

Title

Students' experience of the use of an online learning channel in teaching and learning: a sports therapy perspective

Introduction and Background

A pivotal aspect of sports therapy teaching is practical and, as such, lecturers constantly strive to create the most suitable learning environment for students (Wilson, 2012). The use of online technologies in teaching practices in Higher Education (HE) has become more prevalent in recent years (Preston et al, 2012). This has granted more opportunity to utilise online resources to provide students the opportunity to learn both in class and independently. Allowing students more autonomy in their learning through directed study may foster context-based learning processes and promote self-constructed feedback (Roshier et al, 2011; El Sayed et al, 2013). This element of self-constructed feedback may encourage a problem-solving approach to learning (Mayer, 2003) which is of value in becoming a proficient sports therapist.

When the sports therapy learning channel was devised, the creators of this had in mind an online tool which would allow students to develop practical skills across a range of modules from levels four, five and six. These practical skills could be developed by utilising an online, easily accessible physical resource in the form of instructional videos utilising the YouTube platform embedded into the blackboard virtual learning environment (VLE) for sports therapy. The videos were designed to replicate practical skills taught in examination and assessment, manual therapy, taping and strapping and massage. It was anticipated that this would provide a tool of teaching in addition to lecturers performing demonstrations in practical settings within a module, but would not necessarily replace practical seminars and face to face interaction with lecturers. As such, a blended e-learning approach may yield a more positive student experience (Ituma, 2011). This type of learning strategy has previously been implemented by Bowley and Holey (2009) in manual therapy teaching, which may support the current study, as manual therapy instructional videos are an integral part of the learning channel. Maloney et al (2014) state that physiotherapy students' perceptions of internet-based learning resources lack understanding regarding preferences and uptake. Within sports therapy this is likely to be an even greater issue as, to date, the authors have identified no other sports therapy research relating to this topic.

Much of the current literature relating to the application of technology enhanced learning (TEL) has primarily related to nursing (Duncan et al, 2013; Kelly et al, 2009; Clifton and

Mann, 2011), physiotherapy (Coffee and Hillier, 2008; O'Brien, 2015; Maloney et al, 2013a,b,c; Maloney et al, 2014; Sole et al, 2013) and medicine (Buch et al, 2014). As such, there is a paucity of literature relating to the use of pedagogical online resources in sports therapy teaching. Only a few studies (Kelly et al, 2009; Bloomfield and Jones, 2013; Maloney et al, 2013a; Sole et al, 2013) have addressed students' perception of such online technology available through the VLE as the main aim of research, but rather have focused on knowledge transfer and enhancement by assessing students' performance quantitatively. This has been achieved by considering student grades (Maloney et al, 2013b) with additional information on perceptions provided, such as focus group interviews (Bloomfield and Jones, 2013; Coffee and Hillier, 2008).

The researchers consider the student experience of this learning channel to be of benefit to sports therapy teaching as it will allow lecturers the opportunity to build on aspects raised within the questionnaire responses, allowing a student-focused framework to be created and introduce a greater insight into student perceptions. This diminishes the chance that the learning channel is built purely on lecturer thoughts and beliefs about teaching (Maloney et al, 2013b). Furthermore, it places the student perception at the heart of future additions to the learning channel.

Kelly et al (2009) suggest that, due to increasing student numbers, 'procedural consistency' (p.293) may be relevant. From a sports therapy perspective this is also something to consider as lecturers team teach, and it was therefore anticipated that the learning channel would support consistency in teaching (Sole et al, 2013). Kelly et al (2009) discuss that in nursing their research indicates a positive perception of the use of videos for teaching. However, they suggest that this should not replace lecturer demonstration. Indeed, research has not been positive for the replacement of face to face teaching in physiotherapy studies (Coffee and Hillier, 2008). It may be of interest to examine this within sports therapy students who also have competencies regulated by a governing body (The Society of Sports Therapists). Supporting Kelly et al's (2009) findings, Sole et al (2013) studied physiotherapy students' perceptions of a DVD based resource to assist with learning practical skills. Their findings indicated, through focus group interviews, that students found the DVD useful in creating a visual resource outwith seminars and also agreed with their initial hypothesis that students would find the DVD helpful in creating consistency across teaching. Furthermore, as class sizes in sports therapy programmes increase, so does the dependency that students work independently whilst not in direct contact with lecturing staff. Time constraints and availability of teaching staff (Maloney et al, 2013b; Coffee and Hillier, 2008) may support an alternative to specified practical activity which is purely lecturer led. Instructional videos

may provide a suitable adjunct (O'Brien et al, 2015) to promote learning of practical skills beyond traditional avenues of teaching, thus enhancing the student experience.

Clifton and Mann (2011) support the use of YouTube as a learning tool in nursing, suggesting that students who utilise this resource retain information more effectively. This may be pertinent to consider in sports therapy and is the platform utilised for students to gain access to the learning channel videos discussed within this paper. Similarly, in physiotherapy practice, Preston et al (2012) utilised an online e-learning resource package in which practical demonstrations were included and concluded that students' performance of practical skills was enhanced when using the resources and that this supported enhancement in clinical reasoning. Student feedback was also very positive. As clinical reasoning is a valuable component in sports therapy it would be interesting to investigate and gain insight into sports therapy students' perception of the learning channels effect on teaching and learning. Conversely, Azer et al (2012) determined that anatomy based skills training videos freely available to view on YouTube were, in the main, of poor quality. However, the current study produced instructional videos which were filmed, edited and uploaded by sports therapy lecturers, thus maintaining standard of proficiency and meeting learning objectives.

The aim of this paper was to gather qualitative student responses using a thematic analysis to increase depth of knowledge and understanding of the student experience within sports therapy teaching by utilising students' adoption of the sports therapy learning channel, identifying if such online resources are useful in teaching and learning within sports therapy. Roshier et al (2007) obtained responses from students studying at levels four, five and six. To date, this is the only study to undertake such analysis. Therefore, this information may allow differing aspects of the learning channel to be studied whilst understanding the usage patterns and perceptions of specific year groups as they develop their skills throughout the sports therapy programme of study.

Method

Design

The design was a qualitative exploratory study in which a questionnaire was constructed, consisting of seven open-ended questions designed to investigate students' experience of using the learning channel across modules in levels four, five and six. The questionnaire was self-constructed by the researcher and the questions included were aimed to gather data about students' experience of the learning channel allowing thematic analysis to take place.

A colleague of the researcher, a sports science lecturer, was invited to examine and trial the questionnaire to ensure face validity. The outcome of the trial supported the suitability of the questions to the participant sample and was not deemed ambiguous in nature or (mis)leading in any way. Thematic responses were considered and further analysed by comparing responses across levels four, five and six. This was determined by analysing a percentage of responses for each question.

The questions included were:

- 1) Why do you think the learning channel has been provided?
- 2) How and when have YOU used the learning channel? E.g watching videos in lectures, in your own time etc.?
- 3) How has the learning channel assisted you in your studies?
- 4) What did you find useful about the learning channel?
- 5) What did you find less useful about the learning channel?
- 6) Is there anything that you would like to see added to the learning channel to assist you with your studies? Please explain.
- 7) Do you think the learning channel will have helped you to achieve better grades in your practical exam this year?

Participants

A total of 164 undergraduate sports therapy university students studying on the BSc Sports Therapy programme completed the questionnaire from cohorts of level four (n=67), level five (n=51) and level six (n=46). To meet the inclusion criteria students had to be registered for the module in which the researcher was providing the questionnaires. The participants were provided with information regarding the purpose of the study prior to being asked to give their consent to participation, and informed consent was obtained from all participants. They were informed that academic progress would not be affected by either participating or withdrawing from the study. Confidentiality was assured as each questionnaire was allocated a number to identify the student within the paper. The Faculty of Arts and Sciences Ethics Committee at Edge Hill University in the UK provided approval prior for the study to commence in accordance with the declaration of Helsinki.

Settings and Timescale

The study took place in April 2016 in a teaching room within the university campus. The participants were not time constricted to complete the questionnaire, which was provided in hard copy format only on that specific day.

Procedure

The questionnaire responses were assessed through a process similar to that included in a study by Batram and Bailey (2010) utilising inductive category building. The computer programme NVIVO 10 (QSR 2012) was used to assist with qualitative thematic analysis (Braun and Clarke, 2013) through categorisation and thematic organisation of data. Through this process common themes amongst the responses to each question were identified and then placed within categories which showed similar responses across the sample. Further investigation of results allowed categorisation within levels four, five and six to allow cross referencing and comparison across cohort year groups.

Results and Discussion

Four main thematic categories emerged from the qualitative questionnaire responses. These were based on perceptions gained from students relating to the sports therapy learning channel. The categories were: revision and consolidation of learning, handling and technique, accessibility and availability and visual and practical learning resource. Following identification of themes, the researcher determined that responses produced cross thematic perceptions particularly when considering exam preparation.

Diagram 1. Diagram of inductive thematic responses.

** Insert Diagram 1 near here **

Revision and Consolidation of Learning

Of the responses received, all students suggested the learning channel (LC) assisted in some form and this was evident across all questions. No negative responses were received relating to revision, and students' perception was entirely positive due to the additional resource (LC) available to support revision. This theme emerged as a consistent reason why students believed the channel was constructed and when students used the learning channel (200 responses). This is similar to the findings of Maloney et al (2013a). What was evident from the responses was that the usage patterns of the channel supported students utilising the resource for consolidation of skills in their own time and within practical

seminars. When examining across levels, first year students (level 4) utilised the LC more for revision outside of university (33/50% of responses) than levels 5 and 6. Student (64) suggested that it “Replicated initial teaching environment so was easier to recap”.

Therefore, revision was occurring as both independent study and tutor-led study in the form of participation and discussion of the content of the videos. As the channel consisted of instructional videos across practical modules, this may suggest that students found the videos useful after originally being taught the practical skills by the lecturer. This may support the previous literature regarding autonomous learning and active learning strategies (Wilson, 2012; Kelly et al, 2009).

Revision was prevalent when linked to questions regarding exam preparation and results. Consistent responses suggested that they believed exam results were improved by utilising this resource for revision purposes. There was an overwhelming response across levels to take advantage of the learning channel outside of university to assist with revision. This related to usage in relation to manual therapy and examination and assessment (E+A) and, in particular, preparing for exams. This was also a cross-linked theme with accessibility and availability. Student 145, a third year student explained that they “Watched in own time as revision, particularly before practical exams to refresh how techniques are performed safely and effectively”.

The terms re-cap and refresh were pre-eminent in responses, potentially purporting a value in creating resources which add benefit to practical skills but also to support the LC. For third year students who have a final year exam this includes the ability to apply practical skills learnt in levels 4 and 5. The learning channel may consolidate previously learnt skills as indicated by Bowley and Holey, 2009. Furthermore, impact on class sizes and interaction time with the lecturer (Maloney et al, 2013b) may be considered in relation to reducing the need for additional practice hours within the university practical rooms. However, further research may be required to identify positive or negative outcomes from a student perspective.

Handling and Technique

This was a major theme relating to improving handling skills and technique. This was particularly evident for question three, “How has the learning channel assisted?”, as 98 responses indicated this. The LC was created primarily to host videos of practical techniques to support lecturer demonstration and create consistency of teaching (Sole et al, 2013; Kelly et al, 2009). The student experience was positive regarding handling skills and this is possibly due to handling being a large aspect of what students used the channel for.

A second year student commented that videos “Enabled me to improve my positioning and handling when practising with different sized patients”.

Questions one and three had similar responses in terms of what students ‘thought’ the channel should provide (Q1) and what it ‘actually’ did provide (Q3). Once again, there was evidence of cross thematic responses with revision as many students suggested that they believed the LC allowed them more time to revise and therefore allowed for an improvement in handling and practical skills.

Student 45 pointed out that they “Look through the techniques in our own time but still doing it with the correct technique” and a first year student (123) stated the LC was provided “To help with visual learning on hand placements and techniques”. This latter comment supports a cross theme with visual learning resource. Moreover, students believed that the utilisation of the videos in seminars and practical sessions created a basis for revision whilst practising techniques taught in the same session. Indeed, 38 responses from levels 5 and 6 suggested that they utilised the learning channel in teaching sessions. This would support the views of Kelly et al (2009) and Coffee and Hillier (2008) as the videos are used to complement taught practical and handling skills rather than replace them. In addition to this, students indicated that they utilised the LC at home, thus supporting active learning strategies (Ituma, 2011) in multiple locations and environments. Student 11 wrote “The videos helped me to understand handling techniques better than reading from a book”. Although the authors examined text e-learning, this statement supports the research of Buch et al (2014) who concluded that video-based e-learning is superior to text-based e-learning in the context of teaching practical skills.

Students from levels 5 and 6 specifically discussed the effectiveness of the LC in learning and consolidating manual therapy techniques. This may be a point for discussion as handling and patient position must be both safe and effective when learning these types of techniques and meeting the standards of proficiency required by the Society of Sports Therapists (Society of Sports Therapists, 2016).

Once again, students noted the positive element of the learning channel when preparing for exams. A second year student (15) explained in relation to question one that the LC “Offers guidance of the appropriate techniques required to do well in the practical exams”. This supports the findings of Maloney et al (2013c) who discussed the use of an online physiotherapy database which was accessed more during periods when exam preparation was foremost.

Not all comments were positive when discussing handling as 21 responses indicated issues with variance in technique between the videos and lecturers, questioning aspects of the videos. Student 81 stated

“Some hand placements were difficult to follow as the module leader said alternative approaches were easier. So got confused which to go off.”

Both Sole et al (2013) and Roshier et al (2007) evinced similar issues in both staff and student responses in their studies, supporting the above, as students stated that they were disappointed when tutors questioned the handling on the DVD used in the study (Sole et al, 2013) or issues with variations in teaching from staff (Roshier et al, 2007). This could indicate that, although lecturing staff teach similar elements on the sports therapy course, differing opinions on handling were evident. However, as students are asked to consider the videos as adjuncts to teaching and not replacements, clinical reasoning and judgement should be utilised to support handling skills. Perhaps, in future, this would necessitate lecturing staff addressing the issues raised by Kelly et al (2009) regarding consistency of both practical and verbal feedback.

Accessibility and Availability

This was considered a main theme and relates to student access to the learning channel allowing for independent study. This is linked with the theme relating to consolidation of learning away from university. Although only 24 responses were linked to this theme in question one, when examining question four regarding what students found useful, 108 responses (45%) considered ease of access and availability as positive factors. A first year student suggested (74) the LC was provided “To help students access this at any time to aid with their studies and develop their skills”. Furthermore, many positive responses relating to usefulness were contributed. Student 96, a first year, supported this by saying “The fact they helped me with my studies both in an out of class made them useful”

Several students indicated that having access across multiple devices such as phones and tablets was useful and allowed ‘quick’ access to the LC videos at any point in the day. Several positive aspects of the LC were disclosed in responses, such as access 24/7 and easy access at home, supporting the idea that convenience was a key issue.

One interesting point raised by a second year student (11) stated that “[The LC] provides the ability for us to go and watch the videos rather than constantly asking the lecturers” and from student 9 “I am able to access it any time and helps to answer the question I have without needing assistance from the staff (question dependent)”.

This may link with the theme on revision and is contrary to the themes generated by Kelly et al (2009) as their students suggested they did not like the inability to ask questions. However, this may be less prevalent in the current study due to the fact that the lecturing staff were performing some of the techniques and students may have assumed they were correct. Across levels, there was little difference in response rates which may suggest all students deemed this thematic issue beneficial with no greater importance placed within year groups. The YouTube platform was positively accepted when embedding videos into the VLE and findings were similar to that of Clifton and Mann (2011). Due to this, there were limited negative responses (23) within this theme and these related to some students’ inability to access the LC, issues with loading of videos and general issues with technology. As technology enhanced learning and the virtual learning environment grows (Preston et al, 2012), invariably some students will be less proficient in using such tools than others. This may require staff to consider how blended learning and pedagogical processes not readily grasped and understood by some students can be incorporated more effectively.

Visual and Practical Learning Resource

This was considered a main theme encompassing aspects of both a visual and practical nature. Student responses relating to this theme seemed to suggest that students were concerned with ‘correctness’ and believed that lecturer demonstration was the most important factor with the videos providing a supplementary learning resource comparable to the findings of O’Brien et al (2015). Fifty-two responses classified the learning channel as a ‘learning resource’ when asked why it was provided. Student 129, a first year student, stated that the LC was provided “To help guide us through our module and support our learning when it comes to practical sessions and exams”. Once again, this statement addresses the cross-thematic issues raised in the paper relating to exam preparation and revision.

A pre-eminent issue raised was that relating to the LC as a visual aid. Student 118 stated “Seeing a physical example was easier to understand from rather than just words on a sheet.” Similar comments were evinced by physiotherapy students in a study by Maloney et al (2014). Thirty-five responses highlighted a lack of audio/sound/commentary within the videos. The videos were designed as an adjunct to lecturer demonstration and to allow

independent study to become less challenging by having a visual aid to assist with learning, and ultimately improve the student experience. Audio content was purposefully excluded to promote autonomous learning and generate a student's ability to clinically reason by having to read around the theory of the subject matter. It was anticipated this would create safe and effective sports therapists. However, in this age of technology enhanced learning and the demand by students for immediate access to resources, this appears not to have been favourably acknowledged by some students. Student 63, a third year student commented that

"With the mobilisation video it states the grade of techniques but not the benefits of different grades"

The suggestion from student 74 that the techniques were shown too quickly was commented on by 18 students in total and related to the length of the videos and inability to take time to watch them. However, as the videos were embedded into the LC through the YouTube platform, all aspects of YouTube connectivity were available including the ability to pause and rewind video content. It is unclear if students failed to recognise this or still felt that longer videos would have avoided the requirement to pause and rewind. However, 58% of responses relating to what was less useful about the LC came from level 4 students. This may be due to students in their first year of study feeling as if they require more guidance, therefore autonomous learning may be less forthcoming in this year group (Roshier et al, 2007). Student 41, a second year student, argued "That mobilisations were not repeated so I had to keep rewinding the videos". Student 159 did constructively suggest of the videos that they "Need more repetitions of each technique prior to moving on".

Fourteen responses indicated the LC was a useful learning resource due to the variety of content available. As discussed previously the LC was created to complement teaching of practical modules including assessment, massage and manual therapy. Due to this, the channel contained resources to assist all levels of study, and students could watch videos of content taught in previous academic years. In relation to question four (useful aspects of the LC) student 20 advocated the LC, stating positives were "How specific the content is to my own requirements and the good amount of resources available for help with my modules." This supports the rationale for constructing the LC as both a teaching aid and learning resource applicable across all levels of study.

Limitations and future recommendations

It was anticipated a correlational analysis of student grades with the responses to question 7 (Do you think the learning channel will have helped you to achieve better grades in your practical exam this year?) would have been undertaken to identify a relationship between pedagogical aspects of the student experience of the learning channel and quantitative values relating to student grades. However, this was not possible due to all but one student stating that the LC would help them achieve a better grade. A future paper may wish to utilise student grades and an analysis of blackboard tracking of usage, release of the videos and number of hits at certain points in the academic year/module and semester.

Conclusion

The aim of the current study was to gain an understanding of the student experience of the learning channel in sports therapy teaching. The learning channel was received very positively by students across levels four, five and six. Themes that emerged were consistent with previous research examining the student perception of technology enhanced learning strategies (Preston et al, 2012; Bloomfield and Jones, 2013; Sole et al, 2013). Of the 164 students there was little perceived difference across levels. It is encouraging that students had similar experiences and deemed the channel to be useful for both revision and handling and technique. Responses to question 7 raised some interesting points relating to exam preparation and whether students believed that the LC helped them achieve a better grade.

Comments reflected this positively and although this is pleasing, from a teaching perspective responses may indicate that students had a clear direction for utilisation of the LC in helping them pass exams. This may create an ethos that the learning channel and accompanying videos are provided not to create autonomous, critical thinking students but those who are exam driven. This is further supported by the negative comments related to commentary on the videos. The use of the YouTube platform embedded into the blackboard VLE was well received and was deemed a useful platform for viewing videos (Clifton and Mann, 2011). It is anticipated that with the addition of rehabilitation programmes and exam preparation videos such pedagogical tools and active learning and blended e-learning strategies (Ituma, 2011; El-Sayed et al, 2013) will further support the student experience. The results of the current study support blended e-learning where both the learning channel and lecturer interaction with students can be provided. Similar findings were evinced by Bloomfield and Jones (2013) in nursing education. Where students have mentioned believing in learning styles and strategies the researchers acknowledge that the paper did not aim to address learning styles directly.

Furthermore, independent study and autonomous thinking are encouraged due to the off-campus availability of the learning channel. Weeks and Horan (2013) considered that using peer learning strategies was welcomed by physiotherapy students and was more effective than individual learning. Learning channel videos for level 4 students were performed by level 5 students and as such the current study findings would agree with these findings potentially supporting peer involvement for exam preparation.

In this current academic climate of increasing student numbers and Higher Education now recognised as a consumer industry, the student experience is paramount to creating an engaging, motivational teaching environment within sports therapy teaching practice: therefore the development of both academic and clinical skills requires addressing factors where blended e-learning processes marry together with traditional pedagogical teaching strategies. Overall, the ability for students to consolidate knowledge and practical skills relevant across a variety of modules makes the learning channel a useful adjunct to teaching strategies already employed.

Key Points

There is a paucity of research in sports therapy practice relating to the student experience of e-learning strategies.

Blended and active learning strategies in the form of a sports therapy learning channel were received positively by sports therapy students across cohorts.

Across levels four, five and six the inclusion of videos to teach practical skills was supported with little identifiable differences in opinion across cohort levels.

Students believed the learning channel was a favourable adjunct to traditional lecturer demonstration of practical skills.

Students perceived improvements in exam grades through utilising the learning channel and suggested this allowed visual learning strategies and independent, clinically- reasoned study.

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