The Role of E-Learning in Radiology Training in the UK.

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Learning objectives

This is a case study on the role of e-learning in postgraduate radiology training. It is based on the perceptions of trainees and teachers of the Cambridge Training Scheme, what e-learning means to them and how the RCR (Royal College of Radiologists) e-resource the R-ITI (Radiology Integrated Training Initiative) conforms to their expectations.

It is based on document analysis from the RCR on the R-ITI, interviews of teachers, focus group data and critical incident logs from trainees. It illuminates the current roles of e-learning in radiology training as the teachers and learners experienced them.

The discussion highlights substantial issues of the construct of e-learning by the teachers and learners, illuminating the potential limitations to the proposed benefits of this teaching tool.
Background

Medical education is increasingly using e-learning tools to enhance delivery of the curriculum because of the challenges facing educators, which include changes in health care delivery and advances in medicine.

However there is little empirical research into the role of e-learning in Radiology education. Much of the research is quantitative making use of surveys (Rowell 2007). Quantitative methodology provides some, but limited, understanding of the behaviour of users. The purpose of this exploratory case study is to better understand the behaviour of teachers and learners in a medium sized British training scheme when using e-learning in training.

Recently the Royal College of Radiologists (RCR), the Department of Health and the National Health Service (NHS) developed an electronic data base to enhance the delivery of the FRCR curriculum. This is in response to the acute rise in trainee numbers through three newly established Radiology Academies. This joint initiative resulted in an electronic database, the Radiology Integrated Training Initiative (R-ITI). It became available to all UK trainees in 2007 and is mapped against the FRCR curriculum and it was designed amongst other things to help with preparation of examinations. However the RCR 2008 survey uncovered overall low uptake.

Before R-ITI and other e-learning tools are universally accepted, empirical research is necessary to understand the behaviour of radiology trainees in using these tools.

The primary research question of this study was:

- What is the role of e-learning in postgraduate radiology and what might be the benefits?
- How does the R-ITI conform to the above expectations?
Findings and procedure details

An interpretive case study methodology (Pring, 2004) was used to provide rich description of a singular scheme and search for differences. This study was carried out in the Cambridge University Radiology Department during 2010-2012.

The participants are the Cambridge trainees; total of 33 with balance of both genders, age range from 24 to 40 years and a wide ethic mix. Nineteen trainees participated in the focus groups. The incident logs from another 8 trainees allowed almost full interrogation of the scheme.

5 teachers who represented the teaching faculty for age, gender, ethnicity, traditional and Academy schemes were selected for this investigation.

Data from teachers were derived from a semi-structured interview with standardised open-ended questions.

Data from learners derived from focus groups; the effect of power is significant in the interview process and the investigator considered this for the purpose of this investigation. In addition, we used critical incident technique to track the trainee's experience of a specific R-ITI episode (Flanagan 1954).

To capture the RCR’s view on the R-ITI, document analysis was used (Patton, 2002): The RCR views on R-ITI are available to all college members and the documents were an important resource of data to increase the understanding and validity of this investigation.

Data Analysis

The data collected by the methods outlined above was analysed inductively (Miles and Huberman, 1994). All data from each category were examined using the constant comparison method (Lincoln and Guba, 1985) to select and put related themes together across data sets and be as true to the data as possible.

Results and Discussion

The data from interviews, focus groups, critical incident logs and document analysis were integrated to illuminate the themes that emerged. There was a lot of convergence between teachers, trainees and the RCR with emergence of five strong overarching themes, which consisted of: personalised learning in relation to what encourages use of e-learning; accessibility, interaction, legitimacy of e-resource and motivation.
The level of articulation and honesty was impressive, for example one teacher (T4) was very honest about her personal practice saying:

"I am not very IT literate so sometimes for me actually it takes longer to access things from an internet source than by doing it the old fashion way"

What did participants think e-learning mean?

Data from the focus groups and interviews demonstrates that all the teachers and trainees are using e-resource in their current practice of teaching and learning but to varying degrees. There are a total of 19 e-resources used. Some student comments included: "any web-based learning", "use of computer/electronic media for self-directed learning" and "on the go learning". There is convergence with teachers who also used similar descriptors such as "any electronic tool for teaching", "self-directed access of resources via computer" and "distance learning".

Yes, there is a role

The majority of teachers and trainees in Cambridge and the RCR indicated that there is a role for e-learning in radiology training in the UK. However it was not straight forward to identify the exact nature of this role, given that 5 out of the 19 trainees in the focus group articulated that they would only engage in e-learning if it was made compulsory. This opinion concurred with the practice of two teachers (T3 and 4) who engaged with Medportal, a virtual learning environment, in teaching undergraduates because they had to. They did not choose e-tools in their radiology teaching.

The roles which the trainees and teachers mentioned were extremely limited, particularly when compared to the roles of e-learning mentioned in the literature in medical and higher education. The RCR tries to give credibility to R-ITI and is biased towards its use. Our cohort saw e-learning predominantly as a resource or reference tool, which is a very traditional viewpoint. The trainees did not imagine it as something that offers different pedagogical options leading to a different kind of learning experience.

A small minority (2) mentioned BREO (Bedfordshire Resources for Education On-line) at the end of a focus group discussion for collaboration, but all, when asked what e-learning meant to them, volunteered its role of a repository/resource only, which is very limited. This is a real issue because if we see e-learning from this perspective, the roles of e-learning will be narrow and are not contemporary.

Why is e-learning viewed as e-resource?

Is it because the training programme investigated operates within a traditional setting or is it because medicine is inherently traditional? Even within the role of personalised learning e-learning still has a narrow non-expansive role to the notion of resource. Could it be
that medicine/radiology is an apprenticeship and that with the loss of clinical experience through the European Working Time Directive (EWTD) we are using e-resource to 'fill the gaps'; i.e. present trainees with numerous cases without having to interact much with them? Or could it be that the voice we hear from a traditional scheme is biased to this view? Would sampling from an Academy be any different? It is interesting that teacher T5 from the Academy also used the R-ITI as a resource for teaching.

There is alignment of discourse, with the RCR statement on the R-ITI:

"...aimed at year 1 to 3 trainees providing core didactic knowledge to the trainee. ... If trainees can access basic knowledge themselves, it is more efficient and cost-effective than getting it at lectures. In addition, it has long been established how ineffective didactic lectures are known to be...."

Even allowing for this limitation of e-learning as resource rather than activity; the roles of e-learning emerging from this study include personalisation, legitimate information, and assessment. These roles rely on having a variety of factors in place which enable stakeholders to use e-learning tools for effective learning and these elements are access, interaction and motivation.
Conclusion

There are substantial issues regarding the construct of e-learning as a resource by teachers and learners in the Cambridge Training Programme, limiting its potential benefits.
Personal information

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References