Development and evaluation of ‘reusable learning objects’ (RLOs) to enhance the learning experience of international healthcare students
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Introduction

This report describes a project implemented by a team in the School of Nursing, Midwifery and Physiotherapy, University of Nottingham who are involved in teaching international postgraduate healthcare students.

The project aim was to support international healthcare students to learn about the UK healthcare context and to enhance their ability to engage with UK healthcare students by developing and evaluating two reusable learning objects (RLOs): one on the UK National Health Service (NHS) and one on UK health professional roles.

Background to the project

A small but important segment of the international student market comprises international healthcare practitioners coming to the UK to advance their professional practice (these are usually qualified practitioners undertaking top-up BSc degrees, MSc or PhD programmes). Research indicates that these students come to the UK with high expectations of interacting with the UK healthcare system in order to develop and compare their professional practice (Zeilani et al, 2011; Evans & Stevenson, 2010; Evans & Stevenson, 2011; Evans 2007). It also shows that students are sometimes disappointed at the lack of opportunities that they encounter to engage with UK healthcare practice, and that a lack of understanding of the UK health system may affect students’ learning, particularly at the beginning of their course (Evans & Stevenson, 2011). For example, a recent research study conducted by the project team (involving focus groups with 15 international students and a survey of 37 international students) suggests that students may feel excluded from participating in learning about healthcare issues because they do not fully understand the NHS context that is implicitly referred to by teachers and UK students alike (Evans et al, 2012). Some of the responses to statements in the survey illustrate this point:

- 71.5% agree/strongly agree: “Lecturers mainly use examples from the UK health service”;
- 57.1% agree/strongly agree: “My understanding of the research literature would be better if I knew more about the UK healthcare context”;
- 80% agree/strongly agree: “I need more information about the UK healthcare context.”

This quotation below from an international student further illustrates the issue:

“All the while we were having that module - the lecturers were using those terms a lot and our fellow students; actually I felt left out of it and I had to force myself to go on the internet and find out what ‘NICE’ is and what ‘clinical governance’ means – even the NHS. You know, I didn’t know what the NHS was. Because everyone was saying ‘NHS’ and ‘PCT’ – they were all terms they were using and I was thinking “this is really not the course for me”. I was very frustrated and told myself, that if it continues like this – what am I taking back home? It was only much later on when I started reading that it all began to get into perspective” (Midwifery MSc student from Africa, in Evans et al, 2012)
The project team felt that in order to promote inter-cultural learning about healthcare, more attention needs to be given to making the UK NHS context more explicit (cf. Carroll, 2005). There are currently very few learning resources available within the sector to support this endeavour. The current project was designed to provide international healthcare students with an overview of the UK healthcare system and professional roles.

Rationale for developing RLOs

RLOs are small, granular e-learning resources. They generally utilise multi-media elements to engage the learner in a visual and interactive learning experience, and are increasingly being offered as open education resources, which can be easily accessed, used, re-used and shared. An RLO is usually developed around a single learning objective or goal, and comprises a stand-alone resource consisting of four components (Wharrad et al., 2010; Windle & Wharrad, 2010):

1. **presentation**: a presentation of a concept, fact, process, principle or procedure to be understood by the learner in order to support the learning goal;
2. **activity**: something the learner must do to engage with the content in order to better understand it;
3. **self-assessment**: a way in which the learner can apply their understanding and test their mastery of the content;
4. **links and resources**: external resources to reinforce the taught concept and support the learning goal.

Advantages of RLOs for international students

The advantage of RLOs is that they can overcome the problem of information over-load that international students often experience at the beginning of their courses when most induction activities take place. Their design enables students to go back to key information as required, and to repeat the learning until key concepts have been understood (Lynn et al., 2008; Wharrad et al. 2001). In addition, RLOs were felt to be particularly suitable for international students as the information is presented in both visual and auditory form. Any words that may not be understood aurally are also presented visually. Moreover, students can pause the RLO to look up a word or to repeat a section.

Process and management of the project

The project adopted an inclusive participatory approach summarised in the table overleaf. A project lead (Dr. Evans) worked together with a core team consisting of two academic staff who are e-learning experts, one learning technologist, one international PhD student and one UK PhD student (both of whom acted as research assistants). The design and testing of the RLOs followed a seven-step process that is well established in the School which has been part of a national RLO centre for excellence in teaching and learning (CETL) (Wharrad et al., 2008).

Table 1: Seven-step RLO development process

<table>
<thead>
<tr>
<th>Steps</th>
<th>Activity</th>
<th>Reflections</th>
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<tbody>
<tr>
<td>1</td>
<td>Interactive one-day workshop to generate the thirty five international MSc and PhD healthcare students and five UK students (health professionals) attended. The</td>
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<td>Step</td>
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<tr>
<td>1</td>
<td>Content for the RLOs</td>
<td>Six teams of students brainstormed ideas for the RLOs and developed storyboards (three on the NHS and three on health professional roles). Workshop began with an overview of the project and of the principles of e-learning development. Each participant received a ‘certificate of attendance’ at an e-learning development day. Evaluations were extremely positive. Many commented on how much they had learnt and how much they had enjoyed the opportunity to meet each other and to have some fun (see Appendices 1, 2, 3 &amp; 4 for the workshop flyer, certificate, photos and a storyboard example).</td>
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<tr>
<td>2</td>
<td>Core team reviewed and synthesised the six storyboards</td>
<td>One composite storyboard was developed on the NHS and one on Nursing. It was decided to focus the 'health professional' RLO onto one profession only (Nursing) as it became evident that there would have been too much content if other professions had also been included.</td>
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<td>3</td>
<td>Two team members developed detailed RLO specifications including suggestions for the text, animations, case studies, video-casts and assessments</td>
<td>The RLO specifications were then sent out to be peer reviewed by the project team and by three independent experts (UK healthcare/academic staff). Feedback was obtained using a standard form (see Appendix 5) and modifications made.</td>
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<td>4</td>
<td>Media production of the RLOs</td>
<td>A first version of the RLOs (the media) were developed by an experienced learning technologist.</td>
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<td>5</td>
<td>Peer review/formative evaluation of the RLO prototypes</td>
<td>Links to the RLOs and standard evaluation questionnaires (Appendix 6) were sent to all those who participated in their development (n=40). 26 individuals gave feedback (approximately 65%). The feedback was overwhelming positive (see below). The RLOs were also reviewed by four international healthcare students who had not participated in the development workshop. Again, their feedback was very positive. Some minor technical changes were made but no substantive changes were necessary.</td>
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<td>6</td>
<td>RLOs finalised and made available through the School’s open access RLO Repository</td>
<td><a href="http://sonet.nottingham.ac.uk/rlos/">http://sonet.nottingham.ac.uk/rlos/</a></td>
</tr>
<tr>
<td>7</td>
<td>Summative evaluation to explore impact of the RLOs on the student learning experience</td>
<td>This will be conducted in October/November 2012 with a new group of international students.</td>
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**Peer review/formative evaluation of the RLOs**
After the RLOs were developed, a formative evaluation (step 5 in the table) was undertaken to assess student and staff views of their usefulness, relevance, interest, engagement, clarity, audibility, appropriateness/accuracy of content and assessment and ease of navigation (see Appendix 6). As this was a formative evaluation, the team’s interest was in identifying key design, content or navigation issues rather than undertaking a systematic assessment of learning or other outcomes (this will be addressed in a summative evaluation planned for October/November 2012).

The vast majority of comments about the RLOs were extremely positive.

**NHS RLO evaluation**

The main criticisms of the NHS RLO related to one of the animations which was felt to be confusing (this was changed). Some respondents found the narration too fast, others too slow. All respondents felt that the RLO would be useful. Some examples of comments are given below:

- “The RLO looks very interesting, coherent and conducive for learning”;
- “The narration is extremely clear, audible and engaging”;
- “The animations, colours and images seem to strongly support the learning of the subject”;
- “The interactions are appropriate, coherent and engaging”;
- “The RLO navigation is easy, clear and engaging”;
- “The assessment is appropriate and related to the info presented by the RLO”;
- “This RLO seems to be extremely useful for all the UK and international students in order to better understand the NHS in the UK”;

**Nursing RLO evaluation**

The main comments relating to the Nursing RLO were that it could be quite time consuming to complete as it contained five video-casts of ‘a day in the life’ of different nurses. The videos also slowed the download time. There were two comments that the assessment did not cover all the RLO content. This was not changed however as the team was reluctant to make the RLO even longer. All other comments were very positive, for example:

- “The RLO was easy to use and presents the information in an approachable way”;
- “It provides really concise information about UK nursing. Therefore it is easy for the user to pick out specific bits of information on each area i.e. nurse education, areas of nursing and the band system”;
- “The videos are interesting and easy to watch. They provide a good insight into some of the different types of nursing roles that are previously identified in the narrated text. Having a variety of different nurses represented means that there doesn’t appear to be information repeated and each video like the roles are very different and therefore allows the user to maintain interest”.

**Key project outcomes**

**Availability of RLOs**
The two RLOs are now freely available in an open access repository:

2. Understanding Nursing within the UK: [http://www.nottingham.ac.uk/nmp/sonet/rlos/placs/uk-nursing/](http://www.nottingham.ac.uk/nmp/sonet/rlos/placs/uk-nursing/)

**Impact on international student learning and support**

Although a summative evaluation has not yet been undertaken, many international students commented that the RLOs would be useful for future students. The main benefits of the RLOs were cited as providing signposting, explanation and clarification of a very complex health service:

- “The RLO is brilliant. On the whole I love the RLO! Thanks”;
- “They are really helpful to me as they allow a better understanding of the NHS and its professionals in the UK”;
- “Very good RLO, these could make me clear picture for health system here. Well done”.

The team were particularly gratified by the comments of one international PhD student who had also studied in the UK for an MSc, who concluded that: “Although I have been here for two years now, I have still learnt a lot from these RLOs. There are lots of details that I never knew”. Another PhD student commented that: “I wish I had seen these when I first came, it would have helped me to understand this complex system that we are taught so much about but which is like a foreign language to us”.

The Nursing RLO was described in the evaluations as being specifically useful for healthcare students, however many students/staff felt that the NHS RLO would be useful for any international students:

- “I think it can be very helpful to all new international students. I wish I had it when I started”;
- “This will be useful for all students, in all courses”.

Therefore, the NHS RLO in particular, will be of use for any institution that supports international students.

**Lessons learnt from the RLO development process**

**Benefits from involving international students**

The project team were overwhelmed by the level of participation and creativity that the international students brought to the RLO development process. Their participation ensured that the RLO content was relevant and useful for their needs. For example, the students wanted the NHS RLO to be quite practical and designed very much from the perspective of helping a new international student understand how to navigate the system (as opposed to providing a more academic understanding of the service which is what the team had originally envisaged). This demonstrates the value of user-led design. As a result, we feel that the NHS RLO in particular will be valuable to any international student, not just for healthcare students.

**Engaging international students**

Many international students commented on how much they had enjoyed the RLO design workshop.

- “I just want to thank you I really enjoyed and got benefit from this workshop”;
- “Congratulations on the RLO! I am really happy to have contributed to its development; it is a true representation of what went on that day”.


Attendance at the workshop was higher than expected and the evaluation response rate was also high. Student engagement was perhaps helped by the fact that students were sent personal emails by the project lead and workshop participants received a certificate of attendance and a high street shopping voucher as a token of appreciation. The workshop itself included ample snacks and food from a variety of world regions.

The workshop ethos was designed to be informal and fun and many students commented on how much they had enjoyed an opportunity to relax and share with one another.

**Promoting intercultural interaction**

The RLO development process was also an opportunity for the UK staff/student facilitators and international students to interact in a meaningful way outside of the classroom. All the UK participants commented on how much they had learnt and how interesting it had been to hear about international student experiences. Several international and UK students suggested that the School should organise structured social events in future to promote similar learning and sharing – and this will be implemented from 2012/2013.

**Challenges**

A challenge of the participatory process was how to deal with multiple, sometimes conflicting suggestions for content and structure. Inevitably, compromises had to be made. The biggest change to the original plan was the decision to focus the health professions RLO just on the nursing profession rather than providing an overview of Nursing, Midwifery and Physiotherapy. The workshop indicated that students wanted considerable detail and the principles of good pedagogical design meant that keeping the focus on one main issue (i.e. one profession – Nursing) would result in better learning than trying to cover too much material. The project team hopes to develop two additional Midwifery and Physiotherapy specific RLOs over the coming year. The Nursing RLO was, therefore, specifically designed so that it will be relatively straightforward to adapt to the other health professions by using topic-specific headings that are common to all (and that were suggested in the workshop) i.e. education, regulation, career pathways, specialist/advanced roles, 'day in the life videos, and diaries.

**Recommendations for similar projects in future**

Although the participatory design was beneficial, it also proved challenging due to the number of people involved in the workshop and in the peer review process. In future, we feel it may be easier to work with a smaller (but representative) RLO development group.

**Dissemination of the RLOs**

**Within the School**

The RLOs will be integrated into the School’s induction activities for new international healthcare students in the 2012 Autumn semester and will be summatively evaluated via a questionnaire and focus groups.

**Within the University**

The University’s International Office will include the RLOs in their new student induction materials and a link to the RLOs will be available from various University of Nottingham websites.
Within the sector
After completion of the summative evaluation, the project team will submit a paper about the project to an academic peer reviewed journal.

The project team will submit an abstract about the RLO project for dissemination at relevant healthcare conferences and will disseminate information about their availability through two professional nursing journals, the HEA Health Sciences newsletter, the HEA website and other email discussion forums.

Recommendations regarding sustainability of the project
The RLOs themselves have considerable longevity. However, in order to maximise their potential impact, it is important that staff and students know that they are there and that they are used. For this reason, ongoing dissemination (even if just an email reminder), particularly at the beginning of each academic year, will be important. Best of all, we recommend that students are told about the RLOs as part of standard international student induction activities which can be carried out by international offices or individual departments. In particular, we recommend that international offices and university health centres place a link to the NHS RLO on their websites.

References


Evans, C. & Stevenson, K. (2011). The experience of international nursing students studying for a PhD in the U.K: a qualitative study, BMC Nursing. 10(11),


