Summer 2016   Articles you may enjoy (abstracts and links)

Links are included for both UVIC and UBC library websites as I understand it is easier for some of you to access the UBC site. When you click on a link, you will first be directed to either the UVIC or UBC library website; in both cases, your ID and password are identical to the one you use to access your email. ***At this time, the Medical Education full text links work for UVic but not UBC. The UBC library has lost access to the Wiley Online journals through their EZ proxy IP. They have reported the problem to Wiley.)***

1. **What are threshold concepts and how can they inform medical education?**
2. **Twelve tips for developing and maintaining a remediation program in medical education**
3. **Residents as teachers: Near peer learning in clinical work settings: AMEE Guide No. 106**
4. **Critical Review: Medical Students' Motivation after Failure**
5. **The articulation of integration of clinical and basic sciences in concept maps: differences between experienced and resident groups**
6. **Making progress in the ethical treatment of medical trainees**
7. **Medical Student Research: Program Structure, Feedback, and Outcomes at a New Medical School**
8. **Mapping the dark matter of context: a conceptual scoping review**
9. **Experiences of medical students who are first in family to attend university**
10. **Test-enhanced learning of clinical reasoning: a cross-over randomized trial**
        and the commentary: Programmes' and students' roles in test-enhanced learning
11. **Taking the sting out of assessment: is there a role for progress testing?**
        and the commentary: The challenge of changing to an assessment for learning culture

     The entire August issue of Academic Medicine is all about women in medicine and has some very interesting articles

1. **What are threshold concepts and how can they inform medical education?**
    Hillary Neve, Andy Wearn and Tracey Collett
    Medical teacher August 2016; volume 38 (8) p. 850-853

 Abstract
The notion of "threshold concepts" is being widely applied and researched in many disciplines but is rarely discussed within medical education. This article is written by three medical educators who regularly draw on threshold concept theory in their work. They explore here the nature of threshold concepts and describe how the theory can offer medical educators new perspectives in terms of how they design curricula, approach teaching and support learners.

To read more:

http://www-tandfonline-com.ezproxy.library.uvic.ca/doi/full/10.3109/0142159X.2015.1112889

http://www-tandfonline-com.ezproxy.library.ubc.ca/doi/full/10.3109/0142159X.2015.1112889

2. **Twelve tips for developing and maintaining a remediation program in medical education**
    Adina Kalet, Jeannette Guerrasio, and Calvin Chou
    Medical teacher August 2016; volume 38 (8) p. 787-792

Abstract

Remediation in medical education, the process of facilitating corrections for physician trainees who are not on course to competence, predictably consumes significant institutional resources. Although remediation is a logical consequence of mandating, measuring, and reporting clinical competence, many program leaders continue to take an unstructured approach toward organizing effective, efficient plans for struggling trainees, almost all of who will become practicing physicians. The following 12 tips derive from a decade of remediation experience at each of the authors' three institutions. It is informed by the input of a group of 34 interdisciplinary North American experts assembled to contribute two books on the subject. We intend this summary to guide program leaders to build better remediation systems and emphasize that developing such systems is an important step toward enabling the transition from time-based to competency-based medical education.

To read more:

http://www-tandfonline-com.ezproxy.library.uvic.ca/doi/full/10.3109/0142159X.2016.1150983

http://www-tandfonline-com.ezproxy.library.ubc.ca/doi/full/10.3109/0142159X.2016.1150983

3. **Residents as teachers: Near peer learning in clinical work settings: AMEE Guide No. 106**
Subha Ramani, Karen Mann, David Taylor and Harish Thampy
Medical Teacher July 2016; volume 38 (7) p. 642-655

Abstract:

This AMEE Guide provides a framework to guide medical educators engaged in the design and implementation of "Resident as Teacher" programs. The suggested approaches are based on established models of program development: the Program Logic model to guide program design, the Dundee three-circle model to inform a systematic approach to planning educational content and the Kirkpatrick pyramid, which forms the backbone of program evaluation. The Guide provides an overview of Resident as Teacher curricula, their benefits and impact, from existing literature supplemented by insights from the authors' own experiences, all of whom are engaged in teaching initiatives at their own institutions. A conceptual description of the Program Logic model is provided, a model that highlights an outcomes-based curricular design. Examples of activities under each step of this model are described, which would allow educational leaders to structure their own program based on the scope, context, institutional needs and resources available. Emphasis is placed on a modular curricular format to not only enhance the teaching skills of residents, but also enable development of future career educators, scholars and leaders. Application of the Dundee three-circle model is illustrated to allow for a flexible curricular design that can cater to varying levels of educational needs and interests. In addition, practical advice is provided on robust assessment of outcomes, both assessment of participants and program evaluation. Finally, the authors highlight the need for congruence between the formal and hidden curriculum through explicit recognition of the value of teaching by institutions, support for development of teaching programs, encouragement of evidence-based approach to education and rewards for all levels of teachers.

To read more:

http://www-tandfonline-com.ezproxy.library.uvic.ca/doi/full/10.3109/0142159X.2016.1147540

http://www-tandfonline-com.ezproxy.library.ubc.ca/doi/full/10.3109/0142159X.2016.1147540

4. Critical Review: Medical Students' Motivation after Failure
Chris Holland
Advances in Health Sciences Education August 2016, Volume 21, issue 3 pp 695–710

Abstract

About 10 % of students in each years' entrants to medical school will encounter academic failure at some stage in their programme. The usual approach to supporting these students is to offer them short term remedial study programmes that often enhance approaches to study that are orientated towards avoiding failure. In this critical review I will summarise the current theories about student motivation that are most relevant to this group of students and describe how they are enhanced or not by various contextual factors that medical students experience during their programme. I will conclude by suggesting ways in which support programmes for students who have encountered academic failure might be better designed and researched in the future.

To read more:

http://link.springer.com.ezproxy.library.uvic.ca/article/10.1007/s10459-015-9643-8

http://link.springer.com.ezproxy.library.ubc.ca/article/10.1007/s10459-015-9643-8

5. The articulation of integration of clinical and basic sciences in concept maps: differences between experienced and resident groups
Sylvia Vink, Jan va Tartwik, Nico Verloop et al
Advances in Health Sciences Education August 2016, Volume 21, issue 3 pp 643-657.

Abstract:

To determine the content of integrated curricula, clinical concepts and the underlying basic science concepts need to be made explicit. Preconstructed concept maps are recommended for this purpose. They are mainly constructed by experts. However, concept maps constructed by residents are hypothesized to be less complex, to reveal more tacit basic science concepts and these basic science concepts are expected to be used for the organization of the maps. These hypotheses are derived from studies about knowledge development of individuals. However, integrated curricula require a high degree of cooperation between clinicians and basic scientists. This study examined whether there are consistent variations regarding the articulation of integration when groups of experienced clinicians and basic scientists and groups of residents and basic scientists-in-training construct concept maps. Seven groups of three clinicians and basic scientists on experienced level and seven such groups on resident level constructed concept maps illuminating clinical problems. They were guided by instructions that focused them on articulation of integration. The concept maps were analysed by features that described integration. Descriptive statistics showed consistent variations between the two expertise levels. The concept maps of the resident groups exceeded those of the experienced groups in articulated integration. First, they used significantly more links between clinical and basic science concepts. Second, these links connected basic science concepts with a greater variety of clinical concepts than the experienced groups. Third, although residents did not use significantly more basic science concepts, they used them significantly more frequent to organize the clinical concepts. The conclusion was drawn that not all hypotheses could be confirmed and that the resident concept maps were more elaborate than expected. This article discusses the implications for the role that residents and basic

scientists-in-training might play in the construction of preconstructed concept maps and the development of integrated curricula.

To read more:

http://link.springer.com.ezproxy.library.uvic.ca/article/10.1007/s10459-015-9657-2

http://link.springer.com.ezproxy.library.ubc.ca/article/10.1007/s10459-015-9657-2

6. **Making progress in the ethical treatment of medical trainees**
   Kevin Busche, Kelly Burak, Pamela Veale, Sylvain Coderre and Kevin Mclaughlin

Abstract:

There is an inherent conflict within clinician educators as we balance the roles of healthcare provider to patients in need of care with that of educator of learners in need of teaching. In this essay we use Beauchamp and Childress' principles of biomedical ethics as a framework to compare the relationship that clinician educators have with their patients and their learners, and suggest that while we typically apply ethical principles when addressing the needs of our patients, these principles are frequently lacking in our interactions with learners. This dichotomy reflects a person-by-situation interaction that may be partly explained by the expectations of the regulatory bodies that define how clinicians should interact with patients and how educators should interact with learners. The result is that we may fall short in applying respect for autonomy, beneficence/nonmaleficence, and justice when addressing the needs of our learners. Fortunately there are ways in which we can incorporate these ethical principles into our interactions with learners while still adhering to accreditation standards and institutional policy. These include flipped classrooms and simulated learning experiences, incorporating aspects of instructional design that have been shown to improve learning outcomes, providing additional resources to learners with greater needs, and organizing training curricula around entrustable professional activities. Although the consistent application of ethical principles with all learners during all learning experiences is likely unachievable, we can, and should, move towards more ethical treatment of our learners.

To read more:

http://link.springer.com.ezproxy.library.uvic.ca/article/10.1007/s10459-015-9617-x

http://link.springer.com.ezproxy.library.ubc.ca/article/10.1007/s10459-015-9617-x

7. **Medical Student Research: Program Structure, Feedback, and Outcomes at a New Medical School**
   Mary O. Dereski

Abstract:

Research experiences in various forms have been available to medical students for many decades. However, recently, there has been a trend to integrate this opportunity into existing curriculum through scholarly concentration programs. The impetus for including research during medical school is to acquire and develop critical thinking and analytical skills prior to residency without adding time to undergraduate medical education. Research program structure, feedback, and survey outcomes from the newly formed Oakland University William Beaumont School of Medicine (OUWB) are presented.

Conclusions drawn support the potential for rigorous future research endeavors as the students move into their graduate medical education.

To read more:

http://link.springer.com.ezproxy.library.uvic.ca/article/10.1007/s40670-016-0238-7

http://link.springer.com.ezproxy.library.ubc.ca/article/10.1007/s40670-016-0238-7

7. **Mapping the dark matter of context: a conceptual scoping review**
Joanna Bates and Rachel Ellaway
Medical Education volume 50 (8) pp.807-816 August 2016

Abstract

Context
Like dark matter, the contexts for medical education are largely invisible to those within them, although context can have profound influences on teaching, learning and practice. For something that is so intrinsic to the field of medical education, the concept of context remains troubling to scholars and those running medical education programmes. This paper reports on a critical and conceptual review of the concept of context within the medical education literature and beyond.

Methods
A review was undertaken drawing on two sources: concepts of context in the medical education literature, and concepts of context across multiple academic disciplines. This body of material was iteratively, discursively and inductively synthesised.

Results
Few of the articles from the medical education literature described or defined context directly, tending instead to focus on describing specific elements of context, such as clinical disciplines, physical settings and political pressures, that could or did influence learning outcomes. The results were framed in terms of what context 'is', how context works (in terms of context–mechanism–outcome), and how context can be represented using patterns. The authors propose a definition of context in medical education, along with the means to model, contrast and compare different contexts based on recurring patterns.

Conclusions
Context matters in medical education and it can, despite many challenges, be considered systematically and objectively. The findings from this study both represent a catalyst and challenge medical education researchers to look at context afresh.

To read more:

http://onlinelibrary.wiley.com.ezproxy.library.uvic.ca/doi/10.1111/medu.13034/full

http://onlinelibrary.wiley.com.ezproxy.library.ubc.ca/doi/10.1111/medu.13034/full

8. **Experiences of medical students who are first in family to attend university**
   Caragh Brosnan, Erica Southgate, et al
   Medical Education volume 50 (8) pp.842-851 August 2016

Abstract

Context

Students from backgrounds of low socio-economic status (SES) or who are first in family to attend university (FiF) are under-represented in medicine. Research has focused on these students' pre-admission perceptions of medicine, rather than on their lived experience as medical students. Such research is necessary to monitor and understand the potential perpetuation of disadvantage within medical schools.
Objectives

This study drew on the theory of Bourdieu to explore FiF students' experiences at one Australian medical school, aiming to identify any barriers faced and inform strategies for equity.
Methods

Twenty-two FiF students were interviewed about their backgrounds, expectations and experiences of medical school. Interviews were recorded, transcribed and analysed thematically. Findings illustrate the influence and interaction of Bourdieu's principal forms of capital (social, economic and cultural) in FiF students' experiences.
Results

The absence of health professionals within participants' networks (social capital) was experienced as a barrier to connecting with fellow students and accessing placements. Financial concerns were common among interviewees who juggled paid work with study and worried about expenses associated with the medical programme. Finally, participants' 'medical student' status provided access to new forms of cultural capital, a transition that was received with some ambivalence by participants themselves and their existing social networks.
Conclusions

This study revealed the gaps between the forms of capital valued in medical education and those accessible to FiF students. Admitting more students from diverse backgrounds is only one part of the solution; widening participation strategies need to address challenges for FiF students during medical school and should enable students to retain, rather than subdue, their existing, diverse forms of social and cultural capital. Embracing the diversity sought in admissions is likely to benefit student learning, as well as the communities graduates will serve. Change must ideally go beyond medical programmes to address medical culture itself.

To read more:

http://onlinelibrary.wiley.com.ezproxy.library.uvic.ca/doi/10.1111/medu.12995/full

http://onlinelibrary.wiley.com.ezproxy.library.ubc.ca/doi/10.1111/medu.12995/full

9. **Test-enhanced learning of clinical reasoning: a cross-over randomized trial**
   T Raupach, J C Anderson, et al
   Medical Education volume 50 (7) pp.711-720 July 2016

Abstract:

Context

Clinical reasoning is an essential skill, the foundations of which should be acquired during undergraduate medical education. Student performance in clinical reasoning can be assessed using key feature examinations. However, within a paradigm of test-enhanced learning, such examinations may also be used to enhance long-term retention of procedural knowledge relevant to clinical reasoning.

Objectives

This study tested the hypothesis that repeated testing with key feature questions is more effective than repeated case-based learning in fostering clinical reasoning.

Methods

In this randomised crossover trial, Year 4 medical students attended 10 weekly computer-based seminars during which patient case histories covering general medical conditions were displayed. The presentation format was switched between groups every week. In the control condition, students studied long case narratives. The intervention condition used the same content but augmented case presentation with a sequence of key feature questions. Using a within-subjects design, student performance on intervention and control items was assessed at 13 weeks (exit examination) and 9 months (retention test) after the first day of term.

Results

A total of 87 of 124 eligible students provided complete data for the longitudinal analysis (response rate: 70.2%). In the retention test, mean ± standard deviation student scores on intervention items were significantly higher than those on control items (56.0 ± 25.8% versus 48.8 ± 24.7%; $p < 0.001$). The results remained unchanged after accounting for exposure time in a linear regression analysis that also adjusted for sex and general student performance levels.

Conclusions

This is the first study to demonstrate an effect of test-enhanced learning on clinical reasoning as assessed with key feature questions. In this randomised trial, repeated testing was more effective than repeated case-based learning alone. Curricular implementation of longitudinal key feature testing may considerably enhance student learning outcomes in relevant aspects of clinical medicine.

To read more:

http://onlinelibrary.wiley.com.ezproxy.library.uvic.ca/doi/10.1111/medu.13069/full

http://onlinelibrary.wiley.com.ezproxy.library.ubc.ca/doi/10.1111/medu.13069/full

   and the commentary: Programmes' and students' roles in test-enhanced learning
    A Lafleur and and L Coté
    Medical Education volume 50 (7) pp.702-703 July 2016
    (no abstract)

10. **Taking the sting out of assessment: is there a role for progress testing?**
    D Pugh and G Regehr
    Medical Education volume 50 (7) pp.721-729 July 2016

Abstract:

Context

It has long been understood that assessment is an important driver for learning. However, recently, there has been growing recognition that this powerful driving force of assessment has the potential to undermine curricular efforts. When the focus of assessment is to categorise learners into competent or not (i.e. assessment of learning), rather than being a tool to promote continuous learning (i.e. assessment for learning), there may be unintended consequences that ultimately hinder learning. In response, there has been a movement toward constructing assessment not only as a measurement problem, but also as an instructional design problem, and exploring more programmatic models of assessment across the curriculum. Progress testing is one form of assessment that has been introduced, in part, to attempt to address these concerns. However, in order for any assessment tool to be successful in promoting learning, careful consideration must be given to its implementation.

Objective

The purpose of this paper is to consider the implications of implementing progress testing within practice, and how this might promote or impede learning in the three phases of assessment (pre-test, pure-test and post-test).

Methods

We will examine the literature on how assessment drives learning and how this might apply to progress testing. We will also explore the distinction between assessment of learning and assessment for learning, including ways in which they overlap and differ. We end by discussing how the properties of an assessment tool can be harnessed to optimise learning.

Conclusions

Progress tests are one potential solution to the problem of removing (or at least lessening) the sting associated with assessment. If implemented with careful thought and consideration, progress tests can be used to support the type of deep, meaningful and continuous learning that we are trying to instill in our learners.

To read more:

and the commentary: The challenge of changing to an assessment for learning culture
C. Harrison and V Wass
(No abstract)

http://onlinelibrary.wiley.com.ezproxy.library.uvic.ca/doi/10.1111/medu.13058/full

http://onlinelibrary.wiley.com.ezproxy.library.ubc.ca/doi/10.1111/medu.13058/full