Education Compliance and e-Learning in Australia: A Distance Education Model in Exercise and Sport Science

Ian Heazlewood
School of Psychological and Clinical Sciences
Charles Darwin University
Australia
ian.heazlewood@cdu.edu.au

Abstract:

Universities attempt to develop innovative and current degrees in Australia, especially in exercise and sports science, which is one of the fastest growing disciplines within Australian universities. Compliance in higher education and relevant to exercise and sports science degrees is now an expected part of the higher education playing field in the Australian university sector as Australian and State governments through SCOTESE control the developing curricula by enforcing compliance with national agendas, such as the Australian Qualifications Framework that controls the expected level of academic achievement and skill levels within the 10 levels of educations from certificate level to doctoral level qualifications. In addition, professional associations also have input and demand compliance in terms of micromanaging the subjects and the curriculum in exercise and sports science, as well as university driven models of compliance in terms of developing and moderating degree programs. The development of e-learning fully and on-line degrees is now the norm not the exception with some universities delivering to 70% of their students using this education mode and Open Universities Australia a 100%. However, such development is controlled via compliance and how this compliance influences the product universities sell to their customers, the students.

Keywords – higher education, compliance, e-learning, exercise, sport science

I. INTRODUCTION

Currently in Australia many universities provide access to study by full on-line course delivery and assessment and in some cases over 70% of students access university higher education in this learning and assessment mode. Open Universities Australia, a consortium of Australian universities who deliver on-line distance education are at 100%. In the Australian higher education sector, such as Australian universities, is driven by Australian Government compliance. The majority of Australian universities are dependent heavily for funding from the Australian government as a consequence the Australian Government and State Governments have assumed a stronger role in university compliance. Currently, the higher education and university sector is driven by The Council of Australian Governments (COAG) Standing Council on Tertiary Education, Skills and Employment (SCOTESE) has been established. The purpose of SCOTESE, as set out in its Terms of Reference, is to ensure that Australia’s current and future workforce needs are met through increased participation, educational attainment, skills development and skills use to achieve greater productivity [1, 2]. SCOTESE held its inaugural meeting on 25 November 2011. The two of the Council’s five priority issues are:
1. Ensuring high quality tertiary education and training through strengthening of regulatory arrangements in the tertiary education and training sectors and promoting a sustainable and competitive international education sector.

2. Establishing a national tertiary education and training framework that drives responsiveness to labour market needs.

In the context of priority one, ensuring high quality tertiary education and training through strengthening of regulatory arrangements in the tertiary education and training sectors, demands are placed on universities to meet compliance guidelines. An example that impacts directly on the design and development of university curricula and subjects at all levels is the Australian Qualifications Framework [3, 4]. I will emphasise the Australian Qualifications Framework (AQF) is the national policy for regulated qualifications in Australian education and training. It incorporates the qualifications from each education and training sector into a single comprehensive national qualifications framework [3, 4]. The AQF was originally introduced in 1995 to underpin the national system of qualifications in Australia encompassing higher education, vocational education and training and schools and has undergone a number of revisions, especially the modification of the original twelve levels of qualification from certificate 1 to doctoral level to the current ten levels of qualification. Of the seven objectives of the AQF objective 2, contributes to national economic performance by supporting contemporary, relevant and nationally consistent qualification outcomes which build confidence in qualifications and objective 5, underpins national regulatory and quality assurance arrangements for education and training are related to compliance issues.

II. AUSTRALIAN EDUCATION THE FLOW ON EFFECTS

Now that the education context has been provided for Australian education the flow on effects will now be addressed and will focus on the influence of undergraduate bachelor level degrees. In terms of purpose the bachelor degree qualifies individuals who apply a broad and coherent body of knowledge in a range of contexts to undertake professional work and as a pathway for further study. Normally, generic bachelor level degrees such as in science and arts are three years in duration full-time study whereas professional degrees, such as engineering, pharmacy and law are four years. In terms of expected skill outcomes graduates will have the cognitive skills to review critically, analyse consolidate and synthesise knowledge; cognitive and technical skills to demonstrate a broad understanding of knowledge with depth in some areas; cognitive and creative skills to exercise critical thinking and judgment in identifying and solving problems with intellectual independence; and communication skills to present a clear, coherent and independent exposition of knowledge and idea. These skills are presented in very generalised terms as are the following in the context of application and knowledge.

In terms of application of knowledge and skills graduates will demonstrate initiative and judgment in planning, problem solving and decision making in professional practice and/or scholarship; adapt knowledge and skills in diverse contexts and displaying responsibility and accountability for own learning and professional practice and in collaboration with others within a broad parameters. In terms of responsibility for accreditation and development, “accrediting authorities and those developing qualifications for accreditation must adhere to the AQF specifications for this qualification type and any government accrediting standards for higher education when accrediting a Bachelor Degree qualification,” (in this context universities) [3, p. 46].
III DEVELOPING A FULLY ON-LINE DELIVERED EXERCISE AND SPORT SCIENCE BACHELORS DEGREE

The next step is to integrate diverse inputs in terms of developing a fully on-line delivered exercise and sport science bachelor level degree that displays AQF compliance, e-learning technology, applications pedagogy-andragogy principles, that covers the subject area that represent exercise and sport science and all delivered via distance/external mode using e-learning management systems. In other words, blending learning theories and approaches for e-learning, e-learning pedagogical strategies, e-learning tactics and e-learning technology.

The first step is the developing the curriculum is the set of courses, and their content, offered at university [5]. Within Australia professional organizations are attempting to make universities compliant in terms of the curriculum offered by Australian universities in the domain of exercise and sport science such as the Exercise and Sport Science Australian (ESSA). In essence that believe they have authority in accrediting exercise and sport science programs and provided universities who wish to gain this accreditation a 126 page document with specific compliance criteria including specific micromanaged content in the subjects and subject sequence undertaken [6].

The units/subjects of study at Charles Darwin University CDU follow this model as shown in Table 1.

<table>
<thead>
<tr>
<th>Unit type</th>
<th>Credit Points</th>
<th>Specific requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Common</strong> (2 units)</td>
<td>20</td>
<td>Units totalling 20 credit points selected from Common Units available at the time (e.g. units coded with a prefix of “CUC”). Students must complete the compulsory regional and indigenous issues unit (CUC107) and one of the two academic skills units. CUC107 Cultural Intelligence and Capability (compulsory) Plus either: CUC100 Academic Literacies or CUC106 Design and Innovation: Communicating Technology</td>
</tr>
<tr>
<td><strong>Core</strong> (16 units)</td>
<td>160</td>
<td>Compulsory Core units totalling 160 credit points from units detailed below: ENG429 Biomedical Engineering, PSY140 Introduction to Psychology A, SBI171 Anatomy &amp; Physiology 1, SBI172 Anatomy and Physiology 2, SBI209 Design and Analysis of Biological Studies, SBI261 Functional Anatomy, SPE205 Biomechanics 1, SPE206 Exercise &amp; Sport Psychology 1, SPE209 Exercise Physiology 1, SPE210 Motor Control &amp; Development, SPE305 Exercise &amp; Sport Science Practicum, SPE309 Exercise Physiology 2</td>
</tr>
</tbody>
</table>
The progression is 100 level units are year 1, 200 level units are year 2 and 300 level units are year 3. The expectation in the AQF model is a progression in depth of knowledge and skills as the student progresses from level 100 to level 300 units.

IV LEARNING THEORY PARADIGM

For those students undertaking the fully on-line external/distance degree the application of learning theory/paradigm was based on andragogy or adult learning as the majority of students in the BESS program are adult learners females and in their early thirties who are returning to study. Using this paradigm [7] it is believed that:

1. Adults are motivated to learn from being in situations in which they see a need to learn. Consequently, adult learning settings should begin with topics that address the adult audience’s current learning needs. At this point in time Australia has a significant national health problem related to obese and overweight adults and children and many of the topics in nutrition, exercise and health, anatomy and physiology and exercise physiology, exercise and sport psychology relate specifically to evaluating, understanding and treating this condition via exercise sport psychology and nutrition. The topic has a significant and direct social and health context for students.

2. Adults are oriented to the broad range of affairs in life, not to narrow subjects. Thus, adult teaching should be multidisciplinary rather than subject-oriented. Third year units allow for overlap of unit content when they undertake the two 300 level units in year three Advanced Studies in Exercise and Sport Science which promotes a multidisciplinary approach.

3. Adults learn from their experience. Therefore, the most productive adult learning comes from the analysis of adult experience. Both cased based problem solving and problem based learning approaches are implemented especially in 200 level and 300 level units, which are built around student experiences in exercise and sport as well as the social context of nutrition and exercise in the Australian community.

4. Adults have a deep need to be self-directing. Therefore, teaching adults should be involved in setting the agenda for their learning. The learning agenda allows the students at second and third year to select topics that interest them from a large range of potential topics within such subjects as exercise and sport.
psychology, biomechanics, exercise physiology and advanced studies in exercise and sport science. An opportunity to specific integrate unit information into their world view (some educational neoconstructivism [8])

5. Individual differences broaden and harden with age. Therefore, adult teaching should make allowance for differences in style, time, place, pace, focus, and method. Distance/external fully on-line delivered education enable learning to suit the students’ day to day needs as education can be more easily integrated into their unique priority of needs and time demands.

V E-LEARNING MANAGEMENT SYSTEM

The next step is the development and delivery of contents is via the e-learning management system hosted by Blackboard. The Blackboard Learning System is a virtual learning environment and course management system supported by CDU’s LearnLine experts to assist staff developing their LearnLine sites for the new distance-external mode of the BESS degree. Staff who taught or were to teach the subjects to be migrated to distance-external mode were allocated a subject content specialist, as well as with expertise in Blackboard functionality as the Blackboard web based system is the underpinning structure of CDU’s LearnLine system. The funding per subject is substantial in terms of funding for external experts, internal support, up skilling staff both with software technology, hardware technology and application of pedagogical/andragogical theory and principles.

Using this LearnLine system functionality permits the students to:

- View and download content. PowerPoint’s, MP3 podcasts, links to videos, websites, learning activities, student assessments and Blackboard tutorials for staff and student users.

- Interact with your lecturer and fellow students via a range of communication tools both real time and asynchronously. Blogs, Blackboard collaborate, emails, discussion board, wikis, journals and so on.

- Undertake assessments and upload assignments under Safeassign

- Track student progress and grades. Staff facility for whole of class tracking and individual students to track own assessment performance.

- Join online classrooms with Online Classroom collaboration tools and discussion board.

- Listen to lecture podcasts. MP3, websites and videos.

VI INTERNAL LEARNLINE WEBSITE COMPLIANCE AND RESOURCE DEVELOPMENT

However, another compliance issue involves all unit/subject websites passing a CDU quality audit conducted by LearnLine staff prior to release to CDU students. Such compliance involves copyright, minimum information for students as unit information, introductions, some lecture materials and assessments; and checks using 2012 Blackboard Exemplary Course Rubric [9].

One of the major problems with fully on-line science based subjects is how to manage practical classes using instrumentation and conducting evaluations that are an integral component to many exercise and sport science units. One method is to supplement student learning by conducting on campus student practical
intensives where the students’ actually attend practical, whereas another method is the virtual classroom where students view and respond to practical demonstrations in terms of instrument set-up, data acquisition and data analysis. A useful resource which the university subscribes to is Online - Sports Medicine and Exercise Science in Video [10] and which provides 219 videos totaling 268 hours of viewing across the domains of functional anatomy, exercise physiology, sport psychology, biomechanics, advanced studies in exercise and sport science, and exercise and health. These can be inserted within learning materials and learning activities to provide a comprehensive virtual classroom for exercise and sport science. According to the publishers the resources are “the most extensive video collection ever assembled in the areas of fitness and health assessment, disease management, injury treatment, nutrition, medical fitness, sport science, work-site wellness and exercise adherence” [10].

In addition, to extensive video resources most exercise and sport science textbooks some complete with extensive supporting materials that can uploaded onto LearnLine sites and these include chapter by chapter lecture driven PowerPoint presentations, streaming MP3 podcasts via textbook authors and subject experts, learning activities and chapter quizzes both random and non-random question selection, usually loaded via the software Respondus [11].

VII DEVELOPING AND STRUCTURING ASSESSMENTS

Structuring assessments to be compliant with AQF expectations within a bachelor’s degree and within year of learning within the degree is delivered in the following format in the core units in the BESS degree.

Year 1 involves some small assignments, some centralized examinations and dependence on multiple choice questions (MCQ’s).

Year 2 extended assignments (self-selected topics), simulations producing a research report (none self-selected), group based activities (self-selected) via a PowerPoint presentation and centralized examination (none self-selected) and all downloaded and uploaded via LearnLine.

Year 3 extended assignments (self-selected topics), simulations producing a research report (none self-selected), group based activities (self-selected and using on-line student collaborations) via a PowerPoint presentation and centralized examination (none self-selected) and all downloaded and uploaded via LearnLine. The emphases in these assessments are based on more complex models and which include multivariate statistical applications to exercise and sport science content.

In this context compliance with AQF and 2012 Blackboard Exemplary Course Rubrics re monitored internally via CDU internal quality assurance moderations. The newer learning and teaching 2013 quality assurance model for unit assessment items and LearnLine delivered units will require moderation via external peer review, although this process occurs already with moderation and quality assurance of CDU whole of undergraduate degrees.

VIII CONCLUSION

You are now finally at the step where the academic is able to deliver the fully on-line exercise and sport science degree built around the units/subjects utilizing fully on-line e-learning; supported by an extensive and comprehensive software (LearnLine built upon Blackboard), hardware (assuming the student has a
functional computer system to support LearnLine), the academic who has been trained to use LearnLine, trained in pedagogy-andragogy to use e-learning, has uploaded relevant resources for learning and teaching that are supported by the university e-learning management system. However all this is embedded in Australian and State Government compliance, the Australian AQF system; professional association compliance, ESSA; and internally driven university compliance, internal quality assurance of programs, units/subjects and LearnLine audits. The last and most important question is did the students learn anything and did compliance actually improve the product for our clients?

REFERENCES


