

# The International Literature on Teaching Faculty Development in English-Language Journals: A Scoping Review and Recommendations for Core Topics

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## ABSTRACT

**Background** With increasing physician mobility, there is interest in how medical schools and postgraduate medical education institutions across the world develop and maintain the competence of medical teachers. Published reviews of faculty development (FD) have predominantly included studies from the United States and Canada.

**Objective** We synthesized the international FD literature (beyond the US and Canada), focusing on FD type, intended audience, study format, effectiveness, differences among countries, and potential unique features.

**Methods** We identified English-language publications that addressed FD for medical faculty for teaching and related activities, excluding US and Canadian publications.

**Results** A search of 4 databases identified 149 publications, including 83 intervention studies. There was significant growth in international FD publications for the most recent decade, and a sizable number of studies were from developing economies and/or resulted from international collaborations. Focal areas echo those in earlier published reviews, suggesting the international FD literature addresses similar faculty needs and organizational concerns.

**Conclusions** The growth in publications in recent years and a higher proportion of reporting on participant reactions, coupled with less frequent reporting of results, transfer to practice, and impact on learners and the organization, suggest this is an evolving field. To enhance international FD, educators and researchers should focus on addressing common needs expressed by faculty, including curriculum design and evaluation, small group teaching, assessing professionalism and providing feedback. Future research should focus on approaches for developing comprehensive institutional FD programs that include communities of learning and practice and evaluating their impact.

## Introduction

Recent decades have seen increasing global mobility of the physician workforce,<sup>1,2</sup> and since 2010, accreditation of postgraduate training programs outside of the United States by the Accreditation Council for Graduate Medical Education International (ACGME-I).<sup>3,4</sup> Concurrently, in undergraduate medical education (UME), there is an effort to recognize the accreditors of international medical schools from which some graduates enter residency education or practice in the United States.<sup>5</sup> This has heightened interest in the professional development of faculty physicians who serve as teachers, supervisors, and mentors in UME and postgraduate medical education (PGME) across the world. Faculty development (FD), also termed staff or trainer development and teacher or tutor training, has grown in importance with the recognition that physicians who serve as teachers require added preparation beyond their medical

training. Contributing factors encompass new approaches to teaching and learning, such as competency-based medical education (CBME)<sup>6</sup> and growing complexity in health systems around the world.

Faculty development has been defined as the multitude of activities that enhance the skills of medical teachers.<sup>7</sup> Later descriptions added a focus on broader roles of academic faculty, including scholarship, administration, career management,<sup>8</sup> change management, and organizational culture and advancement.<sup>9</sup> Prior systematic reviews have addressed FD program characteristics and formats, intended outcomes, study type and quality, and FD within organizational contexts.<sup>10–13</sup>

In this review, we aggregated the international literature on FD for medical teachers—physicians engaged in medical education—to better understand its content, focal areas, and unique features, and to identify actionable suggestions for developing and evaluating FD programs. We mapped the literature over the study period, explored common and unique features, and compared it with earlier published reviews.

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## Methods

We used the 5-step approach to scoping reviews by Arksey and O'Malley to "map relevant literature in the field of interest"<sup>14</sup> (BOX 1), with consideration of enhancements by Levac and colleagues.<sup>15</sup> Scoping reviews are useful when the primary literature is heterogeneous, and the focus on interventions and generalizable outcomes may exclude work that could offer insight into emerging and underexplored topics.<sup>14</sup> We aimed to enhance readers' understanding of:

- the types of FD available to medical teachers in international settings;
- the impact on outcomes of interest;
- FD effectiveness and cost-effectiveness;
- differences by nations and country status; and
- unique content, modes of delivery, and research foci in international FD.

Extracting information on key attributes of the international FD literature was selected as the approach with the highest potential practical yield for program and institutional leaders and medical teachers. We defined "international" as the literature from outside the United States and Canada, as prior reviews had predominantly encompassed publications from the United States, and, to a lesser degree, Canada. Of 111 studies in 1 high-quality review, 79 (71%) were from the United States and 8 (7%) were from Canada.<sup>10</sup> For practical reasons we limited our review to English-language publications.

### Data Sources and Abstraction

We searched 4 databases (MEDLINE, EMBASE, CINAHL, and ERIC) using the terms faculty development, staff development, staff training, professional development, physicians, trainers, teachers, and teaching. We also searched the National Library of Medicine's Medical Subject Headings (MeSH) term "faculty, medical" and the subheadings "education" and "organization and administration." We included studies published prior to December 31, 2018.

This review used Kirkpatrick's classification of the outcomes of work role-related professional development to assess the effectiveness of FD interventions.<sup>16</sup> In addition to intervention studies, we included program descriptions, needs assessments, and perspectives, as unique attributes of international FD might be found in these publications. We excluded reviews and editorials but manually searched their reference sections for additional articles. A search of the grey literature, including educational organization

**BOX 1** Arksey and O'Malley 5-Step Scoping Review Framework<sup>14</sup> with Enhancements by Levac and Colleagues<sup>15</sup> in Parentheses

1. Identifying the research question (clarifying and linking the purpose and research question)
2. Identifying relevant studies (balancing feasibility with breadth and comprehensiveness of the scoping process)
3. Study selection (using an iterative team approach to selecting studies and extracting data)
4. Charting the data (incorporating a numerical summary and qualitative thematic analysis)
5. Collating, summarizing, and reporting the results (identifying the implications of the study findings for policy, practice, or research)

Optional: Consultation with stakeholders (Levac and colleagues adopted this as a required step)

websites, white papers, and dissertations, did not yield added usable information.

We abstracted data on country of publication, FD type, length of intervention, and study design and outcomes, and added information of interest, such as focal areas, costs, barriers, and facilitators, using a structured template developed by the investigators. We adapted an established FD typology by Ullian and Stritter<sup>17</sup> to categorize interventions as (1) workshops (educational interventions lasting less than 1 day); (2) brief courses (2 to 5 days); (3) longitudinal programs (more than 5 days of programming, often on a part-time basis); (4) fellowships, including those that lead to a certificate; (5) self-guided FD; and (6) FD strategies at the organizational level. Prior reviews have considered FD across the education continuum, without focusing on UME or PGME contexts.<sup>10-12</sup> In keeping with the focus of the *Journal of Graduate Medical Education*, we highlighted FD for PGME teachers as the intended audience. To create a rubric of medical teacher roles as an organizing guide, we updated an established description of medical teacher roles by Harden and Crosby<sup>18</sup> by adding a forecast of teacher roles for the year 2025 by Simpson and colleagues.<sup>19</sup> We suggest the resulting rubric (BOX 2) as a framework for a faculty development blueprint.

## Results

The online search of titles found 3320 citations for the collective search terms. We eliminated 2461 articles originating from the United States and Canada. A scan of abstracts and full text for the remaining 859 titles identified 194 publications that addressed FD for educational roles. Of these, 31 were editorials, opinion pieces, or reviews and were excluded. Similar to other reviews,<sup>10-12</sup> the search returned predominantly English-language articles. We

**Box 2** Medical Education Faculty Roles and Performance Dimensions(1) *Information provider*

- (i) Lecturer in classroom setting
- (ii) Teacher in clinical or practical class setting

(2) *Role model*

- (iii) On-the-job role model
- (iv) Role model in the teaching setting
- (v) Simpson: Role model for 2025 physician roles who serves as leader/member of interprofessional teams, uses integrated systems thinking, and attends to personal, learner, and colleague well-being

(3) *Facilitator*

- (vi) Mentor, personal adviser, or tutor
- (vii) Learning facilitator
- (viii) Simpson: Learner-Centered Navigator and Professional Coach who guides learners' use of resources and practice to achieve identified targets

(4) *Assessor*

- (ix) Planning or participating in formal examinations of students
- (x) Curriculum evaluator
- (xi) Simpson: Diagnostic Assessor who uses big data to identify individual/group performance gaps and customizes training accordingly

(5) *Planner*

- (xii) Curriculum planner
- (xiii) Course organizer
- (xiv) Simpson: Technology Adopter who is an early adopter of technology and is fluent in selecting and using appropriate technology tools
- (xv) Simpson: Learning Environment Designer, Engineer, Architect, and Implementer who optimizes the environment for learning informed by the relevant sciences

(6) *Resource developer*

- (xvi) Production of study guides
- (xvii) Developing learning resource materials (paper, electronic, online)
- (xviii) Simpson: Content Curator who accesses, selects, sequences, and delivers high-quality content developed by national and international experts

excluded 14 articles with English abstracts but full-text available only in a foreign language (Chinese, French, German, Hebrew, Korean, and Spanish). The final data set encompassed 149 articles, including 83 intervention studies.

### Faculty Development by Nation and Distribution Over the Study Period

The study period encompassed Spring 1986, the earliest publication of an FD intervention from Nigeria, Sub-Saharan Africa, to December 2018.<sup>20</sup>

**Box 3** Faculty Development Publications and their Countries of Origin

- United Kingdom  
21 publications: 13 interventions,<sup>21–33</sup> 8 other articles<sup>34–41</sup>
- Sub-Saharan Africa  
18 publications: 9 interventions,<sup>20,42–49</sup> 9 other publications<sup>50–58</sup>
- Germany  
11 publications: 7 interventions,<sup>59–65</sup> 4 other articles<sup>66–69</sup>
- India  
9 publications: 6 interventions,<sup>70–75</sup> 3 other publications<sup>76–78</sup>
- Saudi Arabia  
6 publications: 5 interventions,<sup>79–83</sup> 1 needs assessment<sup>84</sup>
- Turkey  
5 publications: 5 interventions<sup>85–89</sup>
- Iran/Turkey  
5 publications: 3 interventions,<sup>90–92</sup> 2 needs assessments<sup>93,94</sup>
- Israel  
5 publications: 2 interventions,<sup>95,96</sup> 3 other publications<sup>97–99</sup>
- Pakistan  
5 publications: 1 intervention,<sup>100</sup> 4 other articles<sup>101–104</sup>
- Switzerland  
4 publications: 4 interventions<sup>105–108</sup>
- South Korea  
4 publications: 3 interventions,<sup>109–111</sup> 1 needs assessment<sup>112</sup>
- Netherlands  
4 publications: 2 interventions,<sup>113,114</sup> 2 other articles<sup>115,116</sup>
- Australia  
4 publications: 1 intervention,<sup>117</sup> 3 other publications<sup>118–120</sup>
- Singapore  
3 publications: 1 intervention,<sup>121</sup> 2 needs assessments<sup>122,123</sup>
- China  
2 publications: 1 intervention,<sup>124</sup> 1 needs assessment<sup>125</sup>
- Denmark  
2 publications: 2 interventions<sup>126,127</sup>
- Japan  
2 publications: 2 interventions<sup>128,129</sup>
- Nepal  
2 publications: 2 interventions<sup>130,131</sup>
- Russia  
2 publications: 2 interventions<sup>132,133</sup>
- Sweden  
2 publications: 2 interventions<sup>134,135</sup>
- 1 intervention study each from Finland,<sup>136</sup> Italy,<sup>137</sup> Lebanon,<sup>138</sup> Malta,<sup>139</sup> Mongolia,<sup>140</sup> and Qatar<sup>141</sup>
- 1 non-intervention publication each from Haiti,<sup>142</sup> New Zealand,<sup>143</sup> Thailand,<sup>144</sup> United Arab Emirates,<sup>145</sup> and Uruguay<sup>146</sup>
- Multinational  
22 publications: 4 interventions,<sup>147–150</sup> 12 program descriptions,<sup>151–162</sup> collaborations, 6 needs assessments<sup>163–168</sup>

Publications and their nations of origin are shown in BOX 3. In our study, nations contributing the highest number of FD publications included the United Kingdom (21 publications), followed by Germany, India, and Saudi Arabia. Sub-Saharan African nations collectively accounted for 18 publications.

Of 22 publications that resulted from multinational collaborations, a sizable share (1 intervention<sup>149</sup> and 9 other articles<sup>153,155–157,159–161,165,167</sup>) resulted from the work of the US-based Foundation for Advancement of International Medical Education and Research (FAIMER). Five articles (1 intervention<sup>148</sup> and 4 other publications<sup>152,158,162,166</sup>) described the efforts of the European Academy of Teachers in General Practice (EURACT) to advance education in family medicine and general practice, and 2 described the outreach work by the Canadian Besroure Centre for Global Family Medicine.<sup>151,163</sup> Three articles (2 interventions<sup>43,48</sup> and 1 program description<sup>54</sup>) resulted from the work of the US-funded Medical Education Partnership Initiative to enhance medical education capacity in Sub-Saharan African nations.<sup>169</sup>

TABLE 1 shows the distribution of intervention studies by type and sample size over the entire study period. Focused topics for international FD included family medicine and generalist education, problem-based learning, communication skills, simulation, ethics, professionalism, multiple-choice question writing, change management, mentoring, educational research, and leadership skills. Interventions were most often voluntary (40), or no information was provided (39). In only 4 instances was FD described as mandatory, and in 2 cases this was for individuals who planned to serve as FD teachers.

TABLE 1 shows that 43 of the intervention studies focused on medical teachers in UME, 23 addressed teachers in PGME, and for 17 studies the focus was general and encompassed both types of faculty or the intended audience was not clearly defined. Within the PGME FD literature, the EURACT family medicine courses have been taught for 2 decades<sup>151</sup> and have grown to focus at 3 levels (novice teacher, intermediate, and advanced course for proficient teachers).<sup>148</sup> Other interventions focused on general,<sup>23</sup> psychiatry consult,<sup>27</sup> and change management skills<sup>29</sup> for UK general practice physicians; training general practice teachers in Germany;<sup>65</sup> the experience of Japanese<sup>129</sup> and South American family physicians<sup>150</sup> attending FD in the United States; “train the trainer” courses for family medicine faculty from Sub-Saharan African nations;<sup>43,44</sup> and communication skills training for PGME teachers in Qatar.<sup>141</sup> Several publications explored the utility of transporting established US FD courses like the Stanford Faculty Development

Program to international settings.<sup>127,132–135</sup> Thematic topics in the literature did not vary among publications from the Organisation for Economic Cooperation and Development (OECD) nations and those from developing economies. Advances in medical education, such as advancing CBME, were key topics throughout, and advancing family medicine education was a theme in European, Sub-Saharan African, and South American publications.

Novel interventions included a pilot of evaluation site visits after an FD course, which allowed participants to show evidence of their behavior change through use of trainees,<sup>21</sup> actors<sup>24</sup> to simulate trainees with academic challenges, peer observation of teaching,<sup>26</sup> and an intervention using abstract paintings and narratives to foster reflective capacity in family physicians.<sup>95</sup>

Studies highlighted added barriers to FD for PGME teachers, including clinical productivity expectations that may interfere with their education roles.<sup>138</sup> Several authors advocated for online courses to overcome role conflicts and time constraints,<sup>46,76,120</sup> and 7 publications featured online FD.<sup>22,29,46,76,120,159,167</sup> Three studies reported positive outcomes.<sup>46,76,167</sup> One study reported that participants interacting with an in-person learning community<sup>120</sup> and in another an online community as part of an online course was perceived as distracting by participants.<sup>29</sup>

Session length varied, from single sessions lasting 60 to 90 minutes to intensive longitudinal programs lasting more than a year, and no ideal length or format could be discerned. Small samples and limited evaluation of interventions, particularly short-term evaluations and the use of self-ratings as the sole approach for assessing outcomes, were common limitations of FD literature in PGME settings.

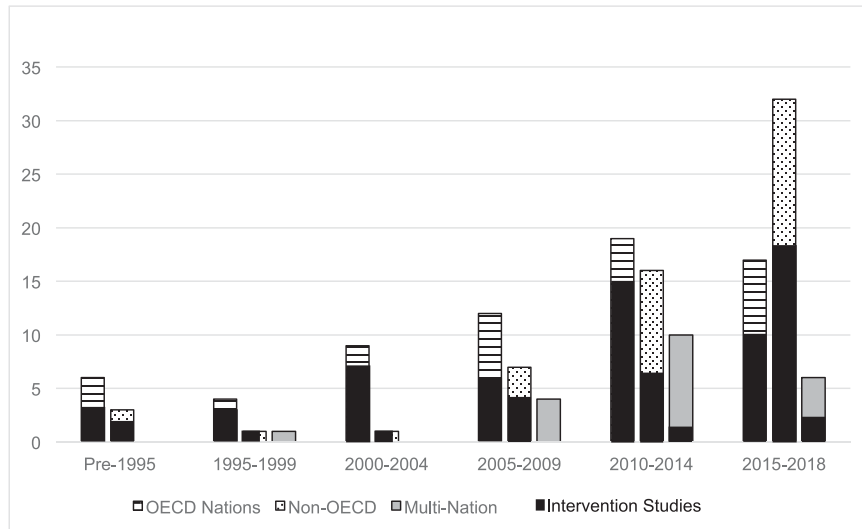
Thematic analysis of the non-intervention literature showed that adoption and adaptation of new and accepted approaches to medical education such as CBME and problem-based learning and enhancing their acceptance by established local medical teachers were major themes, along with discussions of barriers and facilitators of FD. Needs assessments showed teaching in small groups and teaching communication and counseling skills, assessing professionalism, assessment and providing feedback, and curriculum design and evaluation were common areas where medical teachers expressed a need for added professional development.

To highlight the contribution from developing economies, we used the OECD<sup>170</sup> categorization to determine the number of total FD publications and the number of intervention studies originating from OECD member nations, publications from other

**TABLE 1**  
Intervention Studies of Faculty Development (FD) Programs

Year	Prior to 1995	1995-1999	2000-2004	2005-2009	2010-2014	2015-2018	All
<b>Setting</b>	5 total 3 medical school 2 PGME setting	4 total 2 medical school 2 PGME setting	9 total 5 medical school 4 PGME setting	11 total 7 medical school 3 PGME setting	22 total 13 medical school 6 PGME setting 1 other	32 total 21 medical school 9 PGME setting 2 other	83 total 53 medical school 27 PGME setting 3 other
<b>International Collaboration</b>	1	3	4	7	18	13	46
<b>Audience</b>	2 UME 2 2 GME 2 1 both/not clear	UME 1 GME 2 1 both/not clear	UME 4 GME 4 1 both/not clear	UME 6 GME 4 1 both/not clear	UME 11 GME 7 4 both/not clear	UME 20 GME 9 3 both/not clear	UME 44 GME 28 11 both/not clear
<b>Intervention</b>	3 workshops 1 short course 1 longitudinal program 4 voluntary 1 not discussed	2 short courses 1 longitudinal program 2 voluntary 2 not discussed	3 workshops 2 short courses 2 longitudinal programs 4 voluntary 5 not discussed	2 workshops 6 short courses 2 longitudinal programs 1 other 1 mandatory 8 voluntary 1 other 1 not discussed	4 workshops 10 short courses 4 longitudinal programs 1 fellowship 3 other 2 mandatory 11 voluntary 8 not discussed	8 workshops 17 short courses 5 longitudinal programs 1 fellowship 4 other 1 mandatory 11 voluntary 21 not discussed	22 workshops 38 short courses 15 longitudinal programs 2 fellowships 8 other 4 mandatory 40 voluntary 1 other 38 not discussed
<b>Sample Size</b>	< 12 (1) 21-50 (4)	12-20 (1) 21-50 (1) 51-100 (1)	12-20 (2) 51-100 (5) 101-150 (1) More than 251 (1)	12-20 (2) 21-50 (5) 51-100 (2) 101-150 (1) More than 251 (1)	< 12 (1) 12-20 (2) 21-50 (7) 51-100 (4) 101-150 (2) 151-250 (5) More than 251 (1)	< 12 (1) 12-20 (7) 21-50 (10) 51-100 (9) 101-150 (1) 151-250 (1) More than 251 (4)	< 12 (3) 12-20 (14) 21-50 (27) 51-100 (21) 100-150 (5) 151-250 (6) More than 251 (7)
<b>Format</b>	2 single group, post 3 single group, pre-post	3 single, post	5 single, post 3 single, pre-post 1 quasi-experimental	10 single, pre-post 1 quasi-experimental	8 single, post 7 single, pre-post 3 quasi-experimental 4 other	16 single, post only 11 single, pre-post 2 quasi-experimental 4 other	44 single, post 24 single, pre-post 7 quasi-experimental 8 other
<b>Positive Impact of FD (Objective Versus Self-Report)</b>	2 yes 3 self-report only	3 self-report only 1 not discussed	3 yes 1 mixed effect 5 self-report only	5 yes 1 no effect 5 self-report only	5 yes 1 mixed effect 13 self-report only 3 not discussed	8 yes 1 mixed effect 1 no effect 17 self-report only 5 not discussed	23 yes 3 mixed effect 2 no effect 46 self-report only 9 not discussed





**FIGURE**  
Publications by OECD Nations, Non-OECD Nations and Multi-Nation Collaborations in 5-Year Segments

Legend: Black blocks denote interventions studies as a subset of all studies for each national/international grouping.

Pre-1995 9 studies overall; 6 (3 IS) from OECD nations, 3 (2 IS) from non-OECD nations

1995-1999: 6 studies overall; 4 (3 IS) from OECD nations; 1 IS from a non-OECD nation; 1 multination collaboration.

2000-2004: 10 studies; 9 (7 IS) from OECD nations, 1 IS from a non-OECD nation, 40% growth over 1995-1999.

2005-2009: 23 studies; 12 (7 IS) from OECD nations, 7 (4 IS) from non-OECD nations, 4 multination collaborations; 57% growth over 2000-2004.

2010-2014: 45 studies; 19 (15 IS) from OECD nations, 16 (6 IS) from non-OECD nations, 10 (1 IS) multination collaborations; 49% growth over 2010-2014.

2015-2018: 55 studies; 17 (10 IS) from OECD nations, 32 (18 IS) from non-OECD nations, 6 (2 IS) multination collaborations.

nations, and those resulting from international collaborations. The results (FIGURE) highlight the significant contribution of non-OECD countries to the literature, particularly for recent periods.

### Effectiveness and Cost-Effectiveness of International FD

Similar to earlier reviews,<sup>10-12</sup> the majority of intervention studies (89%, 74 of 83) reported outcomes using Kirkpatrick’s levels.<sup>16</sup> The bottom row of TABLE 1 shows the number of interventions with a positive effect on outcomes of interest, with 28 of 83 studies (34%) using external data such as objective tests of knowledge (Kirkpatrick Level 2a), learner feedback (Kirkpatrick Level 3), or learners’ improved performance or increases in publications (Kirkpatrick Level 4). For 23 studies of these studies (82%) this showed positive outcomes, for 3 studies (11%) the effect was mixed, and for 2 (7%) the intervention did not have the intended effect. Forty-six of 83 intervention studies (55%) used self-reported outcomes, with 42 of 46 (91%) reporting outcomes at Level 2 or higher on Kirkpatrick’s scale, and 4 studies (9%) reporting Level 1 outcomes only. All self-reported outcomes were positive. The 9 studies that did not report outcomes using Kirkpatrick’s scale reported self-assessed progression of competence on Harden and Crosby’s teacher roles,<sup>136</sup>

medical school attributes that facilitated FD program participation,<sup>109</sup> and development of a learning community.<sup>27</sup> The unconventional outcome metrics made it challenging to make comparative assessments of the impact of these FD interventions. Other than the finding that all mixed-effect studies were in the PGME sector and all negative studies were in UME sector, there was little difference in outcomes between UME and PGME settings.

We compared the assessment of outcomes using Kirkpatrick’s categorization to the results of 2 reviews of the literature where the majority of the studies originated from the United States and Canada.<sup>10,11</sup> The results, shown in TABLE 2, suggest that the international FD literature is still evolving, with a higher number of studies reporting outcomes at levels 1 and 2 of Kirkpatrick’s categorization, and relatively fewer studies addressing transfer to the workplace and impact on learners or organizational practice. TABLE 2 highlights a progression of the FD literature to a higher proportion of levels 3 and 4 outcomes when comparing the 2016 review<sup>11</sup> with the review from 2006.<sup>10</sup>

One aim of this review was to examine the cost-effectiveness of FD interventions as a critical consideration in settings that often are resource-constrained. While some articles made mention that their interventions were “cost-effective,” only 3 studies reported

TABLE 2

Comparison of 2006 and 2016 Predominantly US/Canadian Reviews and International FD Intervention Literature on Study Design and Outcomes

Studies	2006 BEME 8 Review (N = 53), No. (%)	2016 BEME 40 Review (N = 111), No. (%)	2018 International FD Review (N = 83), No. (%)
Intervention			
Workshop	23 (43)	32 (29) <sup>a</sup>	20 (24) <sup>b</sup>
Short course	6 (11)	16 (14)	38 (46)
Seminar series	10 (19)	10 (9)	2 (2)
Longitudinal program	5 (10)	40 (36)	15 (18)
Fellowship	N/A	N/A	2 (2)
Other	9 (17)	14 (13)	8 (10)
Study design			
Single group	45 (85)	83 (75)	68 (82)
Post only	N/A	N/A	44 (53)
Pre-post	N/A	N/A	24 (29)
Observational	0 (0)	1 (1)	1 (1)
Non-equivalent control group	2 (4)	16 (14)	6 (7)
Randomized control trial	6 (11)	4 (4)	1 (1)
Qualitative	0 (0)	7 (6)	4 (5)
Mixed methods	11 (21)	25 (23)	3 (4)
Level of outcomes (Kirkpatrick) <sup>11</sup>			
Level 1–Reaction	39 (74)	56 (50)	46 (55) <sup>c</sup>
Level 2a–Attitudes	19 (36)	51 (46)	50 (60)
Level 2b–Knowledge & Skills	31 (58)	60 (54)	35 (42)
Level 3a–Behavior (Self-Reported)	13 (25)	72 (65)	20 (24)
Level 3b–Behavior (Observed)	25 (47)	39 (35)	11 (13)
Level 4a–Results (Organizational Practices)	7 (13)	26 (23)	13 (16)
Level 4b–Results (Impact on Learners)	3 (6)	5 (5)	4 (5)

<sup>a</sup> 1 intervention was coded as 2 intervention types: a short course and seminar series.

<sup>b</sup> 2 studies used multiple interventions.

<sup>c</sup> 74 of 83 intervention studies collected data using Kirkpatrick's categorization with 4 studies collecting only Level 1 data.

Abbreviations: FD, faculty development; N/A, not applicable.

actual cost data, and none reported sufficient information to establish a budget to replicate the intervention. Some courses clearly were costly, requiring faculty to travel internationally, either as lecturers or as participants, frequently for multiple workshops and seminars over time, raising questions of a return on investment by comparing the value of the outcomes relative to the costs (Kirkpatrick Level 5),<sup>16</sup> and resulting in concerns about the sustainability of these interventions. Limitations of the primary literature include the lack of data on cost and cost-effectiveness, which makes decisions regarding the feasibility of replication more challenging, and a dearth of multicenter studies, larger samples, and longer follow-up to assess the impact of FD programs.

## A Faculty Development “Blueprint”

A number of studies make explicit or implicit reference to the 12 teacher roles by Harden and Crosby. We combined an expanded version with 18 roles (BOX 2) and the activities defined by Ullian and Stritter<sup>17</sup> to create an FD blueprint (TABLE 3) to offer

suggestions for how to advance medical teacher competence.

The FD blueprint encompasses self-guided and small group activities, and is intended to complement a formal FD program for individual medical teachers. For departments and institutions, the blueprint can contribute to a programmatic focus on FD by encouraging these activities and providing release time for faculty. Harden and Crosby's faculty roles have already been used in needs assessments, learning portfolios, and assessment tools.<sup>111,114,136</sup> The 2025 teacher roles offer contemporary solutions useful in resource-constrained settings, including teachers serving as curators of existing online education resources, rather than spending time and funds to develop local teaching materials.

## Discussion

The growth in publications over the recent decade, and the focus on learner reactions and attitude change (Kirkpatrick Levels 1 and 2) contrasted with transfer to practice and impact on learners (Levels 3 and 4), suggest international FD is an emerging field. Focal

**TABLE 3**  
Self-Guided Blueprint for Improving Performance in Educational Faculty Roles

		Faculty Experience Level	
		Novice Faculty	Experienced Educators
<b>(1) Information provider</b>			
(i) Lecture in classroom setting	Observe teachers who learners see as the most effective, and seek to understand their approach.	Continue to refine your teaching approach based on feedback from learners and trusted colleagues.	Serve as an evaluator and feedback provider to improve the classroom and clinical teaching skills of colleagues.
(ii) Teach in clinical or practical settings			
<b>(2) Role model</b>			
(iii) On-the-job role model	Review the literature and observe effective role models to recognize their habits and practices.	Apply and continuously practice and seek effective ways to serve as a role model in clinical and didactic contexts. Seek feedback on your performance.	
(iv) Role model in the teaching setting			
(v) Simpson 2025 physician roles			
<b>(3) Facilitator</b>			
(vi) Mentor, personal adviser, or tutor	Understand the principles of tutoring, advising, and mentoring. Observe effective mentors and tutors in action and note their techniques.	Practice these roles in daily interactions; seek guidance from effective tutors and mentors.	Continue to refine your practice, with scanning of the relevant literature and feedback as available. Mentor “novice mentors.”
(vii) Learning facilitator	Review the literature to understand the role of learning facilitator.	Based on your understanding, practice this new role in your daily interactions in clinical and didactic settings. Scan the literature for new information and guidance.	
(viii) Simpson: Learner-Centered Navigator and Professional Coach	Use the literature to enhance your understanding of new physician roles.	Recognize the roles and practice them in daily interactions in the clinical setting. Scan the current literature for new information and guidance.	
<b>(4) Assessor</b>			
(ix) Planning or participating in formal examinations of students	Seek opportunities to join an assessment group as a junior member, with mentoring from an experienced colleague.	Refine your performance as a member of groups engaged in formative and summative assessment.	Lead and guide efforts to develop and conduct formative and summative assessments and tests.
(x) Curriculum evaluator	Familiarize yourself with the literature on curriculum evaluation.	Volunteer for curriculum review roles and continue to develop your practice.	Serve as lead and a mentor on curriculum evaluation projects.
(xi) Simpson: Diagnostic Assessor: use big data to identify individual/group performance gaps and individualize training	Use the literature to recognize and understand this new physician role.	Based on your understanding, practice this new role in your daily interactions in the clinical setting. Scan the literature for new information and guidance.	
<b>(5) Planner</b>			
(xii) Curriculum planner	Familiarize yourself with the literature on curriculum planning and associated changes in teaching and practice.	Volunteer for curriculum planning roles and continue to develop your practice with the help of a mentor.	Serve as a lead and a mentor on curriculum planning projects.
(xiii) Course organizer	Work with a mentor to organize a course. Seek feedback from learners and others.	Practice and refine your approach to organizing educational courses.	Mentor novice and midlevel faculty who organize courses.



**TABLE 3**  
Self-Guided Blueprint for Improving Performance in Educational Faculty Roles (continued)

	Faculty Experience Level	
	Novice Faculty	Experienced Educators
(xiv) Simpson: Technology Adopter (xv) Learning Environmental Designer, Architect, and Implementer	Use the literature to recognize and understand this new physician role.	Based on your understanding, practice this new role in your daily interactions in the clinical setting. Scan the literature for new information and guidance.
<b>(6) Resource developer</b>		
(xvi) Produce study guides	Create a personal library of effective study guides.	Develop a list of attributes for effective study guides, and develop a study guide.
(xvii) Developing learning resource materials (paper, electronic, online)	Explore where to find existing content and how to evaluate validity and suitability.	Practice content evaluation, seeking feedback from learners and colleagues.
(xviii) Simpson: Content Curator		Create institutional or published guidance documents in creating study guides.  Guide institutional efforts to curate educational content.

Roles are based on Harden and Crosby<sup>17</sup> and Simpson et al<sup>18</sup>; activities are based on Ullian and Stritter.<sup>16</sup>

areas, FD interventions, research methods, and practices echo those from the United States and Canada, and to some degree, other nations with well-developed medical education systems such as the United Kingdom and Germany. Recurrent themes in the literature included cross-national outreach and the need to adjust medical education and FD to innovations originating from North America such as CBME. Similar to the findings of a 2016 review,<sup>10</sup> several studies highlighted the power and benefits of social networks and learning communities. One study found faculty members' social network centrality had a profound impact on trainees' ratings of their adoption of a new structured approach to feedback, while an FD intervention did not have an impact.<sup>113</sup> Another study identified communities of practice at horizontal (colleagues) and vertical (organizational expectations) levels, noting that colleague networks supported teacher identities, while institutional networks, when they devalued teaching, created conflicts for educators.<sup>164</sup>

While institutional support was frequently mentioned as a factor in the effectiveness of FD, reports of institutional support and comprehensive programming around FD were rare, consistent with the findings of a 2016 systematic review.<sup>10</sup> One notable exception was an educational reform at a German medical school that combined comprehensive FD and quality improvement programming and certification using the European quality management standards.<sup>67</sup>

More recent studies are less likely to explicitly mention Kirkpatrick Level 1 data. We suspect this may be due to feedback from reviewers and editors creating a perception that Level 1 data is of lower value, as high-quality reviews<sup>10–12</sup> have excluded articles that solely reported of Level 1 data. While Level 1 data alone are insufficient to assess FD effectiveness, faculty reactions to training are a necessary element of evaluation, as lack of acceptance by faculty likely is a significant barrier to the attainment of any higher-level outcomes.

This review has limitations, including reliance on published articles, which may result in an overstatement of FD effectiveness, as studies with negative outcomes are less likely to be published. We also suspect publication bias, with articles with international collaborators more likely to be accepted. Including only English-language articles may have omitted unique content in international FD beyond US and Canadian priorities. Finally, we did not conduct a consultation on the findings with FD stakeholders, an optional step for Arksey and O'Malley,<sup>14</sup> and a required step in the enhanced methods by Levac and colleagues.<sup>15</sup>

Future research on FD should address the lack of cost and cost effectiveness data, as effective low-cost interventions are preferable in any setting. Equally important, future research should assess broader FD programs made up of multiple interventions, as a limitation of the current literature is the focus on a single workshop or course, which does not consider the many ways medical teachers develop relevant skills. The typology by Ullian and Stritter<sup>17</sup> includes informal activities that are important to the development of proficient, vibrant educators, including self-directed activities, self-assessment, learning from high-performing teachers, seeking feedback and small group discussions to review current education literature, and its implications for practice in small groups. While important to individual professional development and an organizational FD program, these approaches are difficult to objectively assess with current accepted formats for scientific study. Future studies could use methods to assess the collective effect of these broad programs, which will require the application of rigorous qualitative approaches. Finally, future studies should examine publications in languages other than English and explore the grey literature<sup>172</sup> to highlight additional approaches and impacts of international FD, including replication of interventions, collaborations, and informal consultations that add value and contribute to global impact.

The global mobility of the educator workforce and the mobility of their “output” (the learners who graduate from their programs) ultimately may require added validation of international FD, similar to what has been proposed in the clinically focused continuing professional development realm.<sup>173</sup> This will require added research from which to create evidence-based recommendations.

## Conclusion

A scoping review of the international FD literature identified a sizable number of studies, particularly from the last decade. Together with a focus on outcomes lower on Kirkpatrick’s categorization of results, this suggests a field that is still evolving. To further enhance international FD, the focus should be on high-quality programs to assess common needs such as small group teaching, assessing professionalism, providing feedback, and curriculum design and evaluation, and on creating and evaluating broader organizational FD approaches, including assessing their cost-effectiveness.

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