Assessment of a novel computer aided learning tool in neuroanatomy education

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Abstract:

Impaired understanding of intricate neuroanatomical concepts and structural inter-relationships has been associated with a fear of managing neurological patients, called neurophobia, among medical trainees. As technology advances, the role of e-learning pedagogies becomes more important to supplement the traditional dissection / prospection and lecture-based pedagogies for teaching neuroanatomy to undergraduate students. However, despite the availability of a myriad of e-learning resources, the neuro (-anatomy-) phobia – neurophobia nexus prevails. The focus of the PhD was to investigate the difficulties associated with learning neuroanatomy and to develop and assess the efficacy of a novel e-learning tool for teaching neuroanatomy, in the context of the strengths and pitfalls of the currently available e-learning resources. Firstly, we sought to provide direct evidence of the medical and health science students' perception regarding specific challenges associated with learning neuroanatomy. The initial results showed that neuroanatomy is perceived as a more difficult subject compared to other anatomy topics, with spinal pathways being the most challenging to learn. Participants believed that computer assisted learning and online resources could enhance neuroanatomy understanding and decrease their neurophobia. Next, in the context of the significance of e-learning for supplementing traditional pedagogies, we identified features of neuroanatomy web-resources that were valued by students and educators with regards to learning neuroanatomy of the spinal pathways. Participants identified strengths and weaknesses of existing neuroanatomy web-resources and ranked one resource above the others in terms of information delivery and integration of clinical, physiological and medical imaging correlates. This provides a novel user perspective on the influence of specific elements of neuroanatomy web-resources to improve instructional design and enhance learner performance. Finally, considering the data acquired from students and educators, a novel, interactive, neuroanatomy learning e-resource was developed to support teaching of the neuroanatomy of the spinal pathways. The instructional design included a discussion of the clinical interpretation of basic neuroanatomical facts and structural inter-relationships. The e-learning tool was assessed and evaluated by undergraduate medical and neuroscience students using neuroanatomy knowledge quizzes and Likert-scale perception questionnaires and compared to the previously identified best-ranked neuroanatomy e-resource. Participants' opinion regarding the usefulness of various components of the tools was also gauged. The results showed that usage of the UCC e-resource led to a significant increase in participants' knowledge of the neuroanatomy of the spinal pathways compared to students' who did not use e-resources. Moreover, the participants reported a greater interest in learning neuroanatomy with the novel tool, showing a greater appreciation for it while learning clinical neurological correlates compared to those using the best available e-resource. Eventually, the data acquired from this collection was also used to identify and develop new e-learning pedagogies for teaching neuroanatomy, in the context of the strengths and pitfalls of the currently available e-learning resources.
Video tapes are a unique tool for distance learning in virtually any discipline. Large expenditures for replication are not required, video recorders are widely used in all countries, individual or group (for example, for the staff of an individual company) needs. Cost effectiveness. The average assessment of world educational systems 50% cheaper than traditional forms of education. The relatively low cost of training is provided through the use of more concentrated and unified content, the orientation of the DL technology to a large number of students, as well as through more efficient use of existing training areas and technical facilities. Computer Assisted Learning (CAL) can revolutionize the way you teach students. Learn more about its strengths, weaknesses and how you can use it. Computer Assisted Learning (or CAL) has completely modernized the way that students learn, both in the average classroom as well as in language-learning settings. Computer Assisted Learning can make lessons much more interactive and engaging, and can pique the interest of even the most reluctant of pupils. These tools can be used to better illustrate a point the teacher or professor is trying to make, or to heighten engagement among students. Just think about it: Wouldn't you learn more from actually watching a foreign film for your language class than you would from just talking about it? Tools to build great learning experiences for remote students. Explore this Best Tools for Virtual and Distance Learning Top Picks list of 18 tools curated by Common Sense Education editors to find relevant and engaging edtech solutions for your classroom. Making virtual learning or distance learning work for all students is challenging. You can have all the best tools in place, but without equitable access at home for all your students -- and adequate prep and training for yourself -- it's tough to replicate a traditional, in-person learning experience. This list assumes you've got those problems worked out and are focusing now on how to set up an effective virtual learning environment. For information or help contact the IR Manager at UCC Library, email: cora@ucc.ie or Tel. +353 21 420 5109. Feedback Password Login