#8KK Posters: Portfolios/Medical Education Research

Location: Hall 3 Foyer

#8KK01 (1097)

Mirror, Mirror on the Wall. What could extracurricular activities teach us all?

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Background: After a decade of implementation, reflective writing of extracurricular activities, which was previously one of the six compulsory portfolio contents at Chulalongkorn medical school in 2005, is the only material remained. We thus conducted this research to study what students had learned from extracurricular activities in terms of curriculum outcomes.
Summary of Work: Year 1-3 medical students could reflect upon any extracurricular activities they participated. 1,784 reflective writings from 895 students were analysed. The chi-square test was used to investigate the difference between the three batches of students.
Summary of Results: All 12 curriculum outcomes were reflected, notably in leadership and teamwork (84.70%); professional and personal development (59.64%); and professional communication (28.20%). The ratio of 12 outcomes reflected by Year 1 students differs statistically significantly from Year 2 and 3 students ($p < .001$).
Discussion: Extracurricular activities seem to play an important role in developing students' interpersonal skills. Meaningful extracurricular experiences can be enhanced by providing immediate reflection. Further study should be conducted if extracurricular activities contribute more than intra-curricular experiences to the achievement of these outcomes.
Conclusion: Our quantitative analysis of students' reflective writing has shown that, most students could see their own development in interpersonal skills through extracurricular activities.
Take-home Message: Let's encourage and support students to engage in extracurricular activities.

#8KK02 (1452)

Constructing a teacher-student real time interactive learning portfolio management system at Shantou University Medical College, China

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Background: The promise of the organ/system-based integrated medical curriculum implemented at Shantou University Medical College has not been fully realized since teachers are mostly content-centered, lacking effective feedback and interactions with students. The assessment emphasized memory-based knowledge rather than competencies of learners in knowledge application and problem solving.
Summary of Work: We constructed a learning portfolio management system (LPMS) in which specific learning goals as described in terms of student competencies were progressively set for the curriculum and student learning was monitored in real time as students, under the guide of teachers, work to meet these goals successively.
Summary of Results: Results of student surveys indicated that LPMS benefited learners by (1) providing clear, milestone-like, and competency-oriented learning objectives; (2) establishing progressive benchmarks; (3) assessing student competencies over time; (4) monitoring student learning in real time; (5) giving timely and individualized feedback.
Discussion: Medical education moves towards standardized learning outcomes(competency-based) medical education through assessment of competencies. Portfolios have been claimed to support competence-based medical education as they support the longitudinal recording of evidence of experience and achievements, feedback received, and future plans.
Conclusion: The Learning Portfolio Management System provides a standardized medium for teachers and learners to communicate their expectations on medical competencies clearly and monitor learning in a timely and individualized manner.
Take-home Message: 1. Medical education moves towards competency-based education. 2. Assessment for health professions is required to focus on competencies composed of knowledge, skills and attitude. 3. Portfolio increases learners' self awareness and engagement in reflection. 4. LPMS increases the interactions between teachers and learners, improved feedback to students.

#8KK03 (2847)
Folio: application for the construction of portfolios in a Family Health post-graduate course

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Background: This works describes an application (app) designed to help students and tutors of a Family Health post-graduate course, offered in a distance learning modality, to prepare and supervise the teaching-learning mediated by portfolios. The app calls "Folio" and it was engineered by a multiprofessional team (Pedagogy, Computer Science, Medicine).
Summary of Work: Professionals mapped out the students' and tutors' difficulties to construct and evaluate portfolios during the distance activities. Folio was created to solve the demand for a qualified tool for record of: the learning process during the reflexive activities; tutor interventions; student-tutor interactions. Also the app was designed to work asynchronously.
Summary of Results: The app made possible the creation of remote portfolios even in the absence of internet connection. Folio has a system that storage the information recorded in absence of connection and send this data immediately when internet connection was achieved. A chat system between student and tutor was incorporated to app..
Discussion: The poor or lack of internet connectivity is a concern in distance learning. In this way the Folio functionality of work asynchronously takes an important place. However app Folio has been thought to be used on a Family Health post-graduate course, it could be used on other knowledge areas.
Conclusion: App Folio is a promising tool to be used to create portfolios on distance learning courses.
Take-home Message: The created app is a reliable tool, positively responding to pedagogical demand for an tool that works offline.

#8KK04 (1721)
Active participation rather than good performance in learning portfolio competition is a better predictor for learning outcomes -- Is it a good indicator for active learners?

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Background: Portfolio, considered as an important assessment in clinical training, allows medical students to increase self-awareness and reflection, and to improve student-tutor relationships. Although many reports have described the benefits of portfolios in medical education, its association with clinical learning outcomes remained unclear.
Summary of Work: Portfolio competition was set as a compulsory course for year 5 (M5), yet optional participation for year 7 (M7) medical students. Portfolios were scored by clinical teachers and student self-evaluation. The relationship between portfolio performance in M5 students, participation in M7, and final learning outcomes was analysed.
Summary of Results: Totally 40 students were enrolled. Compared with the remaining, M7 students who opted for portfolio competition had better performance in OSCE examination (P=0.005) and the final clinical assessment (P<0.001). But there was no statistical difference in terms of learning outcomes between students with top one-third portfolio performance and the remaining.
Discussion: Active participation in the portfolio competition needed students to long-term and actively record and reflect on their learning process without an external force, and thus, may serve as a good indicator for active learning. Better performance in the compulsory portfolio competition, however, may just reflect a better ability to organise.
Conclusion: Active participation in the optional portfolio competition rather than good performance in the compulsory competition is more predictive for better clinical learning outcomes, which depend more on an active learning attitude.
Take-home Message: The trait of active learning attitude observable by the active participation in an optional portfolio competition is more important than portfolio performance per se, in terms of future clinical learning outcomes and competency.

#8KK05 (592)
Electronic logbook: more than just a personal monitoring tool

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Background: Logbook is usually used to monitor student's clinical experience. However, benefits of logbook data analysis in the literature are quite limited. We, therefore, conducted this study to identify difference of clinical experiences in procedures, based on logbook records, between students in 4 training sites studying in the same curriculum.
Summary of Work: Chulalongkorn medical students in 2013-2015 academic year recorded their two-year clinical experiences on web-based logbook. The records of students' logbooks at (1) King Chulalongkorn Memorial Hospital (KCMH), which provides quaternary care, and (2) the three affiliated hospitals (AH), which provide secondary-to-tertiary care, were compared using effect size.
Summary of Results: AH students reported more experiences in 62 out of 77 basic procedures than KCMH students. This superiority had moderate-to-strong effect size in 25 procedure, for example, normal labour, and CVP measurement. Venipuncture and urethral catheterization were the only two basic procedures KCMH students had more experiences with moderate-to-strong effect size.
Discussion: Different teaching sites did affect clinical opportunities in performing procedures. In order to maintain standard of students in the same curriculum, extra-teaching sessions for KCMH students in a simulation center, for example, is essential. Providing practicing experiences in other training sites could also benefit students in their remaining year.
Conclusion: Our analysis of electronic logbook data has shown differences in clinical learning opportunities between quaternary and secondary-to-tertiary hospitals.
Take-home Message: Electronic logbooks can be more easily utilized for monitoring student's clinical experiences than paper-based ones. Using the analysis results, curriculum developers could design interventions to create more motivating learning environment by giving students more access to practicing procedures safely with patients.

#8KK06 (703)
Using e-portfolios in Outreach Training to Create a Transformative Student Learning Experience for Postgraduate Orthodontic Students

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Background: Primary care dental practitioners require postgraduate education which minimizes time out of clinical practice. 96% of dental care is delivered in primary care locations, so, where possible, education involving clinical care of patients should be provided in an environment most appropriate for the patient, and ideally in the practitioner's workplace.
Summary of Work: Dental postgraduate programmes are delivered in approved outreach centres, using clinical case e-portfolios to link tutors with students. Students treat patients in their own practices, upload clinical case material onto their e-portfolios, and receive feedback from tutors. The e-portfolio is a learning tool, and used for formative and summative assessment.
Summary of Results: Educational technology within a primary care clinical environment, is ideally suited for orthodontic education. Clinical case e-portfolios allow an interactive dialogue between students and tutors, enabling both feedback and clinical support. It is a valuable learning and assessment tool, facilitating more interactive education and is integral to case based learning.
Discussion: Outreach based part-time courses enable students to carry out clinical treatment within their own workplaces, supported by e-portfolio technology which facilitates remote tutor support for students, increasing their ability to apply learning in their own clinics, aiding reflective practice and providing structured learning in a patient and student friendly environment.
Conclusion: This model uses clinical case e-portfolios, which include a reflective student commentary, as a learning and assessment tool. Students have a visit by visit record of case progression facilitating tutor and group discussion. The use of e-portfolios is significant in developing understanding of orthodontic case assessment, diagnosis and treatment mechanics.
Take-home Message: Clinical case e-portfolios are valuable learning and assessment tools allowing immediate tutor feedback. They facilitate interactive education in students own working environment and are integral to case based learning. They enable interactive, peer group case-based discussion and are significant in developing understanding of orthodontic case assessment, diagnosis and treatment mechanics.

#8KK07 (497)
Does an ePortfolio stimulate student reflective practice and professional growth in a conference setting?

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Background: A unique feature of the University of Melbourne MD program is the annual MD Student Conference (MDSC), which brings together all 1400 MD students in a conference setting. Conference sessions are guided by the graduate attributes of the MD course and the students interpret these to develop the conference program.
Summary of Work: MDSC is a credit-point subject in the MD program. When it originally began assessment consisted of an extended reflective essay on any aspect of the conference program. In recent years, the student body has advocated for, and developed in collaboration with the Medical School's Education Technology Team, an ePortfolio platform.
Summary of Results: The rationale for the introduction of an ePortfolio was to allow students to create reflective 'snap-shots' that could be uploaded in real-time during the conference. These snap-shots could consist of text, audio, video or social media elements allowing students to create their own narrative around their conference experience.
Discussion: This presentation will discuss the pedagogy behind the use of portfolios to document student learning and reflect on the introduction and development of the ePortfolio platform for MDSC. De-identified examples of student content will be presented to demonstrate its use a tool to stimulate student reflective practice and professional growth.
Conclusion: Anecdotal evidence suggests students produce narratives which demonstrate deep engagement with, and reflection on, the conference content; further work is required evaluating the merits of an ePortfolio to allow students to choose how to demonstrate their learning and translation of this to other areas of their clinical and professional practice.
Take-home Message: MDSC and the ePortfolio platform are examples of innovative curricula development and demonstrate models for effectively engaging students in the creation of teaching and learning resources. The challenge is to evaluate whether they provide 'value of money' and genuinely assist students to develop their reflective practice and demonstrate professional growth.

#8KK08 (552)
ePortfolio Video Module: Providing Peer Support and Advice

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Background: The ePortfolio serves as an online multimedia curriculum vitae for medical students based on reflection around the CanMEDS roles. Program evaluation of the uOttawa Medicine ePortfolio program cohorts (2007-¬2013) showed considerable variation between coaching style and student experience from group to group.
Summary of Work: In an effort to improve the program, we set out to develop a video tool to support mentorship from experienced coaches to new coaches on the group process and for enabling meaningful student reflection. Using a modified Delphi approach, we analyzed the ePortfolio Program Evaluation Report, selecting specific themes.
Summary of Results: Based on feedback from senior coaches, program leadership, and medical students, interview questions and a group meeting script were developed. A 15 minute instructional video module was developed which includes interviews, group meeting re-enactments, and educational content. This medium enables accessible support with flexibility, at a time convenient to coaches.
Discussion: Students reported lack of consistency and limited professional/personal growth, while coaches recognized a need for more flexible faculty development. As a result, the program was not functioning optimally for all parties. In working on a solution we prioritized content that was easy to digest, accessible, and based in reality.
Conclusion: The video module is meant to be accessible to all ePortfolio coaches, both current and incoming. It provides two frameworks: one for best practices in how to conduct face-to-face ePortfolio group meetings and one for enhancement of coaches' oral and written feedback to stimulate students' reflection skills.
Take-home Message: New tools need to be developed to provide mentorship education to faculty to ensure that ePortfolio programs and those similar to it are most effective. We created one such tool through the development of a video module based on data from previous program evaluations, expert opinions and student consultation.

#8KK09 (2109)
Making the First Cut: Analysis of Academic Medicine's Reasons for Rejection after Internal Editorial Review

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Background: The study builds on Bordage's reasons for rejection to increase transparency of Academic Medicine's internal editor review process and provide suggestions for improving submissions. Guides for external peer review rejections leave a gap in the literature about how to avoid rejection at the first round of journal rejections, editors' review.
Summary of Work: Editors' comments for manuscripts submitted in 2015 (n = 369) and rejected prior to external peer review from Academic Medicine (AM) was performed. Comments were analyzed using content analysis, constant comparison and mapped to a framework informed by Bordage's work. Descriptive statistics of categories was conducted.
Summary of Results: Editors' comments were analyzed and nine categories emerged. The top five are 1) ineffective study question and/or design (n=338,92%), 2) suboptimal data collection process (n=180,49%), 3) weak discussion and/or conclusions (n=165, 45%), 4) unimportant or irrelevant topic t (n=137,37%), and 5) weak data analysis and/or presentation of results (120,33%).
Discussion: A key finding acknowledges that manuscripts need to move the current literature forward. Specifically, the research question sets the stage for the study design, and both, are informed by, and subsequently inform the literature.
Conclusion: Our analysis updated Bordage's reasons for rejection. The findings indicate that clear identification of a research question, a strong methodology, and a topic aligned with the journal's mission are key to avoiding internal editor review rejection.
Take-home Message: Communication between authors and editors can help improve the quality of manuscripts submitted. The findings clarify the internal editorial review process and offer concrete suggestions for authors to increase the likelihood of moving to external peer review.

#8KK10 (2051)
Using Maxwell dimensions of quality to assess impact in a systematic review in medical education: Comparing the incomparable

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Background: Systematic reviews of medical education have no universal standard or tool to measure or synthesize impact meaningfully. Evidence might vary considerably in breadth/depth and research tradition yet still require a way of reporting impact. Kirkpatrick levels of effectiveness have limited applicability. Maxwell's dimensions of quality (from health care) might help.
Summary of Work: Aim: How useful are Maxwell dimensions in appraising poorly developed evidence in medical education? ---Setting: Systematic review: "What works best for health professions students using mobile devices/technology for educational support on clinical placements?" …based on a messy, disparate evidence-base. Method: Two reviewers independently coded 26 articles (Kirkpatrick-2--4) to Maxwell dimensions.
Summary of Results: From the 80-article scoping-review, this 'effectiveness-review' used 26 articles (including three systematic reviews). Most featured Kirkpatrick-3 evidence (17/26, 65%). On agreeing Maxwell dimensions (stimulating much discussion), evidence for impact involved: Appropriateness to need for 25/26 (96%); Accessibility, Acceptability, or Effectiveness=~77-81%; Efficiency=9/26; Equity (broadly interpreted)=4/26. Median Kappa=0.65 on the six dimensions.
Discussion: Summarizing evidence systematically in medical education requires various tools and concepts, extending notions of 'effectiveness' beyond 'does it work?'. Here, Maxwell dimensions supplemented Kirkpatrick levels of effectiveness, widening the view of 'impact' and stimulating useful dialogue. Summarizing main messages from a poorly developed evidence-base is difficult and needs more attention.
Conclusion: Adapting Maxwell dimensions of quality is feasible, useful, and potentially reliable for exploring impact in medical education systematic reviews, possibly countering some criticisms of suitability, sensitivity, and specificity of Kirkpatrick levels. This might allow a more nuanced summary of the disparate, messy, and exasperating (albeit important) evidence characterizing some topics.
Take-home Message: Maxwell dimensions of quality are worth considering as an extra lens to view impact in systematic reviews of troublesome topics in medical education. The 'three As and three Es' allow a meaningful summary of impact of educational support on learners, curricula/institutions, patient care, and beyond, stimulating discussion of apparent gaps.

#8KK11 (1283)
A scoping review of medical education research in neurosurgery

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Background: Little is known about the state of medical education (ME) research in neurosurgery. As ME started to develop in neurosurgery in recent years, it is important understand the current status and develop theory for advancement. The aim of this study was to undertake a review of ME neurosurgery literature.
Summary of Work: MEDLINE, SCOPUS and PubMed database were searched. Inclusion criteria: English language; full text available; January 2005 to December 2015. Research Questions included: numbers of published papers per year; journal types; most cited articles; frequently researched topics; and research design. Search term includes neurosurgery, medical education, teaching, training, learning and curriculum.
Summary of Results: Data analysis is on-going and preliminary results reveal that 7875 references were found across 3 databases, after remove duplication, 5184 references were found. Stage 1: three researchers screened titles/abstracts for duplicates and exclusion/inclusion criteria. Stage 2: from remaining manuscripts, conference papers and non-peer-reviewed papers were excluded.
Discussion: The preliminary result of this scoping review indicates that medical education is developing and play and important role in the field of neurosurgery because of the increasing numbers of results as year progress. However, trends of some limitation of certain topics compare with other topics are concerned.
Conclusion: This study highlights need for increased of medical education research in neurosurgery. The results provide guidance for future research programs. A rigorous database of current literature helps us identify areas of highest priority and provides us with a rationale for future grants applications and decision-making in this field.
Take-home Message: ME in neurosurgery in developing in recent years. From the results of scoping review plays an important role in developing future research of ME in Neurosurgery.

#8KK12 (2414)
Developing and piloting a research instrument for perceived stress, wellbeing and study performance among students in medicine, dentistry and psychology

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Background: Perceived stress is strongly associated with subjective wellbeing and functional ability. At tolerable levels, stress increases the level of performance. However, high-level, continuous stress has a negative effect on health and performance. The stage and content of studies may affect the perceived stress related to performance of an individual student.
Summary of Work: A research instrument for studying the students' stress, wellbeing and study performance was developed in Helsinki by combining validated tools for studying health behavior, stress and wellbeing. The new instrument is piloted in 2017 among the students of medicine, dentistry and psychology at various phases of studies.
Summary of Results: The data will be collected with a web-based survey. These data will be combined with the data from the entrance examination and the study register. An ethical approval from the Research Ethic Board of the Faculty of Medicine is in process. The participants' privacy and confidentiality will be strictly guaranteed.
Discussion: We will explore a relationship between the background and psychosocial factors (i.g. family background, social relationships and study performance at school), studying strategies and life-style factors (i.g. sleeping habits, nutrition, exercise), and perceived stress, study performance and wellbeing.
Conclusion: Results of this pilot study will be implemented in the development of methods for supporting the students, as well as in incorporating elements that support wellbeing into the reformed curricula.
Take-home Message: Students' wellbeing and study performance are likely to be related to a diversity of factors involving both background, psychosocial factors and variety of factors related to life style, behavior and studying strategies. Understanding these relationships is important in targeting appropriate support for students and in the development of the curricula.

#8KK13 (408)
Is your work being seen outside of academia? A descriptive analysis of journal article altmetrics

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Background: To complement traditional citation-based metrics, academia has begun considering altmetrics to track alternative dissemination outlets, such as weblogs and Twitter. Little is known, however, about how health professions education (HPE) research is shared among altmetric channels. This study examines altmetric attention and the characteristics of top articles in HPE.
Summary of Work: The authors searched Altmetric Explorer for HPE articles that had an altmetric event (e.g., a tweet) between 2011-2015. The search retrieved 6,265 articles from 13 journals. These articles were then analyzed using descriptive statistics. Additionally, the top 10 articles based on total Altmetric score were identified and key characteristics extracted.
Summary of Results: Articles received varied attention from 14 altmetric outlets; the top three outlets were Mendeley, Twitter, and Facebook. Between 2011-2015, HPE articles with an altmetric event increased by 15%. In 2015, five journals had 50% or more of articles with at least one altmetric event. Themes included social media and blogging.
Discussion: Altmetric attention for HPE articles has increased, suggesting interest in HPE research outside academia, especially in social media channels. Social media attention may signal a desire to share HPE research and an opportunity for broader dissemination. Shared article themes suggest that those about social media itself are quite popular.
Conclusion: This study provides a snapshot of HPE research dissemination via altmetric channels. Rising altmetric attention to HPE articles suggests broader interest in HPE research and the need for further investigation. Knowledge of popular and underutilized outlets may help investigators target their research for wider dissemination inside and outside of HPE.
Take-home Message: Altmetric attention to HPE research is increasing. Researchers should consider altmetric outlets as resources to help disseminate and promote their research. Further research should explore the utility of altmetrics as complimentary to traditional citation-based metrics to determine overall research impact.