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1. Clinical diagnostic decision-making in real life contexts: A trans-theoretical approach for teaching: AMEE Guide No. 95

Rakesh Patel, John Sandars, and Sue Carr

Medical Teacher March 2015, Vol. 37, No. 3 Pages 211-227

Abstract

Making an accurate clinical diagnosis is an essential skill for all medical students and doctors, with important implications for patient safety. Current approaches for teaching how to make a clinical diagnosis tend to lack the complexity that faces clinicians in real-life contexts. In this Guide, we propose a new trans-theoretical model for teaching how to make an appropriate clinical diagnosis that can be used by teachers as an additional technique to their current approach. This educational model integrates situativity theory, dual-information processing theory and socio-cognitive theory. Mapping and microanalysis help the teacher to identify the main processes involved in making an accurate clinical diagnosis, so that feedback can be provided that is focused on improving key aspects of the skill. An essential aspect of using the new educational model is the role of the experienced clinical teacher in making judgments about the appropriateness of the learner's attempts to make a clinical diagnosis.

LINK:

<http://ezproxy.library.uvic.ca/login?url=http://informahealthcare.com/doi/abs/10.3109/01421592014.975195>

2. Barriers to the uptake and use of feedback in the context of summative assessment

Christopher J. Harrison¹, Karen D. Könings², Lambert Schuwirth³, Valerie Wass¹ and Cees van der

Vleuten²; *Advances in Health Sciences Education: Theory and Practice* Volume 20, Issue 1, March 2015

Abstract

Despite calls for feedback to be incorporated in all assessments, a dichotomy exists between formative and summative assessments. When feedback is provided in a summative context, it is not always used effectively by learners. In this study we explored the reasons for this. We conducted individual interviews with 17 students who had recently received web based feedback following a summative assessment. Constant comparative analysis was conducted for recurring themes. The summative assessment culture, with a focus on avoiding failure, was a dominant and negative influence on the use of feedback. Strong emotions were prevalent throughout the period of assessment and feedback, which reinforced the focus on the need to pass, rather than excel. These affective factors were heightened by interactions with others. The influence of prior learning experiences affected expectations about achievement and the need to use feedback. The summative assessment and subsequent feedback appeared disconnected from future clinical workplace learning. Socio-cultural influences and barriers to feedback need to be understood before attempting to provide feedback after all assessments. A move away from the summative assessment culture may be needed in order to maximise the learning potential of assessments.

LINK: <http://ezproxy.library.uvic.ca/login?url=http://link.springer.com/article/10.1007%2Fs10459-014-9524-6>

3. Mindfulness training for medical students in their clinical clerkships: two cross-sectional studies exploring interest and participation

Inge van Dijk^{1,2}, Peter LBJ Lucassen² and Anne EM Speckens¹

BMC Medical Education February 2015

Background

So far, studies investigating Mindfulness Based Stress Reduction (MBSR) training in medical students are conducted in self-selected, pre-clinical samples, with modest response rates without collecting data on non-participants. This study first examines interest and participation rates of students starting their clinical clerkships. Second, it compares students interested in a mindfulness training with non-interested students and students participating in a trial on the effect of MBSR with non-participating students on levels of psychological distress, personality traits, cognitive styles and mindfulness skills.

Methods

We examined two student samples from the Radboud University Medical Center, Nijmegen:

Study 1 From March to December 2010 we performed a cross-sectional pilot-study among 4th year medical students starting their clinical clerkships, assessing interest in a MBSR training. We compared scores on the Brief Symptom Inventory, the Neo Five Factor Inventory and the Five Facet Mindfulness Questionnaire of interested students with those of non-interested students using t-tests with Bonferroni correction.

Study 2 From February 2011 to August 2012 we invited 4th year medical students starting their clinical clerkships to participate in a randomized controlled trial (RCT) on the effectiveness of MBSR. We compared scores on the Brief Symptom Inventory, the Irrational Beliefs Inventory and the Five Facet Mindfulness Questionnaire of participating students with those of non-participants using t-tests with Bonferroni correction.

Results

Study 1: Ninety-five out of 179 participating students (53%) were interested in a MBSR training. Interested students scored significantly higher on psychological distress ($p = .004$) and neuroticism ($p < .001$), than 84 non-interested students.

Study 2: Of 232 eligible students, 167 (72%) participated in our RCT. Participants scored significantly higher on psychological distress ($p = .001$), worrying ($p = .002$), problem avoidance ($p = .005$) and lower on mindfulness skills ($p = .002$) than 41 non-participants.

Conclusions

Interest in mindfulness training and response rates in a RCT on the effectiveness of MBSR among clinical clerkship students are equal to (study 1) or higher (study 2) than in studies on pre-clinical students. Interested students and participants in a RCT reported more psychological distress and psychopathology related character traits. Participants scored lower on mindfulness skills.

LINK: <http://link.springer.com/article/10.1186/s12909-015-0302-9/fulltext.html>

4. Evaluating the impact of high- and low-fidelity instruction in the development of auscultation skills

Ruth Chen, Lawrence E Grierson and Geoffrey R Norman
Medical Education March 2015

Context

A principal justification for the use of high-fidelity (HF) simulation is that, because it is closer to reality, students will be more motivated to learn and, consequently, will be better able to transfer their learning to real patients. However, the increased authenticity is accompanied by greater complexity, which may reduce learning, and variability in the presentation of a condition on an HF simulator is typically restricted.

Objectives

This study was conducted to explore the effectiveness of HF and low-fidelity (LF) simulation for learning within the clinical education and practice domains of cardiac and respiratory auscultation and physical assessment skills.

Methods

Senior-level nursing students were randomised to HF and LF instruction groups or to a control group. Primary outcome measures included LF (digital sounds on a computer) and HF (human patient simulator) auscultation tests of cardiac and respiratory sounds, as well as observer-rated performances in simulated clinical scenarios.

Results

On the LF auscultation test, the LF group consistently demonstrated performance comparable or superior to that of the HF group, and both were superior to the performance of the control group. For both HF outcome measures, there was no significant difference in performance between the HF and LF instruction groups.

Conclusions

The results from this study suggest that highly contextualised learning environments may not be uniformly advantageous for instruction and may lead to ineffective learning by increasing extraneous cognitive load in novice learners.

Link:

<http://ezproxy.library.uvic.ca/login?url=http://onlinelibrary.wiley.com/doi/10.1111/medu.12653/abstract;jsessionid=8D176DF78455B9F9597FBE598A9383D5.f03t02>

5. How we involved rural clinicians in teaching ethics to medical students on rural clinical placements

Lisa Parker and Lisa D. Watts

Medical Teacher, March 2015, Vol. 37, No. 3, Pages 228-231

Abstract

Background: The task of engaging senior medical students in ethical inquiry while on rural clinical placements has received minimal attention in the medical education literature. As there is an international trend for medical students to undertake part or all of their clinical training in rural areas, the need to deliver clinically relevant ethics teaching in a sustainable manner has emerged as a challenge for medical schools. Clinicians tend to be hesitant about delivering this kind of teaching.

What we did: We introduced a novel teaching program which involved recruiting, training and supporting experienced rural clinicians to facilitate a series of Rural Ethics Ward Rounds with the senior medical students on extended rural placements.

Evaluation: The clinical facilitators expressed some initial uncertainty with the teaching model, but generally reported a positive experience, including significant professional benefits such as increased ethical awareness and opportunity for self-reflection.

Conclusion: This model enables experienced rural clinicians to facilitate student development in ethical awareness and skill, and requires relatively low demands on academic time and resources.

LINK:

<http://ezproxy.library.uvic.ca/login?url=http://informahealthcare.com/doi/full/10.3109/0142159X.2014.923559>

6. Conceptual and practical challenges in the assessment of physician competencies

Cynthia R. Whitehead, Ayelet Kuper, Brian Hodges, and Rachel Ellaway
Medical Teacher, March 2015, Vol. 37, No. 3, Pages 245-251

Abstract

The shift to using outcomes-based competency frameworks in medical education in many countries around the world requires educators to find ways to assess multiple competencies. Contemporary medical educators recognize that a competent trainee not only needs sound biomedical knowledge and technical skills, they also need to be able to communicate, collaborate and behave in a professional manner. This paper discusses methodological challenges of assessment with a particular focus on the CanMEDS Roles. The paper argues that the psychometric measures that have been the mainstay of assessment practices for the past half-century, while still valuable and necessary, are not sufficient for a competency-oriented assessment environment. New assessment approaches, particularly ones from the social sciences, are required to be able to assess non-Medical Expert (Intrinsic) roles that are situated challenges of this new assessment. The paper considers the theoretical and practical bases for tools that can more effectively assess non-Medical Expert (Intrinsic) roles.

LINK: <http://informahealthcare.com/doi/full/10.3109/0142159X.2014.993599>

7. Twelve tips for curriculum renewal

Peter Mcleod, and Yvonne Steinert

Medical Teacher March 2015, Vol. 37, No. 3 , Pages 232-238

Background: Curriculum development in the health sciences usually entails a lengthy, in-depth review of most or all aspects of the curriculum. The review usually leads to the generation of a detailed report that is submitted to the Dean or executive committee of the faculty. Much has been written about the process of curriculum development but very little has been written about the important processes of curriculum renewal and revision.

Aims: Health sciences curricula, including those that are newly developed, will benefit from timely periodic revision. The revision process with subsequent diligent curriculum monitoring is called curriculum renewal. In this article, we articulate twelve tips on how to assure dynamic, ongoing curriculum renewal. The overall goal of the renewal should be to assure timely, evidence-based curriculum responsiveness to changes in practice, health care, student needs and educational approaches based on quality research.

Methods: We searched the health care education literature for articles related to curriculum development, seeking credible evidence on, and recommendations for, best practices for ongoing renewal of developed curricula.

Results and conclusions: The health sciences literature is replete with recommendations to guide suggestions for curriculum development; however, there are few credible research-based guidelines to inform dynamic curriculum renewal. Given the rapid development of research-based knowledge in health sciences education practices, there is a need to diligently monitor the ongoing successes and failures of a developed curriculum with a view to instituting large or small timely changes to assure timely curriculum renewal.

LINK:

<http://ezproxy.library.uvic.ca/login?url=http://informahealthcare.com/doi/full/10.3109/0142159X.2014.932898>

8. Got power? A systematic review of sample size adequacy in health professions education research

David A. Cook and Rose Hatala

Advances in Health Sciences Education: Theory and Practice Volume 20, Issue 1, March 2015

Abstract

Many education research studies employ small samples, which in turn lowers statistical power. We re-analyzed the results of a meta-analysis of simulation-based education to determine study power across a range of effect sizes, and the smallest effect that could be plausibly excluded. We systematically searched multiple databases through May 2011, and included all studies evaluating simulation-based education for health professionals in comparison with no intervention or another simulation intervention. Reviewers working in duplicate abstracted information to calculate standardized mean differences (SMD's). We included 897 original research studies. Among the 627 no-intervention-comparison studies the median sample size was 25. Only two studies (0.3 %) had ≥ 80 % power to detect a small difference (SMD > 0.2 standard deviations) and 136 (22 %) had power to detect a large difference (SMD > 0.8). 110 no-intervention-comparison studies failed to find a statistically significant difference, but none excluded a small difference and only 47 (43 %) excluded a large difference. Among 297 studies comparing alternate simulation approaches the median sample size was 30. Only one study (0.3 %) had ≥ 80 % power to detect a small difference and 79 (27 %) had power to detect a large difference. Of the 128 studies that did not detect a statistically significant effect, 4 (3 %) excluded a small difference and 91 (71 %) excluded a large difference. In conclusion, most education research studies are powered only to detect effects of large magnitude. For most studies that do not reach statistical significance, the possibility of large and important differences still exists.

LINK: <http://ezproxy.library.uvic.ca/login?url=http://link.springer.com/article/10.1007%2Fs10459-014-9509-5>

9. Slow Medical Education

Wear, Delese PhD; Zarconi, Joseph MD; Kumagai, Arno MD; Cole-Kelly, Kathy MSW
Academic Medicine 90(3); March 2015

ABSTRACT

Slow medical education borrows from other "slow" movements by offering a complementary orientation to medical education that emphasizes the value of slow and thoughtful reflection and interaction in medical education and clinical care. Such slow experiences, when systematically structured throughout the curriculum, offer ways for learners to engage in thoughtful reflection, dialogue, appreciation, and human understanding, with the hope that they will incorporate these practices throughout their lives as physicians. This Perspective offers several spaces in the medical curriculum where slowing down is possible: while reading and writing at various times in the curriculum and while providing clinical care, focusing particularly on conducting the physical exam and other dimensions of patient care. Time taken to slow down in these ways offers emerging physicians

opportunities to more fully incorporate their experiences into a professional identity that embodies reflection, critical awareness, cultural humility, and empathy. The authors argue that these curricular spaces must be created in a very deliberate manner, even on busy ward services, throughout the education of physicians. (C) 2015 by the Association of American Medical Colleges

LINK:

<http://ezproxy.library.uvic.ca/login?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&AN=00001888-201503000-00014&LSLINK=80&D=ovft>

10. Influence of OSCE design on students' diagnostic reasoning

Alexandre Lafleur, Luc Côté and Jimmie Leppink

Medical Education February 2015

Context

Some characteristics of assessments exert a strong influence on how students study. Understanding these pre-assessment learning effects is of key importance to the designing of medical assessments that foster students' reasoning abilities. Perceptions of the task demands of an assessment significantly influence students' cognitive processes. However, why and how certain tasks positively 'drive' learning remain unknown. Medical tasks can be assessed as coherent meaningful whole tasks (e.g. examining a patient based on his complaint to find the diagnosis) or can be divided into simpler part tasks (e.g. demonstrating the physical examination of a pre-specified disease). Comparing the benefits of whole-task and part-task assessments in a randomised controlled experiment could guide the design of 'assessments for learning'.

Objectives

The purpose of this study was to determine whether the knowledge that an objective structured clinical examination (OSCE) will contain whole tasks, as opposed to part tasks, increases the use of diagnostic reasoning by medical students when they study for this assessment.

Methods

In this randomised, controlled, mixed-methods experiment, 40 medical students were randomly paired and filmed while studying together for two imminent physical examination OSCE stations. Each 25-minute study period began with video cues and ended with a questionnaire on cognitive loads. Cues disclosed either a part-task OSCE station (examination of a healthy patient) or a whole-task OSCE station (hypothesis-driven physical examination [HDPE]). In a crossover design, sequences were randomised for both task and content (shoulder or spine). Two blinded and independent authors scored all 40 videos in distinct randomised orders, listening to participants studying freely. Mentioning a diagnosis in

association with a sign was scored as a backward association, and the opposite was scored as a forward association; both revealed the use of diagnostic reasoning. Qualitative data were obtained through group interviews.

Results

Studying for whole-task OSCE stations resulted in a greater use of diagnostic reasoning. Qualitative data triangulate these findings and show the precedence of cues sourced from the 'student grapevine'.

Conclusions

In comparison with 'traditional' part-task OSCEs, whole-task OSCEs like the HDPE increase students' use of diagnostic reasoning during study time.

LINK:

<http://ezproxy.library.uvic.ca/login?url=http://onlinelibrary.wiley.com/doi/10.1111/medu.12635/full>