



## BEST EVIDENCE MEDICAL EDUCATION

### **BEME Spotlight No.8**

#### **A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education**

*Yvonne Steinert, Karen Mann, Angel Centeno, Diana Dolmans, John Spencer, Mark Gelula & David Prideaux*

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**Review website:** <http://www.bemecollaboration.org/beme/pages/reviews/steinert.html>

**Keywords:** staff development, improving training, medical faculty

#### **Headline conclusions:**

Despite methodological limitations, the faculty development literature tends to support the following outcomes:

- High satisfaction with faculty development programs. Overall satisfaction with programs was high. Participants consistently found programs acceptable, useful and relevant to their objectives.
- Changes in attitudes. Participants reported positive changes in attitudes toward faculty development and teaching, citing increased self-awareness, motivation and enthusiasm.
- Gains in knowledge and skills. Participants reported increased knowledge of educational principles and gains in teaching skills. Where formal tests of knowledge were used, significant gains were shown.
- Changes in teaching behaviour. Self-reported behaviour change was consistently reported. Although not consistently reflected in student evaluations, it appears that changes in teaching performance are detectable.
- Changes in organizational practice and student learning. These were not frequently investigated. Reported changes included greater educational involvement and establishment of collegial networks.
- Key features of effective faculty development. Features which appear to contribute to effectiveness include: the use of experiential learning, provision of feedback, effective peer and colleague relationships, well-designed interventions following principles of teaching and learning, and the use of multiple methods of teaching and learning within single interventions.

**Background and context:** Preparing health care professionals for teaching is regarded as essential to enhancing teaching effectiveness. Although many reports describe a variety of faculty development interventions, there is a paucity of research demonstrating their effectiveness.

**Review objective:** The objective of this review was to synthesize the existing evidence that addresses the following question: "What are the effects of faculty development interventions on the knowledge, attitudes and skills of teachers in medical education, and on the institutions in which they work?"

## Review methodology:

- **Search strategy:** The search, which covered the period 1980-2002, included three databases (Medline, ERIC and EMBASE) and used the following keywords: staff development; in-service training; medical faculty; faculty training/development and continuing medical education. Manual searches of four major medical education journals, proceedings of medical education conferences, experts' recommendations, and review articles were also conducted. Articles in English, French, Spanish and German were included.
- **Inclusion and exclusion criteria:** From an initial 2777 abstracts, 324 addressed faculty development and teaching improvement. Of these, 226 related to teaching. Of the 130 additional papers identified through hand searching, 77 addressed teaching. Review of the full texts of these 303 papers identified 53 that met the inclusion criteria; that is, they described faculty development interventions focused on teaching effectiveness in medicine and included outcome data beyond participant satisfaction. All study designs were included.
- **Data extraction:** Data were extracted systematically by six coders, using the standardized BEME coding sheet, adapted for our use. Two reviewers coded each study. Coding differences were resolved through discussion. Study quality and strength of findings were also rated using agreed-upon criteria.
- **Data synthesis:** Data were synthesized using Kirkpatrick's four levels of educational outcomes: reaction; learning (attitudes, knowledge and skills); behaviour; and results (impact on organizational practice and on student or resident learning). The authors' terminology was used to group the findings by type of intervention (workshops, short courses, seminar series, longitudinal programs and fellowships) and analyzed each according to levels of outcome. In addition, 8 high-quality studies were analyzed in a "focused picture". Effect size for those 8 studies was calculated. Meta-analysis was not possible, due to heterogeneity of study designs, time frames and interventions.

## Review methodology:

- In the implementation of staff development programmes we should build on our successes. The literature describes successful programs, with recognizable, replicable elements. It is now important to tease apart the elements that work.
- Re-examine the question of voluntary participation. In many contexts, the requirement to prepare for teaching effectiveness may not be met unless participation is expected and required. Moreover, the voluntary nature of faculty development raises questions about the institutional culture and the values (both explicit and implicit) that it places on teaching and learning.
- Develop programs that stimulate reflection and learning among participants, raising their awareness of themselves as teachers. This would form the basis for ongoing self-directed development rather than the need to primarily have "teacher-directed" interventions.
- Develop more programs that extend over time, to allow for cumulative learning, practice and growth.
- Acknowledge the importance of context. The organizational culture, the curriculum, teachers and students all contribute to a context which is critical to the effectiveness of educational change.
- More deliberate use of theory (particularly theories of learning) and educational principles should be used in the design and development of our faculty development programs. We need to link theory with practice, in an iterative cycle of asking questions in practice, studying these questions, and testing our answers. We also need to better understand teachers' educational practices and the real problems that teachers encounter so that we can use this knowledge to inform theory, which can help us in developing improved interventions and evaluating effectiveness.

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Association for Medical Education in Europe (AMEE), Tay Park House, 484 Perth Road,  
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