

REDESIGN OF RESIDENT EDUCATION DURING A PEDIATRIC CRITICAL CARE MEDICINE (PCCM) ROTATION USING PROCESS-ORIENTED GUIDED INQUIRY LEARNING (POGIL)

Louisa Sethi¹, Satid Thammasitboon², Brian Rissmiller², Nathan Serazin², Lindsay Cameron³, Fong Lam², Danny Castro²

¹ Baylor College of Medicine, Department of Texas Children's Hospital

² Texas Children's Hospital, Pediatrics, Critical Care Medicine

³ Texas Children's Hospital, Pediatrics, Infectious Disease

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Background: In critical care, residents often acquire knowledge without the ability for practice transfer. POGIL, a learner-centered pedagogy, has been shown to improve overall exam scores, knowledge retention, course satisfaction and critical thinking skills. We employed POGIL to scaffold complex concepts through exploration, formulation and application of concepts phases to optimize learner engagement, knowledge acquisition, and self-efficacy.

Materials/Methods: We used an Educational Design Research (EDR) framework to guide an iterative design and development of the POGIL modules for pediatric residents during PCCM rotation. The educational problem was explored through surveys of pediatric residents and PCCM fellows, literature review on active learning strategies, and meeting with stakeholders. Survey data revealed learner and facilitator engagement was not optimized along with a desire for interactive case-based learning. After attending a workshop by the National POGIL Project, we created a prototype and derived consensus from the developing team which was trialed, and revised by a single fellow facilitator. To finalize the POGIL modules, we utilized feedback from participating residents, auditing faculty educators and subject matter experts. We administered the MUSIC® inventory, a six point Likert scale, to the pediatric residents pre and post-implementing POGIL modules for evaluation of five key engagement principles: eMpowerment, Usefulness, Success, Interest, and Caring.

Results: We finalized seven POGIL modules and piloted to two groups of residents. The pre and post MUSIC® inventory medians showed the motivation strengths of the modules for residents to engage in learning in two areas-empowerment (pre-intervention 3, post 5, $p = 0.0001$) and interest (pre-intervention 5, post 6, $p < 0.0001$). Qualitative analysis identified five themes related to quality of the POGIL modules: Interaction, Resources, Content, Learning process, Time management used to refine the design principles prior to a full scale implementation.

Conclusions: Two limitations include the small number of residents it was delivered to, and a single fellow delivered all POGIL modules. The next steps of this project are to train the PCCM fellows in the POGIL framework and progress toward implementing the finalized modules with multiple fellow facilitators while continuing to use EDR to reassess the effectiveness of the curriculum.

Images / Graph / Table

