of learning resources.
- Pedagogy based on guidance not prescription.
- Timely formative and summative feedback.
- Attention to employability (see above).

Agreement with the Framework for Higher Education Qualifications and the *QAA Code of Practice* is assured by the validation process and by the annual monitoring process.

In particular, the programmes have been designed to meet the requirements of the QAA Accounting Subject Benchmark Statement and the Code of Practice for the Assurance of Academic Quality and Standards in Higher Education: Section 9: Work-based and placement learning. In developing the module content and assessment pattern reference has been made to the professional accounting syllabi and the requirements of the professional accounting bodies, ACCA, CIMA, CIPFA and ICAEW. This enables students who meet the criteria for each professional body to apply for credit for prior learning in respect of a proportion of the professional examinations in each qualification. Graduates who choose to enter a training contract can thus benefit directly from their university studies and can be confident that their technical knowledge and professional skills are relevant to the profession.

Other reference points applied to the design of the Programme:

- University and National Student Satisfaction Surveys
- External Examiner Reports
- AMR/APE
- Faculty Strategic Plan.

APPENDIX 5

PUBLICATION 1: BLENDED LEARNING FOR PART-TIME STUDENTS QUESTIONNAIRE
(UNPUBLISHED RESEARCH ARTEFACT).

This is a copy of the questionnaire used with part-time students to evaluate the blended learning development in 2006.

UNIVERSITY OF WINCHESTER FINANCIAL MANAGEMENT			
MODULE			
STUDENT QUESTIONNAIRE			
<p>Now that you have completed the Financial Management Module you are in a position to help shape how it will be delivered in future. The following is a set of short questions that will only take you a few minutes to complete. Thank you for your help.</p>			
	Answer		
Q1. How old are you? (Nearest Year)		Years	
Q2. Gender?		M or F	
Q3. Are you currently employed in a management role?		Y/N	
Q4. Are you currently employed in a financial role?		Y/N	
Q5. Are you a part time student?		Y/N	
Q6. Where do you have access to the internet for educational purposes?	Tick		
Home			
Work			
University			
Local community facilities			
Other: Please state			
	Tick		
	High	Medium	Low
Q7. How do you assess your IT knowledge and skills?			
	Tick		
	More than once a week	More than once a month	Never
Q8. How frequently did you access the lecture material published on the VLE during your financial management studies?			
		Tick	
Q9. Have you had previous experience of e-learning (on line)?			
If 'Yes@ please explain – write text overleaf.			

Q10. Currently the subject of financial management is taught using lectures. Do you think any of the following methods would have suited you better?	Prefer	Satisfactory	Dislike	Previously experienced
Lectures				
Group work tutorials				
Classroom discussions				
Individual tutorials				
On-line discussion forums				
Self-study using worksheets and exercises				
In class study using computer based worksheets/exercises				
Self-study using computer financial exercises				
Using computer based learning packages				
Self-study using text books				
Using paper based programmed learning				
Directed reading				
Self-study using the VLE				
Use of distance learning materials				
Work based/experience learning				
Project work				
Use of real problems from the workplace				
Essay writing				
Seminar (<i>selected students present topics</i>)				
Simulations using financial models				
Developing financial models in a spreadsheet				
Links to other websites and further reading				
Computer based assessments				
The use of pre-course reading material				

Q11. Which of these factors have had the most negative impact on your learning as a part time student?	Please tick one		
	High Impact	Medium Impact	Low/Nil Impact
Lack of study time			
Trade off of 'social time' or 'family time'			
Accessibility to resources			
Lack of interaction with other students			
Travel distance/time			
Any other (<i>Please detail</i>)			

If you are willing to be contacted to discuss any other answers above, would you please provide your name and a contact method convenient to you.

APPENDIX 6

PUBLICATION 3: EXAMPLE BLENDED LEARNING SCALED UP CONTEMPORANEOUS FOCUS GROUP NOTES EXTRACT (UNPUBLISHED RESEARCH ARTEFACT)

Q	Agenda	FOCUS GROUP 1A- 3 Oct 2008 Financial Management Full Time Student Views (8 Students)
1	How often do they use the Internet?	In general - use every day.
2	Views about e-mails	Like to use emails. Find emails useful. See emails as a formal way of passing information (Check). Like to use for communication with lecturer. Like to use for communicating with each other.
3	Use University or privately owned equipment?	Use University and personal equipment.
4	What do they think about the standard of the University IT equipment and software?	Content to operate in XP, but there were Vista users (<i>5/8 students in focus group</i>). See as slow and find many units have broken down. Computer lab seems OK. Office 2007 not really required but see University System as old fashioned. University computers do not seem like their own personal computers. Do not like finding broken or inoperable workstations. Do not like hunting for working workstations. Students worry about compatibility between software versions. Students dislike having to make files compatible with University systems. Do not like the layout of pillars in the computer lab.
5	What is their general computer competence with Office software? (Use VISTA or Office 2007?)	Students used to computers from their school days. Brought up to use. Students expressed some minor concerns about skills.
6	What do they think about the Internet?	Much used. Some find it add to the overheads of producing work. Difficult to see what is important.
7	What is their basic competence with using Internet.	Students appear content.
8	What social networking sites do they use?	Several used Facebook for academic communications. Not first choice for academic communications. Business Management Group uses Facebook.

		Concerns about privacy. I student said had withdrawn from a social networking site.
9	Do they down load e-books?	Few students seem to have heard of the concept of e-books. Surprise! Almost no use.
10	What have they been exposed to in using the computer and other IT based resources to assist their learning at the University of Winchester?	1 student experienced IT based learning resources – not at this University. Like to use in own time. Under used. Face to face instruction preferred. Some experience of on-line quizzes. Prefer classroom questions with lecturer, but like the idea of fast feedback in Moodle. Felt did help them to learn. No experience of Wikis. Some experience of using forums. Liked seeing the work of others. Like to return to material on demand.
11	Do they like using computers to learn with?	Computer use in learning not particularly liked. Like to see computers intermixed with other media. Did not find that it made learning more complicated. Did not like reading from the screen (mixed views here) Do use Excel and like to set up formulae and liked to go through calculations that way. Useful to have immediate access during break time. Do not like the 'broadcast mode' of Moodle. Introduced a new question on distraction . <ul style="list-style-type: none"> • Students were not distracted by the computer in the teaching classroom. • Having a computer in front of them but not using it is frustrating. No everyone liked spreadsheets.
12	Do they use the internet to find about things they are interested in?	'Would' use Internet to go and find out about things.
13	What in their view would be the best way of improving the delivery of course learning materials?	Some would like to see more interactivity. Some would like to see short tasks with feedback (<i>not clear if this was incremental tasks?</i>). Some would like information depth getting behind the detail (an older student). Like repetition to ensure understanding. 1 student preferred self-study with a book and has never been involved in class quizzes.

		<p>Formative assessment.</p> <p>Consultation exercises.</p> <p>Activities followed by questions.</p> <p>See computers as supplementary not primary mode.</p> <p>Availability to examine websites during lessons in computer room – distracting.</p> <p>Would like to be able to speak to lecturer quickly.</p> <p>Very happy with forum style questions with answers that all can see.</p> <p>Like typed feedback - they can read it</p> <p>Liked e-comments on original document following e-submission. (Document uploading still being piloted)</p> <p>Clickers</p> <ul style="list-style-type: none"> • Liked clickers because they could see who understood and who did not understand things. • Bit gimmicky and would not want to use all the time. • Involved a learning curve on its use. <p>Quizzes</p> <ul style="list-style-type: none"> • Liked going on line and doing quizzes with immediate feedback. <p>Wikis</p> <ul style="list-style-type: none"> • Students would not necessarily rely on wikis. • Felt swamped by too many wikis – may be too much. <p>Journals</p> <ul style="list-style-type: none"> • Useful to find journals online (but University of Winchester access is ‘rubbish’.) • Too many journals links • Separate issue - need to teach more about how to use journals. • Don’t like group work on journals. • Want instructor input into journal reading. • Would prefer to see ... sentence was not completed.
14	Have they used Moodle (or the previous VLE)?	Nobody
15	What are their views about VLE and/or Moodle in helping them learn?	<p>Dislike of material in Moodle, but not updated.</p> <p>Dislike of inconsistent approach to Moodle within the Department.</p> <p>Did tend to use Moodle. Liked to go back to documents and do quizzes again.</p> <p>Some did not use it (Interviewer did not explore reasons why)</p> <p>Liked the mixture of material within Moodle.</p>

		Liked to go through spreadsheet models to see how they work and calculate
16	What are their views about e-learning e.g. missing classes and catching up using web based material	Like the availability to lecture notes (<i>Assume PowerPoint</i>). Like the recorded version of lectures (<i>depends on lecturer</i>). Where do you go to get the best out of it? (<i>Note sure what this meant</i>). Students did look at Moodle material when they missed classes.
17	What are their views about on-line submissions and assessments?	Liked idea of on-line submission. Lacked confidence in system to be available at critical submission times. Lacked confidence in 'on-line receipt system'. Would like marks typed into assignments. Would like comments typed into assignments.
18	Does the subject of Financial Management look more complicated because MOODLE is being used? (Is it a bonus or a burden?)	Did not get an answer to this!
19	Do they use Moodle for social networking?	Did not use Moodle for this task or any other sites like this.
20	Is there anything we missed out or did not get a chance to talk about?	Content with using EXCEL spreadsheets for simulations. Content and looked forward to experimenting with clickers. Desire 3 minute feed backs. Lack confidence about use of Wikis. Want to be able to contact tutors with questions. Like idea of recordings of lectures. Look forward to quizzes.

APPENDIX 7

PUBLICATION 4 TWITTER TRIAL QUESTIONNAIRE (UNPUBLISHED RESEARCH ARTEFACT)

USE OF TWITTER QUESTIONNAIRE							Feb-13	
<p>Your help is requested in completing this short anonymous questionnaire about the use of Twitter in your module. It should only take a few minutes to complete. There will be a follow up focus group - you will be invited to attend.</p> <p>Please just circle your answers. Cross mistakes out clearly. It will take less than 5 minutes</p>								
1	What is your gender?	M	1	F	2		01	
2	Do you live in University Halls of Residence?	Yes	1	No	2		02	
3	What is your Nationality?							03
4	Did you have a personal Twitter Account set up before starting the Module?	Yes	1	No	2		04	
5	Did you set up a new Twitter Account (Academic Twitter Account) for use in the Module as requested?	Yes	1	No	2		05	
6	Which Twitter Account(s) did you use for the module work? 1 = Personal Account Only, 2 = Academic Account Only, 3 = Used both	1	2	3			06	
Question	Using the scale please indicate how you use Twitter	Never	Not Often	Sometimes	Often	Continually		
7	I use Twitter for my social life.	1	2	3	4	5	07	
8	I have used Twitter before for academic purposes.	1	2	3	4	5	08	
9	I use Twitter to communicate socially with other students at this University.	1	2	3	4	5	09	
10	I use Twitter to support ideas swapping during group work.	1	2	3	4	5	10	
11	I use Twitter to communicate my thoughts about this module.	1	2	3	4	5	11	

12	I use Twitter to communicate my thoughts about the accounting course.	1	2	3	4	5	12
13	I use Twitter to communicate my thoughts about the University of Winchester.	1	2	3	4	5	13
14	I feel competent in using Twitter.	1	2	3	4	5	14
15	I would have liked to have practised use of Twitter more before using it for academic purposes.	1	2	3	4	5	15
16	I would have liked more tuition in the use of Twitter.	1	2	3	4	5	16
17	I feel that using Twitter has potential for helping with learning. Please explain your answer in the free text area at the end.	1	2	3	4	5	17
18	I am happy if other students see my Twitter responses projected on a classroom screen.	1	2	3	4	5	18
19	I would be happy to use Twitter when being tested.	1	2	3	4	5	19
20	I would have preferred to use the Learning Network rather than use Twitter.	1	2	3	4	5	20
21	I posted a link to a journal about stock costing - successfully.	1	2	3	4	5	21
22	I was discouraged in using Twitter because I did not want other students to see my work.	1	2	3	4	5	22
23	I do not always trust the value of the Twitter responses of the other students.	1	2	3	4	5	23
24	I was happy to post using Twitter.	1	2	3	4	5	24
25	I was content with the level of confidentiality and privacy in using Twitter for academic purposes.	1	2	3	4	5	25
26	I thought the discussion about 'First in - Last Out (FIFO)' was enhanced by the use of Twitter.	1	2	3	4	5	26
27	I would have been motivated to use Twitter if it would have earned me some marks.	1	2	3	4	5	27
28	I was discouraged in my use of Twitter by the attitudes of other students.	1	2	3	4	5	28
29	Using Twitter enhanced my learning.	1	2	3	4	5	29
30	Using Twitter is just a bit of a novelty.	1	2	3	4	5	30
31	There is a place for Twitter in fast communication about course/module matters.	1	2	3	4	5	31
32	It was useful to use Twitter to feedback to my Module Tutor and other students about how I thought the Module was progressing.	1	2	3	4	5	32
I am willing to take part in a focus group to discuss the use of Twitter. Tick Selection		Yes		No			

Please give some reasons why you like or dislike using
Twitter in the classroom.
Do you have any other comments about Twitter?
(Use the back of this page if you need more space.)

APPENDIX 8**PUBLICATION 4 TWITTER TRIAL EXAMPLE FOCUS GROUP AGENDA (UNPUBLISHED RESEARCH ARTEFACT)****TWITTER FOCUS GROUP AGENDA**

March 2013

GENERAL QUESTIONS

- Before attending the University of Winchester, had you used social networking sites such as Twitter/ Facebook?
- Had you used these social networking mediums for education purposes, if so how?
- Are you currently using social networking sites, if so which ones and how?

SOCIAL NETWORKING FOR (ACCOUNTING EDUCATION)

- Do you think there is scope to use social networking for accounting education?

PROMPTS

- What type of social networking is most appropriate, why?
- Is it more helpful to use a site that people use all the time-power comes from using it.

LEARNING NETWORK

- How do you use the University of Winchester Learning network?
- Why do you use other forms of social media communication rather than the LMS.
- Its Twitter useful?

ADMINISTRATION

- Explore students feeling about the administration.

EMPLOYABILITY

- Ask about Twitter as an employability skill.

COLLABORATION- do you use social networking to belong to a group/ academic work**TWITTER ASSESMENT**

- Explore how it might be used for assessment, if at all.

TWITTER SPECIFIC CHARACTERISTICS

- What do you think about the social networking site Twitter?
- Likes/ dislike.
- Twitter 140 characters – how does that limit you?
- Explore Novelty?

STUDENTS' PERCEIVED SKILLS LEVEL

- Previous experience of social media
- What seems complicated?
- Do they really know how to use Twitter?

VIEWS ABOUT TWITTER WITH GROUP WORK

- Inter-student work characteristics?
- Volume of material.
- Value of the work of others/ accuracy?
- Confidentiality issues.
- Idea of social presence.
- Twitter was useful to compare my answer with the other answers posted by other students.
- when to many things are posted by everyone, too much to read.
- Twitter in the classroom could be useful as you are able to get to know other students that you might not be able to talk to face to face.

APPENDIX 9

PUBLICATION 5 PROGRAMME FOCUSED ASSESSMENT STUDENT QUESTIONNAIRE
 (UNPUBLISHED RESEARCH ARTEFACT)

PROGRAMME FOCUSED ASSESSMENT RESEARCH QUESTIONNAIRE		Oct-16
ABOUT YOU		
1	What is your gender? <i>(Insert code from list below)</i>	
Where: 1 = Female, 2 = Male, 3 = prefer not to answer		
2	What is your age group? <i>(Insert code from list below)</i>	
Where: 1 = 18-20 yrs age group, 2 = 21-23 yrs age group, 3 = 24 yrs + age group		
3	Are you an international student? <i>(Insert code from list below)</i>	
Where: 1 = Yes, 2 = No		
4	Is English your first language? <i>(Insert code from list below)</i>	
Where: 1 = Yes, 2 = No		
5	On graduation I expect to have a career in the field of: <i>(Insert code from list below)</i>	
Codes: 1 = Accountancy, 2 = Business and Finance, 3 = Management, 4 = Something Else		
6	I expect to gain professional qualifications in accountancy after graduation? <i>(Insert code from list below)</i>	
Where: 1 = Yes, 2 = No		
7	Have you ever undertaken an integrated assessment before? <i>(Insert code from list below)</i>	
Where: 1 = Yes, 2 = No		
<i>This questionnaire is anonymous.</i>		
<i>We require the following information to help us understand overall patterns only.</i>		
8	What was your Programme Focused Assessment (PFA) Overall Final Mark ?	
9	Was the overall mark for the PFA as you expected: <i>(Insert code from list below)</i>	
Where: 1 = less than expected, 2 = as expected, 3 = better than expected		
10	What marks did you receive for the following areas of PFA?	<i>Insert Mark</i>

		Understanding and Analysis				
		Evaluation				
		Business Understanding				
		Ethical Awareness				
<p>Note the statements 11 to 49 about Programme Focussed Assessment (PFA) are presented randomly. Use the scale on the right to indicate your opinion</p> <p style="text-align: right;">→</p> <p>Circle number to represent your view e.g.</p> <p style="text-align: center;">3</p> <p><i>Mistakes - cross out clearly</i></p>		Strongly disagree	Disagree	No Opinion	Agree	Strongly agree
11	I see PFA as just a repetition of what had already been tested in the other year 1 module assessments.	1	2	3	4	5
12	Compared to my previous assessments I was more apprehensive about undertaking a PFA.	1	2	3	4	5
13	My first year modules encouraged me to prepare for the end of year PFA by thinking about the interconnections between what I was learning.	1	2	3	4	5
14	I prefer PFA because it was a good valid test of my overall undergraduate knowledge and skills at the end of year 1.	1	2	3	4	5
15	My first year modules prepared me adequately to make connections between all the accountancy skills and knowledge I had been learning.	1	2	3	4	5
16	I would prefer to receive personalised PFA feedback about my performance in discussion privately with my tutor.	1	2	3	4	5
17	I prefer PFA because my tutors were able to make a more valid decision about my overall capability as a student of accountancy compared to other modules.	1	2	3	4	5
18	I was surprised by the strengths and weaknesses identified by the PFA gradings and tutors' feedback.	1	2	3	4	5
19	I was motivated to study accountancy because I believed it to be a straightforward subject, so I could gain a high classification degree.	1	2	3	4	5
20	Compared to other modules, the PFA module provided an enjoyable way of learning.	1	2	3	4	5
21	I prefer PFA because it has given me an overall understanding of my skills and knowledge as I start my second year of study.	1	2	3	4	5
22	I normally prefer to answer assessment questions with short straightforward answers.	1	2	3	4	5

23	The preparation for PFA made me see new connections between the accountancy skills and knowledge I had been learning.	1	2	3	4	5
24	I would prefer to receive personalised PFA feedback about my performance from my tutor in writing.	1	2	3	4	5
25	I like PFA because the work required was more open ended. (i.e. the answers required judgement and interpretation.)	1	2	3	4	5
26	Compared to other module assessments, I really needed further preparatory tuition before carrying out the PFA.	1	2	3	4	5
27	Compared to other modules, I found that the PFA workload was high and demanding.	1	2	3	4	5
28	I was satisfied with amount of PFA feedback I received.	1	2	3	4	5
29	I prefer to receive overall summary feedback in class and then take part in class discussions about the summary feedback.	1	2	3	4	5
30	I rely on memorising facts, ideas, concepts, formulae and techniques to achieve good marks in assessments.	1	2	3	4	5
31	I was overwhelmed by the amount of pre-seen material for the PFA.	1	2	3	4	5
32	I lacked confidence in my ability to focus and apply the accountancy knowledge and skills I had been developing during the first year to real world case studies.	1	2	3	4	5
33	I found PFA of my accountancy skills and knowledge to be really too complex to take place at the end of year 1.	1	2	3	4	5
34	PFA has increased my level of interest in the subject of accountancy.	1	2	3	4	5
35	The style of work undertaken during the PFA has motivated me to study accountancy more widely and in greater depth.	1	2	3	4	5
36	I expect to understand the bounds of exactly what I need to learn for each accountancy module assessment.	1	2	3	4	5
37	I prefer to carry out PFA where I can demonstrate my undergraduate accountancy knowledge, skills and experience with interpretive answers.	1	2	3	4	5
38	The PFA was well managed by the tutors.	1	2	3	4	5
39	I would have been more motivated if the PFA had contributed more marks toward my overall grading for the year.	1	2	3	4	5
40	PFA has showed me how to make connections between the first year taught study modules.	1	2	3	4	5

41	I was satisfied with my overall PFA performance.	1	2	3	4	5
42	The PFA module brought my skills and knowledge together in a way that extended my overall understanding of accountancy.	1	2	3	4	5
43	PFA was an effective learning experience for me.	1	2	3	4	5
44	I now would prefer future end of module assessments to be based on wider integrated use of my accountancy skills and knowledge, where I would be required to carry out analysis, interpret information and make judgements when producing answers.	1	2	3	4	5
45	The preparation, assessment tasks and feedback provided by the PFA module was an effective learning experience.	1	2	3	4	5
46	The PFA experience increased my confidence as an undergraduate student of accountancy.	1	2	3	4	5
47	I prefer the form of PFA because I like assessments which require wider thought and analysis - linking varied ideas together.	1	2	3	4	5
48	I am now going to reflect on the feedback I have received and make an action plan to improve my accountancy skills and knowledge.	1	2	3	4	5
49	The PFA module has enabled me to better understand how to apply my accountancy skills and knowledge in the workplace.	1	2	3	4	5

Using bullet points please explain what you personally **liked** about PFA.

APPENDIX 10

PUBLICATION 3 EXTRACT OF A PROGRAMME FOCUSED ASSESSMENT FOCUS GROUP
TRANSCRIPT (UNPUBLISHED RESEARCH ARTEFACT)

(Staff & Student details decoding removed.)

PJ *So as I say, this should probably take about 30/35 minutes or so, Aiden, I know you've got to leave at 12, that's fine and as I say, what I'm really looking for is your own genuine personal opinions on this. There's no right or wrong answer, err, neither of us¹⁰ have got a huge emotional investment in this, we're not just looking for you to tell us that everything is great, we genuinely want to hear err what you think about this partly because it will help us to erm improve things err in the future, err but partly because we're genuinely interested in this from a research point of view. Just to put it into a little bit of context, the programme focussed assessment that you did is relatively unusual in universities. Most of the time if you were doing an accounting degree at university, you'd get an exam in each subject and that would be it. You wouldn't get an exam that covered all those subjects together that integrated those subjects so it's relatively unusual, what you've done.*

So my first question is, do you think that the feedback you got on that exam will be useful to you in your future study, or has been useful to you already in your second year study?

KS Yes

PJ OK

KS Erm

PJ *Speak up, by the way, because you're being recorded.*

KS Yeah, I don't speak well. I... I found the feedback with {staff name} & {staff name} very useful actually, erm, and then I had feedback just my own and I did learn something from it actually.

PJ *OK. What was most useful about it?*

KS Erm... It's about how to err actually make a point err when you write, how to erm make a statement a bit more valuable erm and what to look for err rather than just making it probably just explain, just evaluate as well erm and what questions do you ask, like Julia said always say "why" and

PJ *Yep*

KS so that was quite useful.

PJ OK

KS for anything to do with future assessments.

AL Yeah, I agree, I think it was the only exam we've had like one to one feedback on

PJ OK

AL So erm, it could have been for any exam, but yeah, {staff name} said to me something like about getting the examiner on your side almost when you're erm, structuring an answer. She said like they should mark a paper neutrally, really, but if you're making it very clear to them and you're making it, you make it easy for them to give you marks almost, and that's the advice I remember from that so...

PJ *Yeah*

AL Yeah I took something from it.

LW I'm not going to lie, I can't even remember going to it at the moment

PJ *(laughs) OK*

LW so I'm not even sure if I did go to it, erm....

PJ *Do you remember getting the feedback sheet from your exam, with your mark allocation on?*

LW I think so...

PJ *Right*

LW It's somewhere...

PJ OK

- LW Yeah, I don't know
- PJ *{student name}*?
- KR (Inaudible – very brief, so I guess she can't really remember either??)
- PJ *OK, OK.*
- KS But I also think it was useful to find out why we weren't given marks for the ethics section. I couldn't understand why I wasn't given marks for certain,
- PJ *OK*
- KS but *{staff name}* made it very clear,
- PJ *Right*
- KS so it was good.
- PJ *OK. Erm... Leading on from that, do you find that this exam and the feedback encouraged you to reflect on your strengths and weaknesses?*
- KS Oh, yeah. Yeah.
- PJ *Yeah?*
- LW Yeah, I found kind of like with the exam, it helped me erm... So, rather than just focussing on one area and just doing like a paragraph on something, it made it so that like you kind of thought about well... if I was going to do write a paragraph or two about something it would be.. be kind of say one thing but you also say how it's linked to another subject so you're kind of like
- PJ *OK*
- LW (couple of unclear words) got the ethics alongside of how you would do a reporting, so it's helped me understand a bit better why things are done the way they are.
- PJ *OK*
- AL Yeah, *{staff name}* told me where I'd kind of dropped marks and I think that's helpful because you don't really need to know where you've got the marks 'cause you're already doing that, (PJ: Yeah) it's like it's the things you need to work on, and she said I wrote enough to get a lot more marks, but it wasn't relevant in areas, so...
- PJ *Right*
- AL yeah, that's probably improved the relevance of the answers.
- PJ *OK... {student name}?*
- KR Erm... I think one of the feedback (inaudible word) was that I needed to develop more points (PJ: Right) and, erm, so I was very brief on some of it and that was really helpful (PJ: OK) because, erm, it showed that I was on the right lines, but kind of erm, I needed that confidence to improve it (PJ: Yeah) and actually explain (*inaudible, two or three words*)
- PJ *OK. Erm... Do you find... Did you find that the, the exam itself, the preparation for it, the practice at it, the exam, the feedback, everything connected with it... Did it increase your confidence about dealing with unfamiliar situations or ambiguous situations?*
- AL I think it linked it to more, like, real world examples. (KS: Yeah, PJ: Right) Rather than just, like, passing an exam you're actually relating it to, like real, like, to real life examples, so that's why I found it quite interesting actually.
- PJ *OK*
- LW I was going to say the only thing that I found that was a bit strange about it was how... obviously we couldn't err integrate subjects together until we got to the second semester, so...
- PJ Yeah
- LW there was quite a bit of time that was allocated to it in the first semester that... we weren't able to do anything with it (PJ: Right) (inaudible) even in the second semester as well, we didn't use the time that was allocated to it for doing programme focussed assessment, it was more, in each of the different subjects we tried to (PJ: Yeah) link the programme focussed assessment to them.
- PJ *Right*
- KS So if, perhaps, there could have been a bit more guidance erm... and more sessions to do it, because we had one with erm... Angie, didn't we? Oh, two with Angie and we had some with erm... with Alison as well. I think we had more, like Luke said, we had to do them at home or (inaudible).

- PJ *If it's any consolation, this year's first years are getting more guidance. You told us that and we realised that we probably needed to give you more guidance (KS: Yeah) and also to make the guidance more explicit as well (KS: Mmm). So if it's any consolation, the students that are a year younger than you are getting more guidance.*
- KS Well, that's good to know (laughs)
- PJ *Erm... Do you think that the skills that you developed would be useful to you in your future study? So, by "skills" I don't necessarily mean err, technical knowledge, but I mean skills like commercial awareness, the ability to analyse a situation, the ability to prioritise points, all those kind of generic skills that that we try and develop but don't relate to a specific subject, so, sorry, the question was do you think that those skills would be useful to you in your future study?*
- AL Yeah, I think I think definitely, but the problem was there was only six questions of course, so there's not really, it's not very much and, it's only like, we're not doing like lessons each week on it, so (PJ: Yeah) it's three hours and then it's done really, but I really liked it and I would have liked to learn a bit more, really.
- PJ OK
- LW Yeah, and also it kind of got you in that mind-set where it made you aware of the, you're not just looking at one thing, there is other things that this will affect, and it expands your view, I guess, is the main thing (PJ: Yeah) so there's a... You don't just write about one little subject at a time... but, I wouldn't really know what else, cause like other skills it gave me, you wouldn't... It was more just bringing everything together, so it's... I don't know how...
- PJ *Ok... I mean, that is a skill in itself, the skill of being able to integrate knowledge from different areas (LW: Yeah) and apply existing knowledge to a new situation, that's a skill in itself (LW: Yeah).*
- LW That is very useful when it comes to dealing with real world, because you don't just get one input, you get input (PJ: Yeah) from all over the place, you've got to make one output out of it, I guess. (PJ: Yeah)
- KS It is useful I think because I always wonder if I go for a job, would I just do what we do in Financial Accounting, for example, or would it be all together, I would have to use my knowledge from all different subjects, erm... So, say, if we had one this year would it be, like, what an accountant would do, erm, making, like, financial statements (PJ: Mmm) and a bit of management accounting and a bit of... erm, research, perhaps, all together. So that's, that's the useful bit that, like (PJ: Yeah) you know what you'd do in real world.
- PJ *OK. Erm... next question... If... Knowing what you know now, if this was an optional module would you take it?*
- LW I would definitely sign up for taking it if it was an optional module to do (PJ: OK) because it allows you to bring everything together, which I think (PJ: Mmm) kind of strengthened my, like, I found weaknesses in other areas, which I think (PJ: Right) was a good part of it because it meant that where I would try and relate it to something I would, kind of, just relate it to some of them, but then I'd struggle on another bit because my lack of knowledge or possible understanding in that area (PJ: Uh huh) wasn't as strong as it should have been, so it helped me build up my weaknesses and find where they were.
- PJ *Yep.*
- AL I would. I think being, like, commercially aware is just as important as everything else we do here, really. (PJ: Mmm) So I think I would, I'd like to do that.
- PJ OK
- LW I was going to say, I think the issue though with getting people to, if it was an optional module, would be trying to erm... get enough people onto it to make it a full module because quite a few people are rather lazy and it would be "what does this module do for me". (PJ: Right) But if it was a [sic] optional module as in... you can select a few modules and you have to do one of them, then I think people would have gone for this one here because it would have made it more sense because it brings all their other modules together.
- PJ *OK. I mean it was a theoretical question, really, we're not thinking of offering it as an optional module, but it was, it was a way of asking erm, how enthusiastic you were about it, really. Kerry?*
- KR I would, yeah. Erm, (inaudible) it brings in, like, you need all of your knowledge, erm, to be able to do it and, erm, it kind of, erm, makes you think like, about everything (PJ: Mmm) and what you know and you can literally use anything that's relevant which is good here, so for one situation you could talk about erm... like, Managing People and Projects as well as erm, like, Management Accounting (PJ: Yeah) and then bring them both together, (PJ: OK) which I thought was really useful and it also showed how much knowledge I had as well.
- PJ *Mmm!*

- KS Depends what else is available, really (laugh). (PJ: OK, yeah) So... if I knew what else was available...
- PJ *How far towards the top of your list would it be, (KS: OK, err...) if we gave you a list of optional modules and this was on there, how far high up your preferences would it be?*
- KS Third place, second or third place, (PJ: OK) I'd say, yeah. It depends what's available.
- PJ *Yeah. Erm, is there anything else that you particularly liked or didn't like about the module or anything to do with it?*
- AL I liked that it, like, consolidates everything you learn from other modules, but... which kind of makes it a little bit easy almost, you know, 'cause you are learning it anyway so you don't have to do, like, you don't really need to do any extra revision for it, only really looking at the paper, but then that kind of makes me think, like, what's the point of us in doing it because... you're doing five other exams, so why do you need to do... It, all it is is maybe adding a bit of, like I say, commercial awareness and that, which I think, I think's alright, but if it's only for, like, six questions, (PJ: Yeah) I'm not sure what you really get from it, (PJ: OK) I think.
- LW And, you know, quite a bit of timetabling, spacing was, kind of, wasted from it not being used up in the first semester, but... I don't know... I mean, we did have a library tour and there was something else on, I believe. Yeah, so it was kind of just a lot of... Was it two hour slot, was it, allocated to it? Which was every week which we didn't really use up, so it's more if there was some form of way that you can do something on skills training in the first semester (PJ: Mmm) and then you could effectively bring all the skills together in that one unit (PJ: Yeah) and focus on the skills, but, that's more teaching time, so it's a bit of (PJ: Yeah)... yeah.
- KS A bit more guidance, like I said earlier, but, erm yeah, I don't mind it, I think it was quite useful.
- PJ *OK. Erm... Any other comments on it?*
- AL I did enjoy it, I thought it was good (PJ: OK). And, erm, I liked that we had like a case study to learn, but I, yeah, I just think maybe it needs to be developed a bit more, maybe more questions and maybe more timetabling towards it.
- PJ *OK. Would you want classes specifically associated with it?*

Extract ends

APPENDIX 11

PUBLICATION 6 VISUAL METAPHOR TRIAL QUESTIONNAIRE (CLOSED AND OPEN QUESTION)
 (UNPUBLISHED RESEARCH ARTEFACT) (Reformatted and edited to fit this Submission)



WINCHESTER
BUSINESS SCHOOL

MODULE AN1910: ACADEMIC AND PROFESSIONAL SKILLS
WEEK 3: VISUAL METAPHOR EXERCISE

STUDENTS' QUESTIONNAIRE

In Week 3 you were asked to visualise your future journey through the University and into your chosen career as part of a personal development planning exercise. We wanted you to produce a photo-visual chart in the form of a visual metaphor to provide a basis for a written personal assessment of how you see yourself developing professionally at this university and in the early years of your future employment. **This was a completely open personal reflection exercise.**

Organising and presenting your thoughts using a visual metaphor approach should have helped you co-ordinate what you already know about your possible professional future and should have showed up where perhaps you have gaps in your skills and knowledge. In fact, this form of reflection and recording process is seen as an important part of Continuous Professional Development (CPD).

Your help is requested in completing this questionnaire about the use of visual metaphor organisers and their possible relevance as a tool in personal development. This Questionnaire is part of a short University of Winchester research study. It has been designed **to obtain your views** about the use of visual metaphors in the context of personal development planning.

Your questionnaire will be treated anonymously, although we do ask you to provide your student number so we can ask you individually to give your permission to use your visual metaphors in any publication or presentation we may make.

There are several questions in various formats. There are no right or wrong answers. Please read each question carefully before answering. Note that sometimes you are required to provide more than one response. There is only a small amount of writing involved at the end of the Questionnaire.

The Questionnaire takes about **15 – 30 minutes** to complete. **It is important that you try to respond to all the questions.**

**HAND YOUR QUESTIONNAIRE BACK TO THE FACULTY OFFICE BY INSERT DATE
 AND WE WILL AWARD YOU AN EXTRA 5 BONUS MARKS FOR YOUR ASSIGNMENT.**

Julia Osgerby

West Downs (julia.osgerby@winchester.ac.uk)

MY STUDENT NUMBER IS:

INSTRUCTIONS

Circle your answers. If you make a mistake just cross it out and circle another answer e.g.

Q2. What is your first language?

English	1	Circle One
Other	2	02

Q1. What is your Gender?

Male	1	Circle One
Female	2	01

Q2. Is English your first language?

Q3. How old are you?

Less than 18 years	1	Circle One
18-22 years	2	
23-27 years	3	
Over 27 years	4	03

Q4. What is your Nationality?

British (including Dual) Nationality	1	Circle One
European Nationalities	2	
International	3	04

Q5. My 'A' levels or equivalent

Science/math's base
Arts/languages base
Mixed subject base

Q6. Have you ever received any instruction (including self-instruction) in the use of the following? If you cannot answer this question just leave it blank.

Mind Mapping	1	Circle up to Three
Concept Maps	2	
Network Analysis/PERT Charts	3	
Storyboards	4	
Conceptual Diagrams	5	
Brainstorming	6	
Visual Metaphors	7	
Writing a Personal Development Plan	8	06a-c

ABOUT YOUR PERSONAL LEARNING STYLE

INFORMATION

During the Week 3 work you self-assessed your learning styles using the VARK questionnaire.

- **Visual (V) Learning Style.** You like information presented in maps, spider diagrams, charts, graphs, flow charts, labelled diagrams, and all the symbolic arrows, circles, hierarchies and other devices that people use to represent what could have been presented in words.
- **Aural / Auditory (A) Learning Style.** You like information presented "*heard or spoken.*" Learners who have this as their main preference report that they learn best from lectures, group discussion, radio, email, using mobile phones, speaking, web-chat and talking things through.
- **Read / Write (R) Learning Style.** You like information presented as words. Not surprisingly, many teachers and students have a strong preference for this mode. Being able to write well and read widely are attributes sought by employers of graduates. This preference emphasizes text-based input and output - reading and writing in all its forms but especially manuals, reports, essays and assignments. People who prefer this are often addicted to PowerPoint, the Internet, lists, diaries, dictionaries, thesauri, quotations and words.
- **Kinesthetic (K) Learning Style.** You prefer to learn from experience and practice (*simulated or real*) perhaps using other learning styles as well. You like demonstrations, simulations, videos and movies of "*real*" things, as well as case studies, practice and applications. The key is the level of reality of examples.
- **Multimodal (MM) Learning Style.** Life is multimodal. There are seldom instances where one mode is used, or is sufficient, so that is why there is a four-part VARK profile (four scores) and also why there are mixtures of those four modes. Those who do not have a clear standout mode with one preferred learning style are described as having a **multimodal learning style**.

You may remember your VARK scores, but the questions below are more general.

TWO QUESTIONS ABOUT LEARNING STYLE


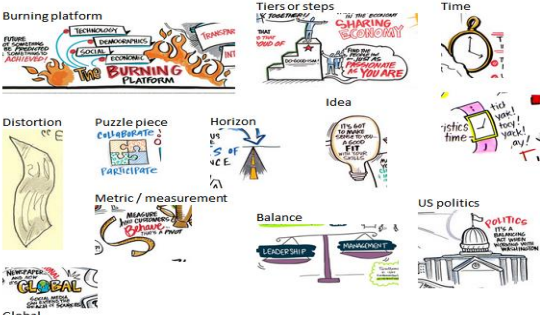

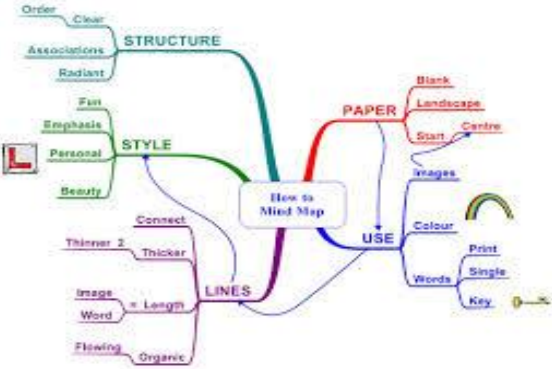
Q7. What type of overall learning style did your VARK scores suggest you have?

Q8. What is your preferred learning style?

A clear visual learning style (V)	1	
Multimodal with a visual learning style (Vm)	2	
A clear aural / auditory learning style (A)	3	
Multimodal with an aural / auditory learning style (Am)	4	
A clear read / write learning style (R)	5	
Multimodal with a read / write learning style (Rm)	6	
A clear kinesthetic learning style (K)	7	
Multimodal with a kinesthetic learning style (Km)	8	
An overall multimodal learning style (MM)	9	07

ABOUT YOUR PERSONAL DEVELOPMENT PLAN (*presented as a visual metaphor*)

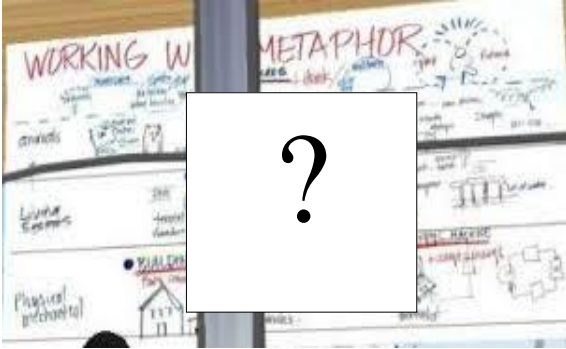
Q9. Using the list below please indicate which form of visual metaphor your personal development submission was closest to. CIRCLE ONLY ONE CHOICE

	<p>Form 1 OVERALL BIG VISUAL METAPHOR</p> <p>My personal development plan was presented in the framework of an overall 'big picture' visual metaphor for example an underground map.</p> <p style="text-align: right;">Circle (1)₀₉</p>
<p>Metaphors Thursday, March 15, 2012 9:12 PM</p> 	<p>Form 2 MANY SMALL VISUAL METAPHORS</p> <p>My personal development plan was presented as a collection of small metaphors.</p> <p style="text-align: right;">Circle (2)₀₉</p>
	<p>Form 3 MIX OF A BIG AND SMALL METAPHORS & IMAGES</p> <p>My personal development plan was presented as a mix of a 'big picture' visual metaphor with many additional smaller meaningful visual metaphors and other diagrams/pictures.</p> <p style="text-align: right;">Circle (3)₀₉</p>
	<p>Form 4 IN THE FORMAT OF THE ANALYSIS METHOD</p> <p>My personal development plan was presented in the format of a pictorial analysis method for example a mind map.</p> <p style="text-align: right;">Circle (4)₀₉</p>
	<p>Form 5 WRITTEN CHART</p>

My Side of the Mountain Week 1				
Monday	Tuesday	Wednesday	Thursday	Friday
<p>Vocabulary Focus Words: For this unit I will record the following vocabulary on the back of this card and use it in my writing. I will review these at the beginning of the lesson.</p> <p>1) (nouns) 2) (verbs) 3) (adjectives) 4) (pronouns)</p>	<p>Vocabulary Focus Words: I will record the following vocabulary on the back of this card and use it in my writing. I will review these at the beginning of the lesson.</p> <p>1) (nouns) 2) (verbs) 3) (adjectives) 4) (pronouns)</p>	<p>Vocabulary Focus Words: I will record the following vocabulary on the back of this card and use it in my writing. I will review these at the beginning of the lesson.</p> <p>1) (nouns) 2) (verbs) 3) (adjectives) 4) (pronouns)</p>	<p>Vocabulary Focus Words: I will record the following vocabulary on the back of this card and use it in my writing. I will review these at the beginning of the lesson.</p> <p>1) (nouns) 2) (verbs) 3) (adjectives) 4) (pronouns)</p>	<p>Vocabulary Focus Words: I will record the following vocabulary on the back of this card and use it in my writing. I will review these at the beginning of the lesson.</p> <p>1) (nouns) 2) (verbs) 3) (adjectives) 4) (pronouns)</p>
<p>Preview/Background Building: Give each student their book and explain the expectations of the novel study. They will be required to read every night, including their chapters each weekend, with accompanying homework. It is their responsibility to read the assigned chapter each night in and to have their parent sign off.</p> <p>Each student should have their own copy, that they need to have at school with them each day.</p> <p>Ask the students to look at the book's cover and predict what the story will be about. Record these predictions on separate paper and keep them.</p>	<p>Discussing Chapter 1 Complete Anticipation Guide</p> <p>Introduce the chapter and discuss: Why is this chapter called 'I Show Up in a Squirrel's World'?</p> <p>As a class read the author's preface. In the PREFACE, how does the author introduce the book?</p> <p>SUBJECT, PURPOSE, AND PLAN</p> <p>(Read the chapter as a class, or have the students partner read.) I suggest starting off whole group. You can also differentiate this part, give the higher students the questions before while you walk through them with the rest of the class whole group.</p> <p>After reading discuss: 'Who does the chapter make you feel as though you, and you didn't have a perspective</p>	<p>Discussing Chapter 2 Complete Anticipation Guide</p> <p>Before Reading Discuss: Why is this chapter called 'I Get Started on My Farm'?</p> <p>(Read the chapter as a class, or have the students partner read.) I suggest starting off whole group. You can also differentiate this part, give the higher students the questions before while you walk through them with the rest of the class whole group.</p> <p>How does Sam know that Tom had planned and prepared for it to be a great grandchild's farm?</p> <p>Describe what Sam saw when</p>	<p>Discuss Chapter 3 Complete Anticipation Guide</p> <p>Before Reading Discuss: Why is this chapter called 'I Find Grizzly's Farm'?</p> <p>(Read the chapter as a class, or have the students partner read.) I suggest starting off whole group. You can also differentiate this part, give the higher students the questions before while you walk through them with the rest of the class whole group.</p> <p>How does Sam know that Tom had planned and prepared for it to be a great grandchild's farm?</p> <p>Describe what Sam saw when</p>	<p>Discussing Chapter 4 Complete Anticipation Guide</p> <p>Before Reading Discuss: Why is this chapter called 'I Find Many Good Places'?</p> <p>(Read the chapter as a class, or have the students partner read.) I suggest starting off whole group. You can also differentiate this part, give the higher students the questions before while you walk through them with the rest of the class whole group.</p> <p>This author uses many metaphors and similes and figurative language. The first paragraph has "birds were chirping from the trees, like birds, singing and chirping"</p>

My personal development plan was presented in a text format.

Circle (5) 09



Another Personal Form

I developed my own way of creating a visual image of my personal development plan which I have described below.

Circle (6) 09

I used another presentation format. **Please describe.**

Circle (7) 09

ABOUT YOUR ANALYSIS METHOD

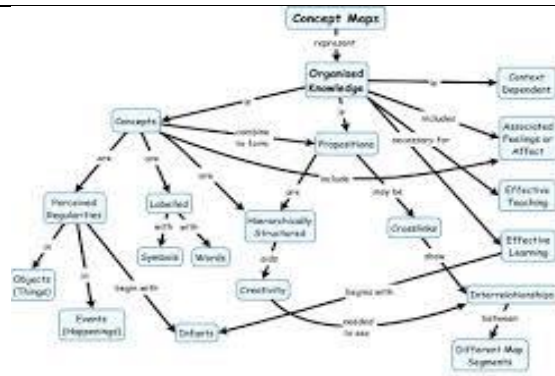
INFORMATION

There are various charting methods which allow ideas and their relationships to be analysed and visualised. Some of them rely on formal methodology and careful illustration rules. Others have a more open approach.

You should recognise that you may have been using these methods since you started school and they will have been presented to you in different ways and been given different names. You may even have been previously taught how to use them. As a university student you must have used some method to analyse, organise your ideas and record your thinking during the visual metaphor exercise. You may have even formatted your chart to match your methodology. You even probably have a favourite way of analysing ideas. Perhaps you even use several methods together.

Some of the more common analytical charting methods are **illustrated in Question 10**. You might call them something else

Q10. Using the list below please indicate which analysis tools you used to develop your personal development plan submission. YOU MAY CIRCLE UP TO THREE

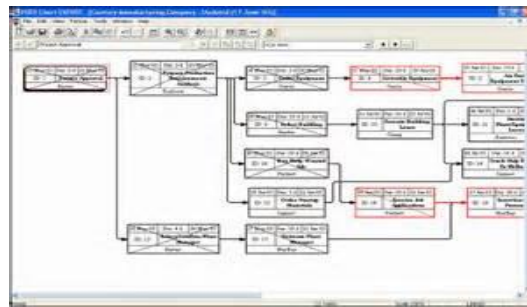


Concept Map

A diagram showing a top down hierarchal breakdown analysis of connected ideas and concepts.

I used a concept map method like this.

Circle (1

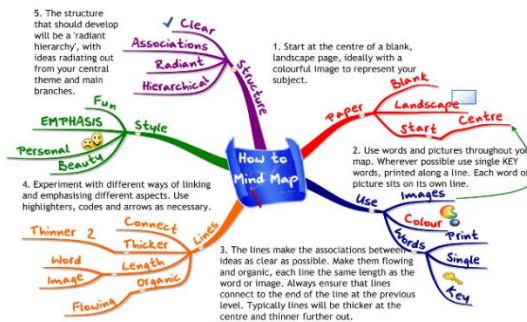


Conceptual Diagram

A more formal type of diagrammatic analysis based on understood processes and rules.

I used a conceptual diagram method like this.

Circle (2

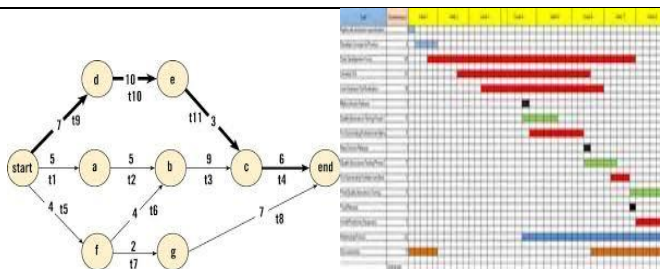


Mind Mapping

A mind map is a multi-coloured radial diagram that registers ideas and concepts and shows the hierarchical relationship between these ideas.

I used a mind mapping method like this.

Circle (3



Time Based Planning/Timetabling

An analysis to create a personal development is likely to be related to time.

I used a time based planning method like this.

Circle (4





Text Based Analysis

You may have used just notes to record your thinking and ideas.

I used a text based analysis method.

Circle (5

	<p>Picture Charts</p> <p>You may have collected many images (photos, drawings, icons and diagrams) to help you record your ideas about a personal development plan. You may also have had explanatory notes.</p> <p>I used a picture based method like this.</p>	<p>Circle (6</p>
	<p>Visual Metaphor</p> <p>I used the actual visual metaphor itself as a way of analysing and recording my ideas about personal development.</p>	<p>Circle (7</p>
<p>I used other methods. Please describe.</p>		<p>Circle (8</p>

ABOUT YOUR OPINION ON USING VISUAL METAPHORS

INFORMATION

We have made a series of statements about the visual metaphor exercise below. Using the standard ratings provided we would like you to indicate for each statement how strongly you agree or disagree with each statement.

Please remember this questionnaire is anonymous and there are no right or wrong opinions about this subject – just your opinion.

INSTRUCTIONS

Circle your answers. If you make a mistake just cross it out and circle another answer e.g.

Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree	11
Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree	12

You will also be asked a few open ended questions where we would like you to write few sentences expressing your views.

Q	Statements (in random order)	Your Opinion				
11	I found it easy to create a visual metaphor organiser for personal development planning.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
12	Using a visual metaphor technique in an exercise about personal development planning was a surprise to me.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
13	I normally use a visual and/or diagrammatic approach when I am thinking about problems.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
14	Using a visual metaphor approach enabled me to be more creative while thinking about my personal development.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
15	I thought through my personal development plan, at least in outline, before I created my visual metaphor chart.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
16	I used computer software to help me create my visual metaphor.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
17	I like to join things up in diagram form, so as to understand the relationships between ideas.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
18	A visual metaphor approach enabled me to imagine what my professional future life may be like.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
19	This visual metaphor exercise has triggered my interest in personal development planning.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
20	Using a visual metaphor approach made personal development planning easier.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
21	I used the Internet as my main source of images for the visual metaphor.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
22	The character of teaching at the Winchester Business School generally fits my preferred learning style.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
23	I have continued to think about my visual metaphor since I handed it for assessment.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
24	I will continue to will use my personal development planning visual metaphor in the future.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree

Q	Statements (in random order)	Your Opinion				
25	I was embarrassed by the exposure of private ideas about my personal development because it was expressed in pictures.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
26	A visual metaphor about personal development planning must always be based on a timeline.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
27	Using a visual metaphor approach has given me a new skill to use in my other studies.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
28	I will use visual metaphors again during my other academic studies.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
29	Using visual metaphors in personal development planning was a novelty.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
30	I enjoyed creating a personal development plan using the visual metaphor approach.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
31	Creating a visual metaphor in personal development planning is an unnecessary extra effort.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
32	Using visual metaphors as an approach generally matches my preferred learning style.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
33	I will continue to undertake my continuous professional personal planning in the future using the visual metaphor approach.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
34	I am now putting more efforts into my studies having visualised my future career goals.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
35	By using a visual metaphor approach to personal development planning I was able to identify more factors to consider that I would probably have done normally.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
36	Using a visual metaphor approach as well as producing a written statement really complicated the development of my personal development plan.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
37	There are other ways the personal development planning exercise could have been conducted which would have better suited my learning style.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree

Q	Statements (in random order)	Your Opinion				
38	The use of a visual metaphor gave me the opportunity to develop more creative problem solving skills.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
39	The visual image of my aspirations for the next 5 years has now become important to me.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
40	Creating a visual metaphor was a boring experience.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
41	I would have preferred to have been given more preparation on the technique of visual metaphors.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
42	My visual metaphor about personal development planning enabled me to think about the relationship between my current skills/knowledge and my future professional knowledge and skill requirements.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
43	The visual metaphor approach has made me take the subject of personal development planning more seriously.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
44	I will continue to use the visual image of my personal development plan keeping it up to date.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
45	I created my visual metaphor only after I had reflected on the content of my personal development plan.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
46	Using a visual metaphor approach allowed me to create an effective personal development planning easier.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
47	Using a visual metaphor approach enabled me to focus clearly on my future personal development planning.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
48	The visual metaphor approach for personal development planning has motivated me to put more effort into my overall studies.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
49	I would have liked more guidance on the subject of professional personal development before undertaking the visual metaphor exercise.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree
50	This questionnaire has helped me understand what the visual metaphor exercise was about.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree

Q	Statements <i>(in random order)</i>	Your Opinion				
51	I have learned something about research methodology by completing this questionnaire.	Strongly Agree	Agree	Not Certain	Disagree	Strongly Disagree

Q.52 Please may we use your visual metaphor anonymously in any presentation or publication that we may produce?

YES	1	<i>Circle One</i>
NO	2	

YOUR OVERALL THOUGHTS ABOUT THE VISUAL METAPHOR EXERCISE

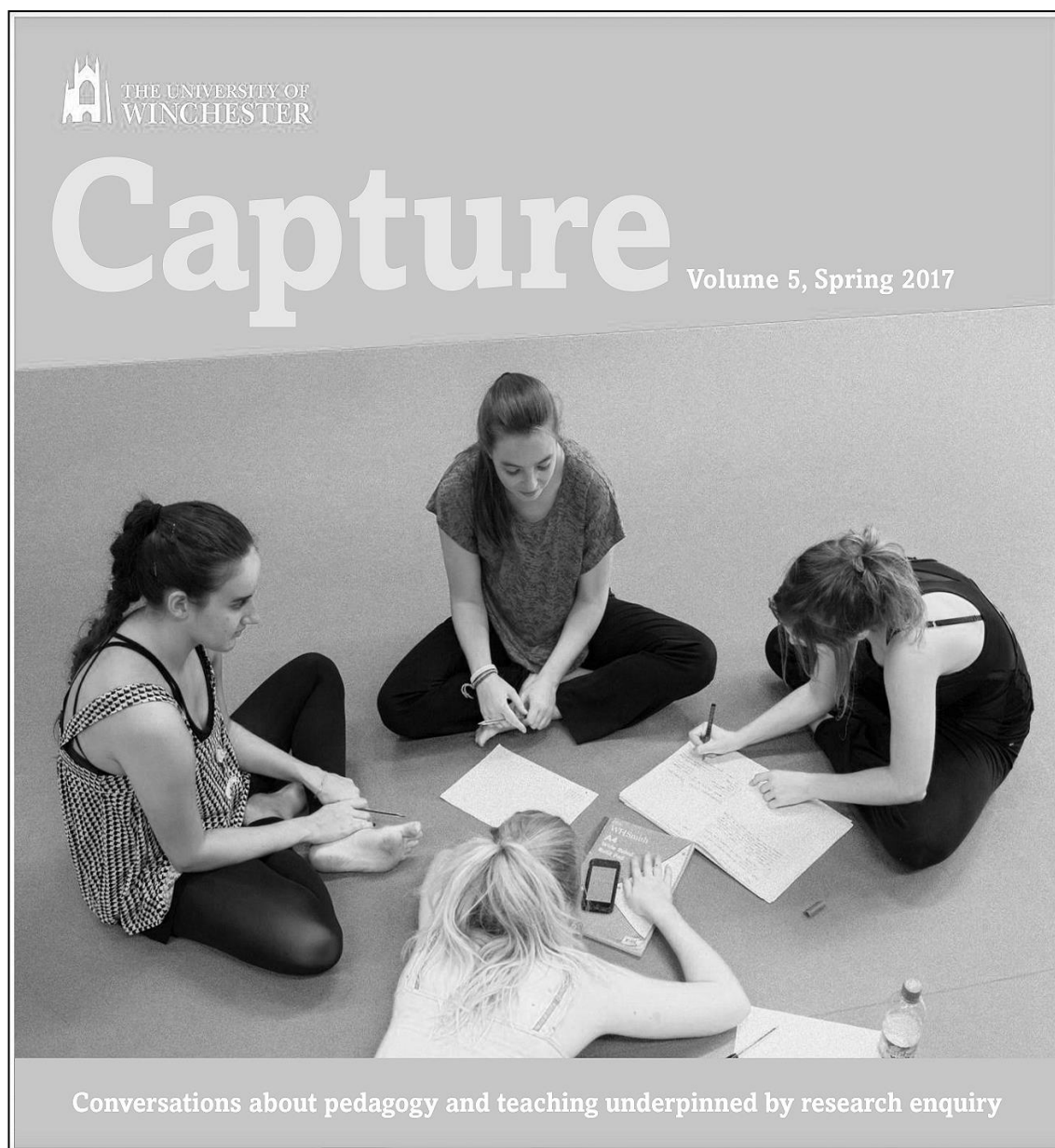
Please write some notes answering the following questions. Continue over the page if you want to.	
What do you think our purpose was in getting you to use a visual metaphor approach to personal development planning?	
Explain your method of producing your visual metaphor	
Where do you think you will use the visual metaphor approach in the future?	
Did the use of a visual metaphor help you with your personal development planning? Explain your answer.	
What did you like about using a visual metaphor?	
What did you dislike about using a visual metaphor?	

APPENDIX 12

PUBLICATION 5 EXAMPLE DISSEMINATION OF PROGRAMME FOCUSED ASSESSMENT RESEARCH (CAPTURE MAGAZINE)

(EXTRACT OF UNIVERSITY OF WINCHESTER PUBLISHED MAGAZINE)

A copy of the article disseminating the introduction of Programme Focused Assessment in the Capture Magazine is reproduced below (Jennings, Osgerby & Bonathan. (2017).



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Programme Focused Assessment



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Introduction

Programme-focussed assessment (PFA) is assessment of student learning specifically designed to address key programme learning outcomes real.¹ PFA shifts the balance away from component- and module-based assessment, which is where most assessment currently takes place. It is integrative in nature and directly assesses the extent to which students are meeting programme learning outcomes; reinforcing the link between the aims of the programme and the activities of learning,

1. This initiative builds upon the research carried out in the PASS project. Details are available at <http://www.pass.brad.ac.uk>

teaching and assessment. It can thus help to counter the short-term superficial learning that can result from frequent module-based assessment.

It also helps to address the problem of over-assessment which is undesirable for pedagogic reasons as well as being an inefficient use of scarce resources. Duplication of assessment can be reduced and assessment is more obviously relevant to the student's future studies – assessment for learning as well as assessment of learning.

Integrative assessment that focuses on programme learning outcomes is consistent with greater intellectual attainment and improved employability, since it encourages the development of skills relevant to future intellectual and professional development.

Context

In 2015, the Undergraduate Accounting programmes introduced a programme level assessment as a new Level 4, 20 credit assessment module. There is no new technical material in the module; it is an overall integrated assessment of the Programmes' Learning Outcomes. This was initially introduced as a pilot to support the university's exploration of PFA; following a successful implementation the change was confirmed at a revalidation event in 2016.

A diagrammatic representation of the programmes is shown overleaf.

Year 1	Year 2	Year 3	
Financial Accounting	International Financial Reporting	Strategic Management Accounting	Financial Information Analysis
Management Information	Management Accounting and Financial Management	Advanced Financial Reporting	Advanced Management Accounting
Finance	Accounting Research and Analysis	Option	Option
Business Ethics and Law	Business and Personal Taxation	Option	Option
Business Management and Economics			
Integrated Assessment			

Structure of the assessment

The assessment is a case-based closed book written exam lasting 3 hours. No materials are allowed in the exam. Non-programmable calculators are allowed.

The company used in the case is usually a well-known publicly listed company.

The information given to students contains background information about the company, usually consisting of extracts from financial statements and additional information about activities and performance from the annual report, company publications or public media. Usually students will be given around 5-10

pages of information. As far as practicable all the information is real.²

All or most of this information is distributed to students via the Learning Network approximately 24 hours before the exam. Students therefore have the opportunity to read the information in advance. The main reason for distributing the information in advance is to reduce the amount of reading students are expected to do under exam

2. Depending on the nature of and areas covered by the case study, parts of the information may be simplified or fictitious (for example, students may be instructed to assume the value of some variables to facilitate calculations or analysis if this information is not publicly available).

The constructive alignment of this assessment with assessments at levels 5 and 6 of the programme helps the University to manage progression and gives students formative feedback on their abilities, which can help them to inform their approach to study at higher levels.

The marks awarded in each AOC are weighted to calculate a total mark. (It is emphasised that the total mark awarded is thus a weighted average of the marks awarded to each area of competence, rather than the total of the marks awarded to each answer.)

Finally, a factor is applied which converts the

student's total mark into a final mark. The factor reflects naturally occurring variations in the overall level of difficulty of each assessment and allows some longitudinal normalisation of marks where there are identifiable differences in performance between cohorts. Typically, the factor assumes that the average performance in the top decile of students represents the best realistically achievable mark and that the percentage of students who pass the module will be comparable across all modules at that level.

A diagrammatic representation of the assessment criteria is shown below.

