9GG POSTERS: PBL
Location: South Hall, Level 0, MiCo

9GG1 (19684)
Evaluation of a revised interdisciplinary PBL tutor training

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Background: The Charite modular curriculum of medicine (MSM) requires 80 more PBL tutors every year. During our reformed curriculum (10 PBL groups per year), clinical teachers were preferred as PBL tutors. For MSM, every scientific assistant attends a two-day-PBL Tutor Training (PTT). The new PTT of 2013 includes interactive teaching elements and handling critical situations. Comparing the old (2012) with the new PTT concept (2013), we assessed whether the new concept would be more convenient to qualify PBL tutors.

Summary of Work: The new PTT concept in 2013 reduced theoretical inputs. Medical and non-medical teachers were trained together. Every participant was handed a questionnaire after PTT for evaluating PTT on a 6-step Likert scale (6= very good, 1= very poor).

Summary of Results: 101 of 235 participants in 2012 and 167 of 187 in 2013 evaluated the PTT. The professional background of participants (68% medical versus 32% non-medical) was constant. 87.1% had teaching experience in 2012, 78.4% in 2013. Comparing the two concepts, the following aspects improved between 2012 and 2013: Understanding PBL principle (5.5 vs. 5.8) and recognising PBL tutor tasks (5.3 vs. 5.6). The individual motivation for PBL increased with the new PTT (5.5 vs. 5.0). Average marks for the PTT were 5.1 in 2012 and 5.8 in 2013.

Discussion and Conclusions: The new interdisciplinary PTT with a higher degree of interactivity succeeded in qualifying and motivating PBL tutors more than the old concept. The participants understood the principle of PBL and their tasks better in 2013.

Take-home messages: The new interdisciplinary PTT concept will be continued.

9GG2 (22338)
Where do you want to carry your students? Driving learning with summative assessment in Problem Based Learning (PBL) tutorial

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Background: There are international concerns that the pedagogy of PBL is being eroded with students behaving ritualistically and failing to engage in authentic inquiry. Medical Faculty of Islamic University of Indonesia applied tutor-led summative assessment in order to re-engage students in PBL tutorial. Tutors assessed students’ performance in each tutorial session using specific assessment form with the grade contributing 20 percents to the Block grade. In this study, we explored students’ perceptions about the impact of summative assessment on their motivation to engage in PBL tutorial.

Summary of Work: In-depth interviews with purposively sampled students with over one year’s experience of PBL were analysed using the theoretical lens of self-determination theory. The data saturation has been reached with 10 students. Framework analysis developed a thematic framework describing the key findings.

Summary of Results: Two main themes emerged: (i) Grade-oriented focus students were directed by external motivation. They applied several strategies to achieve a high grade including unprofessional ones such becoming dominant person to achieve good mark. They perceived that they learned as a controlled setting designed by faculty. Consequently they felt little support to become autonomous learners (ii) Learning-oriented focus students, although mindful of the importance of grades, were motivated by internal motivation. They experienced a sense of cognitive dissonance in having to hold the two positions of being grade-focused and learning-focused at the same time.

Discussion and Conclusions: Summative assessment in PBL tutorial is not the best way to encourage students to become autonomous learners.

Take-home messages: We need to design other methods that could enhance students’ learning in PBL tutorial.
**Abstracts: Session 9GG**

**Tuesday 2 September: 1600-1730**

**9GG3 (19393)**

**The role of the tutor in Problem Based Learning (PBL)**

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**Background:** Problem Based Learning (PBL) has been used for many years in medical education. Most undergraduate students who are studying as doctors, at some stages of their studies have experienced the PBL approach to education.

**Summary of Work:** It has been said that in the PBL setting, the teacher becomes the facilitator. Tutor help own students to find the right way, he doesn't show them what they have to study, but he helps them to answer the main question of the every medical students – how I have to study?? By what way???. The tutor's role seriously differ from the traditional role of providing information. There will be a greater emphasis on questioning as a means of drawing out what students already know and helping them identify what they still need to learn. This role is not easy at first, but does develop with experience.

**Summary of Results:** In a traditional curriculum, teachers generally do most of the talking during the learning process. In general, PBL tutors serve the three primary roles of facilitator, resource, and evaluator. Thoughtful and reflective observation and patience are core skills needed for effective tutoring.

1. expert tutors need to have subject matter knowledge but also subject specific pedagogical knowledge to deal with difficulties students experience with learning subject matter and tutors need more general pedagogical knowledge;
2. tutors convey high expectations in a very indirect but understanding manner.

**Discussion and Conclusions:** The results indicate that being a tutor is a balancing act and that the tutor need continuous support and input from different sources.

**Take-home messages:** The role of the tutor in the PBL format, which emphasizes small-group learning, proved critical.

**9GG4 (21060)**

**Development of a revalidation programme for facilitators to improve the student experience of problem-based learning (PBL)**

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*Joanne Burke*, University of Glasgow, Medical School, Glasgow, United Kingdom
*Anne O’Dowd*, University of Glasgow, Medical School, Glasgow, United Kingdom
*Margaret-Ann Flynn*, University of Glasgow, Medical School, Glasgow, United Kingdom

**Background:** Problem-based learning (PBL) has been part of the MBChB curriculum in Glasgow since 1996. Glasgow PBL facilitators must attend initial training but subsequent staff development sessions have traditionally been optional. Feedback from staff and students however, suggests that there is a considerable amount of variation in facilitation practice.

**Summary of Work:** It has been proposed that the provision of ongoing professional training can improve and maintain quality in PBL. To address inconsistencies in PBL facilitation, an advanced professional development programme has been implemented. Facilitators must take part in a peer observation process and attend a workshop once every 2 years in order to achieve revalidation. The workshop reinforces basic principles and gives practical advice using short talks and video material. Evaluation of the programme included qualitative and quantitative data collection.

**Summary of Results:** The peer observation process was found to be useful and reassuring to facilitators. Participants evaluated the workshop as helpful and relevant. Facilitators identified areas for their own future improvement which included establishing ground rules and following the PBL process more closely. Video material showcasing appropriate interventions was also highly rated. The evaluation from our revalidation programme suggests that the training workshop and peer observation reinforced PBL guidelines and facilitators were receptive to examples of good practice.

**Discussion and Conclusions:** PBL revalidation improved academic confidence, gave reassurance and provided a mechanism to enhance quality.

**Take-home messages:** A mandatory PBL facilitator revalidation programme was useful in reinforcing good facilitation practice which should lead to a more consistent PBL experience for medical students.
A qualitative assessment of the use of social media as an adjunct to Problem-Based Learning for medical students at a District General Hospital

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Background: Social media based medical education is a growing concept. Research has highlighted Twitter as an emerging method for integrating social media into medical education. It uniquely features a 140-character limit facilitating succinct dialogue. However, evaluation of Twitter as a teaching intervention is lacking in the literature. Our aim was to evaluate Twitter as a teaching adjunct, specifically to PBL.

Summary of Work: The sample population comprised of third year medical students at a District General Hospital. An online Twitter account was set up to augment pre-existing PBL sessions. The researchers acted as tutors and used the Twitter account to distribute appropriate learning materials and answer questions outside of scheduled sessions. Twitter feeds were then integrated into the subsequent tutorials. A focus group was held at the end of term and the data analysed using the framework analysis model.

Summary of Results: The general consensus amongst participants was that Twitter enhanced the overall learning experience. Key themes that surfaced were: (a) improved student-teacher relationships, (b) increased efficiency and quality of classroom sessions, (c) awareness of maintaining professionalism and confidentiality in the public domain, (d) time cost of familiarisation with the Twitter interface.

Discussion and Conclusions: Twitter has been demonstrated as an effective adjunct to PBL by enhancing classroom based sessions. The student-teacher relationship benefited from the accessible and informal nature of Twitter. Students welcome the use of social media as a teaching adjunct, however concerns regarding the public nature of Twitter would need to be addressed.

Take-home messages: Twitter has potential for integration as an adjunct to PBLs and further medical education.

Better Cognitive Outcomes in Problem-Based Learning: A Twenty-Years Experience of a Medical School in Japan

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Background: There is a continuing debate about the merits of problem-based learning (PBL) compared with conventional medical education. This study investigates the cognitive outcomes, expressed by the academic achievement scores of basic and clinical sciences and national licensing examination results of graduates from a PBL school in Japan over a twenty-year period.

Summary of Work: As an indicator of cognitive outcomes, we compared the academic achievement scores in basic and clinical science and national medical licensing examination pass rates, during each 10 years before (1990-1999) and after (2000-2009) implementation of PBL in Gifu University School of Medicine, a PBL medical school in Japan.

Summary of Results: The academic achievement scores of basic sciences, the scores of clinical sciences, and the pass rates of national licensing examination after the introduction of PBL, were significantly higher than those before PBL. The scores of clinical science were significantly higher in both male and female students after the implementation of the PBL program. Before PBL, the test scores for female student were higher than that of male students, whereas no difference between male and female students was observed after implementation of the PBL program. No differences were observed for graduation, holdover or attrition rates between PBL and non-PBL generations.

Discussion and Conclusions: These long-term results suggest that, in terms of acquisition of cognitive ability, the PBL method was equal to or better than traditional methods of undergraduate medical education. In particular, a superior pace of knowledge acquisition by male students after PBL was observed.

Take-home messages: PBL is a suitable education model for acquisition of knowledge in Asian countries.
9GG7 (21869)
Auditing Demographics in Problem Based Learning and Consultation Skills Cases in the Undergraduate Medical Curriculum in a UK Medical School

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**Background:** Problem based learning (PBL) and consultation skills training are used widely across UK undergraduate medical curriculums. These utilise clinical cases to aid learning, but have been criticised for focus upon biomedical concepts and lack social factors. The General Medical Council expects students to communicate competently with patients from a range of social, cultural and ethnic backgrounds, but studies suggest students find this difficult. Including an appropriate range of demographics within cases can facilitate discussion and understanding.

**Summary of Work:** An initial audit of the case demographics used in PBL and Consultation skills was completed in 2010/11 at a PBL based UK medical school. This compared the case demographics with varied population statistics (UK/Local, General Practice attending and hospital attending) and generated recommendations of demographic coverage for consideration when amending the cases. Re-audit following change is in progress.

**Summary of Results:** The initial audit demonstrated that marital status, sexual orientation, religion and occupational status were poorly represented compared to the population statistics. Some minority groups, single patients and sexual minorities were under-represented and certain age groups over-represented. Overall age and ethnic groups broadly followed the population trend.

**Discussion and Conclusions:** Recommendations for change in case demographics based on the initial audit findings were disseminated to those responsible for case content. The emergent re-audit analysis will assess whether these have been enacted in the current demographic diversity.

**Take-home messages:** We recommend auditing the range of cases presented in PBL or other case material as an important way of ensuring appropriate representation in teaching of the diversity of UK’s population.

9GG8 (22285)
The relation of students’ self-rated proficiency and long-term gains in academic achievement: A comparison between a problem-based learning and a traditional curriculum

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**Background:** Good linguistic proficiency is a prerequisite to successfully complete ones studies. Indeed, several studies show that being a non-native speaker is associated with lower scores on, for example, national licensing exams. In this study we addressed the question how students’ self-rated proficiency was related to long-term gains in academic achievement. Importantly, we investigated whether this relation was dependent on the educational environment. In particular, we compared a problem-based-learning curriculum (PBL) and a traditional curriculum.

**Summary of Work:** Overall N=1197 students (traditional curriculum) and N=153 students (PBL) in the semesters 6 to 10 participated in the longitudinal study. The language proficiency was recorded by self-ratings whereas the achievements were assessed by progress tests. The data was analyzed using structural equation models.

**Summary of Results:** Self-rated linguistic proficiency was related to gains in academic performance. This relation, however was only found in the traditional track (r=.25; p <.001). In contrast, there was no such relation in the PBL curriculum.

**Discussion and Conclusions:** Although our study allows no clear-cut conclusion on the underlying mechanisms, a PBL-curriculum might be beneficial for non-native learners. For instance, the regular and intense communication opportunities may improve their language competence and thus result in greater confidence in their own abilities and consequently might affect their achievement.

**Take-home messages:** Disadvantages of non-native speakers only occur in traditional learning environments. PBL-curricula might be able to enhance language proficiency of non-native speakers.
9GG9 (20781)
Assessment in Problem-Based tutorials: Difficulties and possible solutions

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Background: Students’ self and peer-assessment seems not to be an accurate measure of the Problem Based Learning (PBL) tutorial process and is usually greater than tutorial scores.

Summary of Work: Objective: to create specific descriptors in order to avoid a great variation in the tutorial evaluation method. Methods: 15 detailed descriptors were introduced in the tutorial process when opening the problem and other 15 descriptors in the closing sections.

Summary of Results: We compared the results in three different grades, during 18 months and three different modules each semester. There were no difference between scores in the grades and in the modules, even considering that the tutors were not the same.

Discussion and Conclusions: Detailed descriptors are very helpful to avoid differences between students and tutors and are of great use as assessment in PBL tutorials.

Take-home messages: Assessment with detailed descriptors are very important.

9GG10 (19851)
A longitudinal evaluation of changes in attitudes and perceptions of an evolving RUSM hybrid PBL program in a cohort of former RUSM students now acting as program facilitators

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Background: Ross University School of Medicine (RUSM) has recently modified its Problem Based Learning (PBL) platform and rebranded the program Small Group Learning (SGL). RUSM also employs graduates as instructors in PBL/SGL. We had the opportunity to evaluate a cohort of 16 physicians who first experienced PBL as students and later facilitated both PBL and SGL at RUSM.

Summary of Work: The physicians were surveyed in three questionnaires. The first explored their attitudes and opinions of PBL as medical students, the second as PBL facilitators, and the final as facilitators of SGL in its new format. The facilitators attended a focus group to discuss their perceptions of this learning platform.

Summary of Results: Preference for an MD vs. PhD as a facilitator was very high in this cohort. Some members of the cohort who had very poor PBL student experiences AND had poor acceptance of the platform rated the success of their students’ learning and experiential benefit equally low. Other members with poor student experiences in PBL but STRONG acceptance of the platform rated the value of the PBL/SGL experience of their own students quite high, demonstrating these facilitators’ reflection and deliberate practice in this small group platform. SGL format changes were very well received.

Discussion and Conclusions: The longitudinal evaluation of this cohort of individuals provides some insight into the maturation of the PBL/SGL facilitator, and the impact of clinical experience amongst facilitators.

Take-home messages: Acceptance of the PBL/SGL platform as valuable is of critical importance in the success of this learning tool and appears to be greater with clinical experience.
**9GG11 (22508)**

Did iPads ruin our PBL?

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**Background:** All the first year medical students received iPads in 2013 at the University of Helsinki. Many teachers expressed fears, that the use of iPads with direct access to on-line resources and social media may disturb and disrupt the much-liked and effective PBL experience.

**Summary of Work:** The aim has been to get all students and PBL-tutors involved in the iPad initiative. Tutors had 12 training sessions during the year 2013, 6 of them prior the semester. Students were offered help materials, eight Q&A-sessions and two training sessions. We studied with mixed methods (Cresswell & Plano Clark 2007) how and why students and teachers use iPads and what are their attitudes towards these devises. Data was gathered from web surveys, group interviews and direct observations.

**Summary of Results:** Most tutors and all the students adopted iPads in PBL-sessions. The tutors and students together experimented and developed new ways of using iPads and various apps to enhance collaboration and teamwork with interactive whiteboard, quick access to study materials as well as instant messaging. Only in a few instances distributive use of iPads was reported.

**Discussion and Conclusions:** The use of iPads has not changed the essence of PBL process. On the contrary, brand new ways to handle different aspects of PBL-session have been developed and experimented by teachers, students, support persons and library personnel in collaboration.

**Take-home messages:** iPads bring a welcome addition to PBL sessions, and can enhance collaboration, interaction and teamwork when properly integrated.

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**9GG12 (20529)**

Challenges for teachers when constructing teaching cases

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**Background:** Despite a long tradition of the use of cases in medicine, a recent and increasing awareness of the intention of the use of cases and its implications for case authoring has emerged. The quality of a case is a determinant for students’ active participation and learning and for their indulgence in discussions, e.g. in problem-based learning.

**Summary of Work:** During workshops on case authoring we have used and analyzed cases constructed by teachers. This also included peer feedback and student perceptions. In a separate study we explored what students perceive as important for cases to promote meaningful learning.

**Summary of Results:** Different aspects in the writing were found important, relating to a) meaningful learning, b) professional development and c) topic or stakeholder perspective. When cases are used to stimulate a discussion aimed at deepening and widening knowledge something in the case should be unclear or mysterious, depicting authentic dilemmas or several problems. A complex narrative story may trigger meaningful learning when there are no simple answers. When cases are used to stimulate professional decision-making they have to be open-ended, narrative and add a professional perspective as well as being patient-centered. Students consider multiple professional perspectives even more stimulating. If patient narratives are used, it is important to be clear about the intended outcome and how it differs from a narrative from a professional perspective. Furthermore, peer and student feedback is very important during the process of constructing cases for teaching.

**Discussion and Conclusions:** Guidelines and workshops may facilitate case construction.