$\label{thm:continuous} \textbf{Table S1} \ \textbf{Summary of included studies}.$

Authors (year)	Country and institution	Type of Program or Intervention	Participants (n)	Faculty, roles covered by the program	Study design	Outcomes		Oı	utcon	ne I	Level		Study quality. MERSQI
		and duration		(The teacher as :)			1	2A	2B	3	4A	4B	score out of 18
Stein et al. (2012)	USA, Washingt on State University	A 1-day teaching- methods course	pharmacy and nursing faculty members	Information provider and coach	One group, Pretest- posttest	Significant improvement in 7 of 10 domains of teaching effectiveness; self-reported changes in participants' perceptions of their teaching effectiveness.		V	√ 				13
Zagar et al. (2019)	USA, University of Louisiana at Monroe	A year-long book club	48 pharmacy faculty members	Information provider and coach-Facilitator of learning and mentor-Assessor and diagnostician - Scholar and researcher	One group, Pretest- posttest	Increased ability to describe the characteristics of a student-centered approach to teaching, the components of the pharmacy education system, the components of assessment in	1	V	√ 	1			9.5

						pharmacy education and the roles and responsibilitie s of a student mentor.					
Fleming et al. (2015)	USA, Vanderbilt University School of Medicine	A facilitated peer mentoring program, monthly for 1.5 hours for 2 years	junior faculty in the Department of Pediatrics	Professional- Scholar and researcher	Cohort with a survey at two time points	Significant improvement in participants' self-reported knowledge, skills, and attitudes (KSA) in the domains of professional development and scholarship, including the ability to write career goals and align activities with those goals.		√ ·	V		10.5
Grimes et al. (2000)	USA, Berlex Foundation	A 6-day faculty development course	65 faculty physicians	Scholar and researcher	One group, Pretest- posttest	Increases in participants' cognitive knowledge of research			V		10
Johnsto ne-	USA, forty-	A four-week online	5 dental	Information provider and	One group,	Significant increases in	1	V			11.5

Dodge et al. (2014)	seven U.S. dental hygiene programs	faculty development course	hygiene faculty members	coach- Facilitator of learning and mentor	Pretest-posttest	participants' perceptions of the importance of four practices: activities promoting relevant, lifelong learning; faculty communicatio n fostering a sense of community; encouraging students' self- introduction; and encouraging productive dialogue and respecting diverse opinions.						
Jackevi cius et al. (2014)	USA, Western University of Health Sciences	A four-year formal mentorship program	51 pharmacy faculty mentor- protégé′ pairs	Scholar and researcher	One group, Pretest- posttest	Non- significant improvements in the protégés' number of grant submissions,	V		√		11	

Batsche & Monoso n (1993)	USA, Illinois State University	A 17-month four-phase multidiscipli nary faculty development	10 faculty members in the areas of social services, human performance, psychology, nutrition, audiology, and nursing.	Information provider and coach-Curriculum developer and implementer-Scholar and researcher	Non- equival ent control group, Pretest- posttest	retention rates, or success in promotion/ten ure; significant increases in the total number of peer-reviewed publications for junior faculty protégés. Significant increases in faculty knowledge in the field of aging; significant gains in students' knowledge in gerontological concepts; 10		√	V	√	√	13.5
			and nursing.			faculty members developed 50 instructional						
						Units.						
Taylor	USA,	A year-long	21	Professional	One	More highly	√					11.5
&	St. Louis	Pharmacy	new		group,	engaged and						

Berry	College of	Faculty	pharmacy		Pretest-	productive				
(2008)	Pharmacy	Academy	faculty		posttest	faculty				
			members			members who				
						were more				
						likely to				
						remain long				
						term within				
						the college.				
Johanss	Sweden,	14-hour	48	Information	Rando	Positive				12
on et al.	Uppsala	Stanford	physicians	provider and	mised	changes in				
(2012)	University	faculty	from	coach	control	teaching				
	Hospital	development	different		led	behaviors as				
		programme	departments		study,	assessed by				
		over a			Pretest-	the				
		7-week			posttest	participants'				
		period				self-ratings.				
Windish	USA,	A 10-month	138	Curriculum	Non-	Improvement				14
et al.	Johns	longitudinal	faculty and	developer	equival	in self-				
(2007)	Hopkins	mentored	fellows	and	ent	assessed				
	Bayview	faculty	from Johns	implementer	control	curricular				
	Medical	development	Hopkins and		group,	development,				
	Center	program	other		Pretest-	implementatio				
			institutions		posttest	n, and				
			and			evaluation				
			63 matched			skills and				
			nonparticipa			enjoyment of				
			nts			participants.	,	<u> </u>		
Lee et	USA,	A 4-month	58	Information	One	Significant	 			11.5
al.	University	Web-based	pharmacy	provider and	group,	increases in				
(2012)	of	train-the-	faculty	coach	Pretest-	instructors'				
	California	trainer	trainers		posttest	self-reported				
		program				ability to				
						teach				

						pharmacogeno mics to pharmacy students					
Green (2005)	USA, seven podiatric medical colleges	A 2-day workshop	academic podiatric physicians	Information provider and coach-Curriculum developer and implementer-Scholar and researcher	One group, Pretest- posttest, delayed post- test	Improvement in participants' self-reported EBM practice and EBM teaching skills and, within 3 months, fully or partially implemented many changes in their clinical practice, podiatric medical teaching, and administrative duties.	√ ·	V	1	V	12.5
Smith et al. (2018)	USA, Long Island Jewish Forest Hills	Three OSTE simulation sessions lasting about 2.5 h over a 2-month period	29 attending physicians	Information provider and coach	One group, Pretest- posttest, delayed post- test	Non- significant increases in 'intern' OSTE ratings of attendings and attending self- assessment ratings and		V			13

						resident						
						evaluations of						
C' 1	TICA	A 1	0.4	T. C:	0	attendings.	1		1			10
Gjerde	USA,	A year-long	84	Information	One	Significant			√			10
et al.	University	series of five	clinical	provider and	group,	improvement						
(2004)	of	weekend	teachers in	coach-	Pretest-	in						
	Wisconsin	workshops	family	Manager and	posttest	participants'						
		over 6 years	medicine,	leader-		self-reported						
		(A six-year	general	Scholar and		EBM skills,						
		faculty	pediatrics,	researcher		teaching						
		development	and general			skills,						
		fellowship	internal			technology/						
		program)	medicine			informatics						
						skills and						
						leadership/adv						
						ocacy skills.						
Sabato	USA,	The two-year	35	Information	4	Significant						9.5
et al.	Rutgers	program with	dental	provider and	cohort,	increases in						
(2017)	School of	weekly	faculty	coach-	Pretest-	participants'						
	Dental	meetings	members	Manager and	posttest	perception of						
	Medicine			leader		preparedness						
						in						
						administrative						
						, clinical, and						
						educational						
						competencies.						
LeBlanc	USA,	A 2-part	22	Information	One	Significant	1	V				9.5
et al.	Ohio	training	pharmacy	provider and	group,	increases in						
(2007)	State	seminar	instructors	coach-	Pretest-	level of						
, ,	University	includes		Facilitator of	posttest	comfort in						
	College of	42 credit		learning and		their ability to						
	Pharmacy	hours of		mentor		facilitate						
		online				online case-						

		didactic				based					
		course work				discussions.	,	-	,		
Manwell	Six	Two 2-day	153	Information	One	Significant					12.5
et al.	universities	skills-based	faculty from	provider and	group,	improvements					
(2006)	throughout	courses held	multiple	coach-	Pretest-	in the					
	the United States	6 months	disciplines	Scholar and	posttest,	teaching,					
	States	apart	at 6	researcher	delayed	clinical, and					
			locations		post- test	research					
					iesi	activities of					
						faculty;					
						increases in					
						number of					
						professional					
						activities in					
						the alcohol					
						area;					
						significant					
						improvements					
						in screening,					
						brief					
						intervention,					
						and					
						motivational					
						interviewing					
						skills.					
Koffel	USA,	The two-day	25	Information	One	Significant					10.5
& Reidt	University	interprofessi	faculty	provider and	group,	improvements					
(2015)	of	onal	from the	coach-	Pretest-	in faculty					
	Minnesota	evidence-	schools and	Scholar and	posttest,	members'					
		based	colleges of	researcher	delayed	self-reported					
		practice	Medicine,		post-	confidence					
		workshop	Nursing,		test	and ability to					
		1	Pharmacy,			practice and					

			Dentistry, and Veterinary Medicine and the Center for Allied Health Programs			teach core EBP skills.						
Sturpe et al. (2013)	USA, University of Maryland School of Pharmacy	A two- station OSTE	14 faculty/resid ents	Information provider and coach	One group, Pretest- posttest	Most participants scored well on the standardized checklist items; all participants agreed the debriefing session was useful.	٧		V			11
Brown et al. (2016)	Canada, University of Calgary	The four three-hour orientations to wellness workshop	47 new faculty of medicine members	Scholar and researcher- Professional	One group, Pretest- posttest	Significant increases in post workshop self-efficacy scores compared to pre workshop ratings; most participants expressed intention to change their	٧	V	V	٧		9.5

								1	T		
						behavior as a					
						result of					
						participating					
						in the					
						workshop.			L.	L.,	
Roberts	USA,	A series of	42	Information	2	Significant	 				12
&	Institutions	three 2-day	academicians	provider and	cohort,	improvement					
Devries	with	"Train the	and	coach-	Pretest-	in					
(2004)	community	Trainer"	practitioners	Facilitator of	posttest	participants'					
	-based	workshops		learning and		self-reported					
	teaching	was spread		mentor-		knowledge,					
	programs	over 12		Assessor and		skills, and					
		months		diagnostician		attitudes to					
				 Manager 		recruit and					
				and leader		retain					
						community-					
						based					
						preceptors and					
						increases in					
						multiple areas					
						of					
						competence.					
Ebrahi	Iran,	A series of	219	Information	Equiva	Significant	 				12
mi &	Shiraz	faculty	basic	provider and	lent	positive effect					
Kojuri	University	empowermen	science and	coach-	control	on medical					
(2012)	of	t	clinical	Facilitator of	group,	teachers'					
	Medical	workshops as	science	learning and	Pretest-	competencies;					
	Sciences	one month	teachers	mentor-	posttest,	significant					
		medical		Assessor and	delayed	improvements					
		education		diagnostician	post-	in the					
		programs,		- Manager	test	participants'					
		four times		and leader		teaching					
		per academic				abilities.					

		year										
Shealy	USA,	The two-hour	38	Information	One	Significant						12.5
et al.	University	training and	pharmacy	provider and	group,	improvement						
(2019)	of South	one-hour	faculty	coach-	Pretest-	in						
	Carolina	active-	members	Professional	posttest,	participants'						
	College of	learning	and 51		delayed	self-reported						
	Pharmacy	sessions of	preceptors		post-	self-awareness						
		Birkman			test	and self-						
		Method				confidence						
		Faculty				related to						
		and				coaching;						
		Preceptor				significant						
		Development				changes in						
		Intervention				self-						
						perception in						
						usual						
						communicatio						
						n style and						
						behavior style						
						under stress.						
Willett	USA,	The 20-min	53	Information	One	Improvement						11.5
(2006)	UMDNJ-	faculty	academic	provider and	group,	in						
	Robert	development	and	coach	Pretest-	participants'						
	Wood	audiotape	community		posttest,	teaching						
	Johnson		preceptors		delayed post-	technique;						
	Medical				test	change in						
	School				icsi	shadowing						
						behavior of						
						preceptors.	<u> </u>	,	,	<u> </u>		
Yanama	USA,	6-month-	8	Manager and	One	Significant						13.5
dala et	Duke	long quality	faculty	leader	group,	changes in						
al.	University	improvement	members		Pretest-	participants'						
(2016)	School of	(QI) course	from the		posttest	QI knowledge						

	Medicine		Department			and self-				
			of			assessed				
			Medicine			confidence on				
						key QI				
						concepts.				
Johanss	Sweden,	Five series of	40	Information	One	Significant	 	 		9.5
on et al.	Uppsala	7-week	physicians	provider and	group,	increases in				
(2009)	University	faculty	from	coach	Pretest-	participants'				
	Hospital	development	different		posttest	teaching				
	_	seminar	departments			skills; positive				
						changes in				
						their teaching				
						behaviours.				
Lye et	USA,	Seven 1-hour	101	Information	Non-	Significant				11.5
al.	Medical	conferences	pediatric	provider and	equival	improvement				
(1998)	College of	(A Case-	faculty	coach-	ent	in both				
	Wisconsin	Oriented	attending	Facilitator of	control	feedback and				
		Faculty		learning and	group,	overall				
		Development		mentor	Pretest-	teaching				
		Program)			posttest	effectiveness				
						of faculty				
						attending				
						clinical				
						teaching				
						rounds.				
Lang et	USA,	Monthly 1-	22	Information	One	No significant	 			10.5
al.	University	hour	internal	provider and	group,	differences in				
(2012)	of	interactive	medicine, or	coach-	Pretest-	quantity or				
	Rochester	workshop on	combined	Professional	posttest,	applicability				
	School of	collaborative	internal		qualitat ive	of teaching;				
	Medicine	development	medicine		content	significant				
	and	of teaching	and		analysis	improvement				
	Dentistry	scripts	pediatrics			in faculty self-				

						efficacy with				
						teaching.				
Tenzin	Bhutan,	A 2 hours	16	Assessor and	Quasi-	Effective		√		12.5
et al.	Khesar	long	intern	diagnostician	experi	changes in the		,		
(2017)	Gyalpo	workshop on	medical	C	mental	learning and				
	University	construction	doctors		study	performances				
	of	of MCQs			•	of medical				
	Medical					educators in				
	Sciences					the				
	of Bhutan					development				
						of MCQs.				
McAndr	USA,	Three-station	12	Information	2	Significant		$\sqrt{}$		12.5
ew et al.	New York	OSTE	faculty	provider and	cohort,	changes in				
(2012)	University		members	coach	Pretest-	faculty				
	College of				posttest	participants'				
	Dentistry					OSTE scores				
						and ratings;				
						significant				
						improvements				
						in nine of the				
						fifteen				
						teaching				
						domains.		,		
Wong	Russia,	Four	14	Information	One	Significant		$\sqrt{}$		10
&	Kazan	seminars	medical	provider and	group,	improvements				
Agishev	State	based on the	teachers	coach	Pretest-	in the ratings				
a (2004)	Medical	7 categories			posttest,	of global				
	University	of the			delayed post-	teaching				
		Stanford			test	performance				
		Faculty			tost	and specific				
		Development				teaching				
		Program				behaviors at				
<u> </u>		model				both measured				

						times.				
Wong et	Japan,	Two	19	Information	One	Significant				10
al.	University	complete	nurse and	provider and	group,	improvements				
(2017)	of Tokyo	series of the	physician	coach	Pretest-	in				
	Graduate	seven 2-hour	educators		posttest,	participants'				
	School of	seminars was			delayed	self-reported				
	Medicine	spread over 4			post-	teaching				
		months			test	abilities at				
						both the				
						posttest and at				
						1 year.				
Paige et	USA,	A train the		Information	One	Significant	 			9.5
al.	Associatio	trainer		provider and	group,	improvements				
(2015)	n for	workshop		coach	Pretest-	in				
	Surgical	with 2			posttest,	participants'				
	Education	separate 90-			delayed	self-efficacy				
		minutes			post- test	in objectives-				
		sessions			test	driven aspects				
						of debriefing.	,	,	ļ.,	
Sullivan	USA,	Two-week	156	Information	4	Increases in:	 		 √	13.5
et al.	Harvard	program	physician	provider and	cohort,	time spent in				
(2006)	Medical	offered	and nurse	coach-	Pretest-	palliative				
	School	annually	educators	Facilitator of	posttest,	care practice,				
		(2000 to	from North	learning and	delayed	use of learner-				
		2003)	America	mentor-	post- test	centered				
		with 2 on-	and Europe	Professional	iest	teaching				
		site sessions				approaches				
		and 6-month				and palliative				
		distance-				care topics				
		learning				taught;				
		period				improvements				
						in				
						participants'				

						self-reported clinical practices in psychosocial dimensions of care; major improvements in confidence, commitment to palliative care, and enthusiasm for teaching.						
Sigalet et al. (2016)	Qatar, Sidra Medical and Research Center	A two day interprofessi onal simulation based faculty development course	41 clinicians	Information provider and coach- Facilitator of learning and mentor- Professional	One group, Pretest- posttest	Significant improvements in aggregate MCQ scores from pre- to post-test; non- significant improvements in participants' ability to apply the theory of feedback.			V			12
Rao et al. (2017)	USA, Partners HealthCare	A 6-day interdisciplin ary, team- based quality improvement leadership	13 cohorts consisting of a total of 239 teams and 516	Manager and leader	13 cohorts, Pretest- posttest, delayed post- test	Improvements in participants' self-reported understanding of QI	1	V	V	V	√	11

		training program over a period of 4 months	physicians, registered nurses, other clinicians and administrato rs			concepts.						
Roos et al. (2014)	Germany, Heidelberg Medical Faculty	A 5-day teaching education program	56 medical educators	Information provider and coach-Facilitator of learning and mentor-Assessor and diagnostician - Manager and leader-Role model-Professional	One group, Pretest- posttest, delayed post- test	Significant increases in participants' knowledge; improvements in participants' teaching performance ratings, transfer of learning into teaching performance by the participants.	V	V	√	V	V	12.5
Wong & Agishev a (2007)	Russia, Kazan State Medical University	Five small- group seminars based on the 7 categories of the Stanford Faculty Development Program	48 faculty members from 17 different academic departments	Information provider and coach	One group, Pretest- posttest, delayed post- test	Significant improvements in the ratings of global teaching performance and specific teaching behaviors at both measured	~		V	√ 		10.5

		model				times.				
Liao et	Taiwan,	A two-hour	49	Facilitator of	One	Significant		 		11.5
al.	Chang	mini-CEX	trainers of	learning and	group,	improvements				
(2013)	Gung	workshop	different	mentor-	Pretest-	in				
	University		subspecialti	Assessor and	posttest	participants'				
			es	diagnostician		cognitive				
						knowledge;				
						enhancement				
						of giving				
						feedback to				
						residents.				
Arnett	USA,	A five-hour	16	Information	One	Increases in				12
et al.	University	workshop	dental	provider and	group,	dental hygiene				
(2017)	of		hygiene	coach-	Pretest-	faculty				
	Michigan		faculty	Facilitator of	posttest,	members'				
	School of		members	learning and	delayed	appreciation				
	Dentistry			mentor	post-	of the value of				
	-				test	motivational				
						interviewing				
						and				
						confidence in				
						teaching it to				
						students				
						immediately				
						after the				
						workshop.				
Register	USA,	A five-hour	51	Role model-	Mixed	Better				10
et al.	University	standard and	faculty from	Professional	metho	retention of				
(2019)	of	intensive	multiple		dology	positive				
	Alabama	interprofessi	schools		, Non-	interprofessio				
	at	onal faculty			equival	nal				
	Birmingh	development			ent	perceptions in				
	am	course in			control	the intensive				

		simulation			group,	training				
					Pretest-	group; gradual				
					posttest,	decline in				
					delayed	positive				
					post-	interprofessio				
					test	nal				
						perceptions in				
						all groups.				
Baral et	Nepal,	2 two and a	31	Information	One	Improvement	 			10
al.	B.P.	half day	faculty	provider and	group,	in				
(2015)	Koirala	teacher-	members	coach-	Pretest-	participants'				
	Institute	training	from the	Facilitator of	posttest	knowledge on				
	of Health	workshops	departments	learning and		different				
	Sciences		of basic,	mentor-		aspects of				
			clinical and	Assessor and		medical				
			allied	diagnostician		education.				
			sciences							
John et	India,	Eight-hour	30	Scholar and	Quasi-	Significant	 			9.5
al.	Medical	training	entry level	researcher	experi	improvements				
(2016)	College in	curriculum in	medical		mental	in				
	Kochi	teaching	teachers		study	participants'				
		methodology			with	scores for				
					pre-	knowledge,				
					test	motivation to				
					post-	teach and				
					test	practice.				
					design	_				
Mokkap	India,	A two day	29	Information	One	Significant				11
ati &	Apollo	teacher	faculty	provider and	group,	improvements				
Mada	Institute	training	members	coach-	Pretest-	in knowledge				
(2018)	of	workshop		Facilitator of	posttest	of the				
	Medical	-		learning and		participants				
	Sciences			mentor-		after the				

	and			Assessor and		workshop.						
	Research			diagnostician			ļ ,	,	,			
Popovic	USA,	Weekly 60–	11	Information	One	Significant						10
h et al.	University	90-minute	pharmacy	provider and	group,	self-perceived						
(2006)	of Illinois	conversation	faculty	coach-	Pretest-	improvement						
	College of	forums	members	Facilitator of	posttest	from pretest to						
	Pharmacy			learning and		posttest.						
				mentor-								
				Assessor and								
				diagnostician								
				-								
				Professional			<u> </u>					
Griffeth	USA, The	60 minutes in	33	Assessor and	One	Statistically						11.5
&	University	total, divided	faculty	diagnostician	group,	significant						
Wieder	of South	over two	members		Pretest-	differences in						
man	Carolina	training			posttest	both the self-						
(2018)	School of	sessions				rated						
	Medicine	embedded				confidence of						
	Greenville	within the				faculty						
		monthly				members in						
		hour-long				their ability to						
		faculty				accurately rate						
		meeting.				student						
						performance						
						and in the						
						actual clinical						
						assessment						
						ratings of						
						students after						
						the						
						intervention.	L.	<u> </u>	ļ.,	ļ.,		
Sánchez	Mexico,	A monthly	22	Assessor and	Quasi-	Improvement						11
-	UNAM	one-hour	participants,	diagnostician	experi	in self-						

Mendiol a et al. (2015)	Faculty of Medicine in Mexico City.	medical education Journal Club	a mix of clinicians, educators, psychologist s and one sociologist	- Scholar and researcher	mental study with pre- test post- test design	reported competencies in medical education literature critical appraisal and behaviors related to the use of evidence in educational practice.						
Haines & Popovic h (2014)	USA, the Palm Beach Atlantic University Gregory School of Pharmacy	A nontraditiona l external faculty mentor program (monthly sessions and 2 annual summer retreats)	junior/mid- career clinical faculty members	Information provider and coach-Facilitator of learning and mentor-Scholar and researcher-Professional	One group, Pretest- posttest	Improvements in meeting faculty needs related to professional development, individual feedback, career development.	√ 	V	V			9
Sherbin o et al. (2006)	Canada, University of Toronto	A novel one- day evidence- based, skills- oriented faculty development course	31 individuals from a variety of academic and community EDs	Information provider and coach	Mixed metho dology , One group, Pretest- posttest, delayed post-	Improvements in participants' knowledge about ED- specific teaching strategies, and this	√ 	V	V	√		13.5

									1	ı	1	1 1	
					test	improvement							
						is maintained							
						at one month.	,	,		,			
Mitcha	USA,	10	179	Information	10	Changes in							8.5
m et al.	Medical	occupational	occupationa	provider and	cohorts	participants'							
(2002)	University	therapy	l therapy	coach-	,	current							
	of South	faculty	faculty	Facilitator of	Pretest-	teaching							
	Carolina	development	participants	learning and	posttest	practices.							
		workshops		mentor-									
				Assessor and									
				diagnostician									
				 Scholar and 									
				researcher-									
				Professional									
Bigby	USA,	A learner-	87	Information	One	Changes in							12.5
&	Brigham	centered,	general	provider and	group,	participants'							
Barnes	and	largely	internal	coach	Pretest-	knowledge,							
(1993)	Women's	experiential	medicine		posttest	attitudes, and							
	Hospital	faculty	faculty from			confidence in							
		development	academic			clinical skills.							
		program in	institutions										
		substance											
		abuse											
		education											
Skeff et	USA,	One-month	29	Information	One	Significant							11.5
al.	Stanford	faculty	clinical	provider and	group,	changes in							
(1992)	University	development	faculty	coach-	Pretest-	participants'							
	School of	program	members	Facilitator of	posttest	teaching							
	Medicine	based on the		learning and		performance							
		7 categories		mentor-		and attitudes.							
		of the		Assessor and									
		Stanford		diagnostician									
		Faculty		- Manager									

		Development Program model		and leader								
Assemi et al. (2007)	USA, schools across the United States	A 2-day cultural competence train-the- trainer workshop	50 pharmacy educators	Information provider and coach	One group, Pretest- posttest, delayed post- test	Significant increases in faculty members' perceived and documented ability to teach cultural competence.	V	V	V	1		10.5
Quirk et al. (1998)	USA, Different regions of United States	Five national series of faculty development workshops	community health center preceptors from a variety of disciplines	Information provider and coach- Assessor and diagnostician	One group, Pretest- posttest, delayed post- test	Significant increases in the teaching knowledge and skills and use of effective teaching behaviors.	√	V	V	√ 		12.5
Lye et al. (2003)	USA, Medical College of Wisconsin	A monthly faculty development program	7 experienced clinical educators	Information provider and coach	Non- equival ent control group, Pretest- posttest, delayed post- test	Significant increases in participants' use of 2 teaching methods (priming and feedback).			V	√		12
Baker et al. (2010)	Canada, University of	Five 1-day face-to-face sessions	32 participants, a mix of	Facilitator of learning and mentor-	One group, Pretest-	Significant improvements in the areas of		√	V			9

	Toronto	spread over three months (IPE faculty development program)	professions, including medicine, nursing, pharmacy, physical therapy, speech- language pathology and social work	Professional	posttest	knowledge, skills, community, and feelings of success and confidence about the principles of IPE and faculty development.						
Moore & Pinsky (2015)	USA, University of Pittsburgh	broad-based career development course sessions	critical care faculty and 1 non–critical care faculty	Curriculum developer and implementer- Facilitator of learning and mentor- Scholar and researcher- Professional- Manager and leader	One group, Pretest- posttest, delayed post- test	General increase in comfort scores between precourse and postcourse surveys and the maintenance of these scores for set of administrative , educational, research, and other professional development skills at 3-year follow-up.	٧	V	V			7
Mookhe rjee et	USA, University	A year-long peer	22 attending	Information provider and	One group,	Significant increases in	1	√	V	1		10

al. (2014)	of California	observation, assessment, and feedback program	hospitalists	coach- Facilitator of learning and mentor- Assessor and diagnostician	Pretest- posttest	hospitalist confidence in giving feedback, receiving feedback, and teaching						
Gardner et al. (2019)	USA, University of Texas Southwest ern Medical Center	A 4-hour intraoperativ e teaching course	faculty members from the general surgery department	Information provider and coach- Facilitator of learning and mentor- Assessor and diagnostician	One group, Pretest- posttest, delayed post- test	efficacy. Resident- perceived improvement in structured teaching behavior among participating faculty.	V			V		11.5
Gates et al. (2013)	USA, Bronx- Lebanon Hospital Center	A four-phase program comprising twelve days of seminars (three days per phase at seven contact hours per day)	dental education faculty members	Information provider and coach- Facilitator of learning and mentor- Assessor and diagnostician - Curriculum developer and implementer - Scholar and researcher- Professional- Manager and	One group, Pretest- posttest	Significant changes in participants' knowledge and confidence for a wide range of academic skills in the realms of learning theory, teaching strategies, curriculum design,	٧	V	√ ·			12

				leader		assessment of					
				100001		students'					
						learning,					
						educational					
						leadership,					
						scholarship,					
						and career					
						development.					
Wong et	USA,	A 1-day	26	Information	One	Significant		V			10
al.	American	faculty	faculty	provider and	group,	improvements					
(2004)	Society of	development	small group	coach-	Pretest-	in					
	Addiction	workshop	facilitators	Facilitator of	posttest	participants'					
	Medicine	-		learning and		small-group					
				mentor		teaching					
						skills.					
Cole et	USA,	An intensive	228	Information	Non-	Significant		 			11
al.	Johns	(3.5 hours	Clinician-	provider and	equival	changes in					
(2004)	Hopkins	weekly),	Educators	coach-	ent	participants'					
	University	longitudinal	(100	Facilitator of	control	self-assessed					
	, School	(nine	program	learning and	group,	teaching and					
	of	months)	participants	mentor-	Pretest-	professional					
	Medicine	faculty	and 128	Assessor and	posttest	skills,					
		development	program	diagnostician		teaching					
		program in	nonparticipa	-		enjoyment,					
		teaching	nts)	Professional-		and learning					
		skills		Manager and		effectiveness.					
				leader			,	,	,		
Salerno	USA,	Three 90-	9	Information	Mixed	Significant					12.5
et al.	Ambulato	minute	board-	provider and	metho	improvements					
(2002)	ry internal	faculty	certified	coach-	dology	in the quality					
	medicine	development	internist	Facilitator of	,	of verbal					
	clinic in a	seminars	faculty	learning and	One	feedback					
	tertiary	based on the	preceptors	mentor-	group,	delivered in					

	care medical center	One-Minute Preceptor teaching model	and 44 third-year medical students	Assessor and diagnostician	Pretest- posttest	the ambulatory setting.						
Christie et al. (2007)	USA, Idaho State University	A four-hour faculty development workshop	14 clinical faculty members	Information provider and coach-Assessor and diagnostician	Mixed metho dology , Three cohorts , Pretest-posttest , delaye d post-test	The clinical faculty's evaluation of professional judgment during patient care was enhanced by training; written comments more frequently related to core values defined in the ADHA code of ethics; students were more positive in outcomes assessments about their competency and learning experiences related to professionalis m and ethics.	V	~	√	V	√	13
Delver	Canada,	The 90-min	13	Information	Mixed	Significant		V				13

et al. (2014)	University of Calgary	Family Medicine Preceptor Online Development program	family medicine preceptors	provider and coach-Facilitator of learning and mentor	metho dology , One group, Pretest- posttest	increases in mean comfort with all the precepting skills taught: giving effective feedback, using questions to teach, teaching communications skills, helping learners in difficulty, and making teaching time-efficient.					
Srivasta va et al. (2016)	India, Jawaharla I Nehru Medical College (JNMC)	A one-year Faculty Development Fellowship Program in Medical Education	40 faculty members from different medical schools	Scholar and researcher	Mixed metho dology , One group, Pretest-posttest	Changes in participants' knowledge regarding educational research.			√		9
Pololi & Frankel (2005)	USA, East Carolina University School of Medicine	A year-long faculty development programme	clinical faculty from 6 different clinical	Information provider and coach- Facilitator of learning and mentor	Qualita tive themat ic and content analysi	Significant improvements in participants' self-awareness,	V	$\sqrt{}$	V		9

_							1			
			departments		S	teaching				
						skills and				
						habits of				
						lifelong				
						learning.				
Lee et	USA,	The 4-hour	30	Information	Rando	No differences		 		15
al.	University	faculty	Family	provider and	mised	were found				
(2018)	of	workshop	Medicine	coach-	control	between				
	Chicago	consisted of	and General	Facilitator of	led	longer versus				
		a lecture and	Internal	learning and	study,	shorter				
		a Group-	Medicine	mentor	Pretest-	training;				
		Objective	Faculty		posttest	improvements				
		Structured	•		,	in				
		Clinical			delayed	participants'				
		Exam			post-	patient-				
		(GOSCE)			test	centered EHR				
		,				use skills in				
						clinical				
						practice.				
Junod	Switzerla	A 6-month	28	Information	Mixed	Increase in		 		11
Perron	nd,	faculty	clinical	provider and	metho	participants'				
et al.	Geneva	development	supervisors	coach	dology	communicatio				
(2014)	University	programme	1		,	n skills				
	Hospitals	consisted of			One	teaching.				
	1	4–5 small			group,	8				
		group			Pretest-					
		sessions (6–7			posttest,					
		h in total)			delayed					
		and 2			post-					
		individual			test					
		coaching								
		sessions (2 h								
		in total)								
		in totai)								

Schaefe	USA,	An 8-h	17	Information	Rando	Significant		V		13.5
r et al.	Northwest	multimodalit	clinical	provider and	mised	increases in		,		
(2014)	ern	y training	faculty	coach	control	participants'				
,	University	course	members		led	cardiac				
	Feinberg	featuring			study,	physical				
	School of	deliberate			Pretest-	examination				
	Medicine	practice and			posttest	interpretation				
		feedback				skills.				
Tricio et	Chile,	A year-long	176	Information	One	Significant	 			11.5
al.	University	faculty	dental	provider and	group,	decrease in				
(2017)	of the	development	faculty	coach-	Pretest-	teacher-				
	Andes,	workshops	members	Facilitator of	posttest	focused				
	School of	in student-		learning and		approaches for				
	Dentistry	centered		mentor		faculty				
		teaching				members from				
		methodologi				before to after				
		es				the				
						workshops.				
Junod	Switzerla	A six- to	48	Information	Non-	No increase in				12
Perron	nd,	nine-month	clinical	provider and	equival	the number of				
et al.	Geneva	faculty	supervisors,	coach-	ent	communicatio				
(2014)	University	development	16 from the	Facilitator of	control	n skills				
	Hospitals	program	inpatient	learning and	group,	recognised by				
		comprising	setting and	mentor	Pretest-	supervisors				
		four to five	12		posttest	but significant				
		90-minute	from the			increase in the				
		small group	outpatient			number of				
		modules and	setting			communicatio				
		two 60-				n issues				
		minute				discussed				
		individual				interactively				
		coaching				in feedback				
		sessions				sessions.				

Rodrigu e et al. (2013)	USA, University of Queenslan d, School of Medicine	A faculty development curriculum consisted of 5 online modules	38 faculty members	Information provider and coach- Facilitator of learning and mentor	One group, Pretest- posttest	Statistically significant decrease in the number of faculty who reported that the program was not at all effective in providing tools to develop skills and habits.	٧	√ ·				10.5
Wong & Fang (2012)	China, Zhejiang University School of Medicine	Two-week faculty development program comprising eight small- group seminars based on the Stanford Faculty Development Program model	early to mid-level medical faculty educators	Information provider and coach- Facilitator of learning and mentor- Assessor and diagnostician	One group, Pretest- posttest	Significant improvements in participants' self-reported teaching skills in both global areas of teaching competence as well as in the frequency of employing certain teaching behaviors associated with effective teaching.	V	V	√ ·	V		9.5
Skeff et	USA,	1-month of	12	Information	3	Significant						11

al.	Stanford	facilitator	facilitators	provider and	cohorts	improvements				
(1992)	University	training at	and 107	coach-	,	in				
	Medical	the Stanford	faculty from	Facilitator of	Pretest-	participants'				
	Center	Faculty	12	learning and	posttest	self-reported				
		Development	institutions	mentor-		teaching				
		Program		Assessor and		performance.				
		2		diagnostician		1				
Klein et	USA,	A year-long	17	Scholar and	Mixed	Significant	 	 		12.5
al.	Cincinnati	national	academic	researcher	metho	increase in				
(2013)	Children's	online	pediatric		dology	participants'				
	Hospital	faculty	faculty from		,	self-reported				
	Medical	development	17 different		One	professional				
	Center	activity on	institutions		group,	Facebook				
		Facebook	across		Pretest-	usage.				
			12 states		posttest,					
			and 4 time		delayed post-					
			zones		test					
Pinheiro	USA,	A yearlong	54	Information	Mixed	Significant	 	 1		10
et al.	Michigan	part-time	community-	provider and	metho	increase in				
(2002)	State	faculty	based	coach-	dology	participants'				
	University	development	physician	Facilitator of	,	self-reported				
	College of	fellowship	faculty	learning and	One	use of				
	Osteopath	program		mentor-	group,	educational				
	ic			Assessor and	Pretest-	concepts and				
	Medicine			diagnostician	posttest,	greater				
				- Curriculum	delayed	participation				
				developer	post- test	in the				
				and	iesi	educational				
				implementer		activities of				
				- Scholar and		their home				
				researcher-		institutions;				
				Professional		changes in				
						participants'				

						perceptions as medical educators and positive impact on the educational process in their home institutions.							
Shields et al. (2007)	USA, Harvard Medical School	Three two-hour faculty development sessions before the course, and a weekly faculty meeting during the course	70 tutors (Gastroenter ology Faculty and attendings or residents in other medical or surgical specialties)	Information provider and coach- Facilitator of learning and mentor	3 cohorts , Pretest-posttest	The tutor as a discussion leader had a significant and positive impact on learning in tutorials, achieving course objectives, improving overall course satisfaction, and increasing a standardized national exam's mean score.	٧	V	V	V	V	V	13
Green et al. (2003)	USA, Yale University School of Medicine	The 3-hour faculty development workshop	26 university- based and community- based	Information provider and coach- Facilitator of learning and	One group, Pretest- posttest, delayed post-	Significant improvements in participants' self-reported	1	V	V	1	V		11.5

			general	mentor-	test	ambulatory				
			medicine	Assessor and		precepting and				
			faculty	diagnostician		primary care				
			-	- Role model		genetics skill.				
Salerno	USA,	Three 90-	9	Information	Mixed	Significant		 		11.5
et al.	Tripler	minute	faculty	provider and	metho	improvements				
(2003)	Army	ambulatory	members	coach-	dology	in the quantity				
	Medical	faculty	and 44	Facilitator of	,	and quality of				
	Center	development	third-year	learning and	One	written				
		seminars on	students	mentor-	group,	feedback				
		written		Assessor and	Pretest-	delivered in				
		feedback		diagnostician	posttest	the				
						ambulatory				
						setting.				
Chung	Korea,	A 3-day	30	Information	One	Significant	 			11
et al.	Korean	international,	faculty	provider and	group,	improvements				
(2012)	Society	collaborative,	teachers	coach-	Pretest-	in				
	for	multi-		Facilitator of	posttest	participants'				
	Simulatio	professional		learning and		self-reported				
	n in	faculty		mentor-		knowledge,				
	Healthcar	development		Assessor and		skills, and				
	e	program on		diagnostician		attitudes				
		Simulation-		- Curriculum		(KSA) toward				
		Based		developer		simulation				
		Healthcare		and		teaching.				
		Education		implementer-						
				Role model						
Schlair	USA,	The 3-hour	36	Assessor and	Mixed	Significant	 			10.5
et al.	Montefior	longitudinal	faculty	diagnostician	metho	improvements				
(2017)	e	faculty	members	-	dology	in				
	Medical	development	and 62		,	participants'				
	Center	program	residents		One	feedback				
					group,	quality.				

					Pretest- posttest							
McAndr ew et al. (2013)	USA, New York University College of Dentistry	A five-year Excellence in Clinical Teaching Program	59 dental faculty members	Information provider and coach- Facilitator of learning and mentor	8 cohorts , Pretest- posttest, delayed post- test	Significant improvements in participants' self- assessment of their teaching ability.	V	V	V	√	٧	9.5
Efstathi ou et al. (2018)	USA, Harvard Medical School	A formal mentorship program consisted of assignment of mentor pairs, three formal training sessions over the course of nine months, and regular informal meetings throughout the program	junior faculty mentees and 91 junior faculty	Facilitator of learning and mentor	Non- equival ent control group, Pretest- posttest , delayed post- test	Significant increase in participants' satisfaction in five of seven domains related to mentoring.	V	V		V		12.5
Eckstro m et al. (2006)	USA, Oregon Health & Science University	A two-year One-Minute Preceptor faculty development workshop	68 internal medicine continuity clinic preceptors	Information provider and coach-Facilitator of learning and mentor	Nonra ndomis ed control led study,	Improvements in participants' self-reported teaching behaviors		V	V	√		16

			(44 control and 24 intervention faculty)		Pretest- posttest , delayed post- test	following the intervention.					
Nasmith & Franco (1997)	Canada, McGill University	A half-day workshop on minor surgical procedures	family medicine faculty members	Information provider and coach	One group, Pretest- posttest, delayed post- test	Increase in the reported number of minor surgical procedures performed and taught, and in faculty members' perceptions of their competence in performing and teaching these procedures.	٧	V	V		7
Fornari et al. (2018)	USA, Hofstra Northwell School of Medicine	A 10-month interprofessi onal faculty development curriculum consisted of small group work, experiential learning, and critical reflection	169 high potential mentors and 61 facilitator leaders	Facilitator of learning and mentor- Role model- Professional	Mixed metho dology , two cohorts , Pretest- posttest	Significant increases in participants' perceptions of humanistic teaching skills; significant increases in participants' self-reported mentoring	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	√	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		11.5

						skills.				
Morzins	USA,	A	35	Information	Longit	Significant,	 √	√	 √	14
ki et al.	Medical	comprehensi	full-time	provider and	udinal,	positive		,	,	
(2003)	College of	ve, 2-year,	family	coach-	multi-	changes in the				
	Wisconsin	within-	medicine	Facilitator of	metho	program				
		institution	faculty	learning and	d	completers'				
		faculty	members	mentor-	study,	competence,				
		development		Assessor and	six	leadership,				
		program		diagnostician	cohorts	presentations,				
		included		- Curriculum	,	and				
		monthly		developer	Pretest-	publications,				
		seminars and		and	posttest	as well as				
		mentor		implementer		enhanced				
		involvement		- Scholar and		retention in				
				researcher-		academic				
				Professional-		medicine.				
				Manager and						
				leader						
Rosenb	USA,	A 3-year	24	Information	One	Substantial			 	11.5
aum et	University	teaching	faculty	provider and	group,	increase in				
al.	of Iowa	scholars	members	coach-	Pretest-	program				
(2005)	Carver	program		Facilitator of	posttest	participants'				
	College of	included		learning and		facilitation of				
	Medicine	monthly		mentor-		teaching skills				
		sessions,		Assessor and		workshops				
		teaching		diagnostician		and				
		videotapes		- Curriculum		development				
		and faculty		developer		of teaching				
		development		and		improvement				
		projects		implementer		systems				
				- Scholar and		within their				
				researcher-		home				
				Professional-		departments.				

				Manager and leader								
Simpso n et al. (2004)	USA, Ambulato ry Pediatric Associatio n (APA)/He alth Resources and Services Administr ation (HRSA)	Three 2-day workshops over a 12- to 14-month period	pediatric educators from across the United States	Information provider and coach-Facilitator of learning and mentor-Scholar and researcher-Manager and leader	Multimetho d study, two cohorts , Pretest- posttest	The faculty development program achieved its objectives, with participants leading workshops, impacting faculty development infrastructure, advancing their own careers, and being strategically positioned in leadership roles with the skills to improve primary care education in the ambulatory setting.	N				1	15
Coogle et al. (2016)	USA, Virginia Common	A 10-month, 160-hour interprofessi	26 participants from	Information provider and coach-	Quasi- experi mental	Significant gains in perceived self-	√	V	√	V		13

	wealth University	onal faculty development programme in geriatrics	medicine, nursing, pharmacy, physical therapy, occupationa l therapy, social work, and the allied health professions	Assessor and diagnostician - Curriculum developer and implementer	study with pre- test post- test design	efficacy and changes in academic teaching, career development, and clinical supervision.							
Davis et al. (2013)	USA, University of Oklahoma College of Pharmacy	One semester Education Scholar Active Learning cohort	11 pharmacy faculty	Information provider and coach- Facilitator of learning and mentor	Mixed metho dology , One group, Pretest- posttest	Increase in participants' knowledge of, perceptions of, and implementatio n of active learning strategies in the didactic classroom.	√ 	V	V				7.5
Blatt et al. (2018)	USA, The George Washingt on University School of Medicine	A 2-year GW-Gold Humanistic Mentor Development Program consisted of two summer evening	faculty (22 physicians and 22 psychosocia 1 professional s) and 180 first-year	Information provider and coach- Facilitator of learning and mentor- Professional	Mixed metho dology , One group, Pretest- posttest	Increase in participants' confidence in their humanistic skills; professional and personal growth and continued	V	√	V	1	V	V	14

		meetings and	medical			professional					
		eight	students			identity					
		Piggyback				development					
		FD				in both					
		workshops				mentors and					
						students.	<u></u>				
Baral et	Nepal,	A three day	25	Information	One	Significant					9
al.	B. P.	long	heterogeneo	provider and	group,	gain in					
(2010)	Koirala	"Training on	us groups of	coach-	Pretest-	participants'					
	Institute	Problem	teachers	Facilitator of	posttest	knowledge of					
	of Health	Based	representing	learning and		and					
	Sciences	Learning"	medical,	mentor		perceptions of					
		workshops	dental,			development					
			nursing			and					
			and public			dissemination					
			health			of PBL					
			schools			manual.					
Reader	USA,	26 half-day	10	Scholar and	Mixed	Increase in					11.5
et al.	Montefior	workshops	busy	researcher	metho	participants'					
(2015)	e Medical	over a 12- to	clinician		dology	confidence,					
	Center/Al	14-month	educators		,	knowledge					
	bert	period			three	and skills to					
	Einstein				cohorts	conduct					
	College of				,	educational					
	Medicine				Pretest-	research.					
					posttest,						
					delayed						
					post- test						
Skeff et	USA,	Five regional	282	Information	Five	Increase in	1	1	1		10
al.	five	1- to 2-day	university	provider and	cohorts	participants'					
(1999)	regions of	teaching-	and	coach-	,	knowledge,					
` /	United	improvement	community	Facilitator of	Pretest-	skills, and					
	States	workshops	faculty	learning and	posttest	attitudes					

mentor regarding office-based teaching; statistically significant changes in participants' behaviors pertaining to fostering a positive learning climate, communicating goals, and providing feedback, as well as general teaching ability. Thampy UK, Two 90-min 73 Information goals, and providing feedback, as well as general teaching ability. Williams CPD Facilitator of control earning and group, post-sing ideas er, workshops learning and group, workshops learning and group, post-sinervention; intervention; intervent	T						**		1			
Thampy UK, Two 90-min 73 Information providing feedback, as well as general teaching ability. Thampy UK, Two 90-min 73 Information providing feedback, as well as general teaching ability. ABond University Contrasting GP tutors provider and Provide and Cacher ent rises in er, workshops learning and group, and manchest within a full-red workshops within a full-red and provide in the coach and the coach an					mentor		regarding					
Statistically significant changes in participants' behaviors pertaining to fostering a positive learning a goals, and providing feedback, as well as general teaching ability. Thampy UK, Two 90-min 73 Information Non-statistically significant changes in participants' behaviors pertaining to fostering a positive learning a positive learning a positive learning and providing feedback, as well as general teaching ability. Thampy UK, Two 90-min 73 Information Non-statistically significant rises in teaching ability. Thampy CUK, Two 90-min 73 Information Non-statistically significant rises in teaching death of the coach-ent rises in teaching ideas to the coach-ent rises in teaching in the coach-ent rises in teaching ability.												
Significant changes in participants' behaviors pertaining to fostering a positive learning climate, communicating goals, and providing feedback, as well as general teaching ability. Thampy UK, Two 90-min 73 Information provider and (2016) of teaching GP tutors (2016) of teaching Hanchest CPD Facilitator of Earling and (2016) within a full-er day tutor Hanchest School The provider and equival significant changes in participants' behaviors pertaining to fostering a positive learning a goals, and providing feedback, as well as general teaching ability. Statistically √ √ √ 9 9 9 9 9 10 10 10 10 10 10 1							Ο,					
Thampy UK, Two 90-min 73 Information Non-Statistically well as general teaching (2016) of teaching (2016) of teaching Hanchest Within a fuller region of the control of teaching Hanchest School Non-Statistically significant rises in Hanchest Within a fuller region of the control of teaching Hanchest School Non-Statistically significant rises in Hanchest Within a fuller region of teaching Hanchest School Non-Statistically significant rises in Hanchest Within a fuller region of teaching Hanchest Within a fuller region of the control teaching Hanchest Within a fuller region of the control teaching Hanchest Within a fuller region of the control teaching Hanchest Within a fuller region of the control teaching Hanchest Within a fuller region of the control teaching Hanchest Within a fuller region of the control teaching Hanchest Within a fuller region of the control teaching Hanchest Within a fuller region of the control teaching Hanchest Hanchest Within a fuller region of the control teaching Hanchest Hanchest Within a fuller region of the control teaching Hanchest Hanc							_					
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g goals, and providing feedback, as well as general teaching ability. Thampy UK, Two 90-min 73 Information Non- Statistically significant (2016) of teaching coach- ent rises in Manchest CPD Facilitator of control teaching ideas er, workshops learning and group, post- Manchest within a full- er day tutor er day tutor Medical conference School We will as general teaching ability. Non- Statistically significant rises in teaching ideas group, post- intervention; postest tuttors who used unstructured discussions							climate,					
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Thampy UK, Two 90-min 73 Information Non- Statistically \$\sqrt{V}\$							general					
Thampy UK, Two 90-min 73 Information Non- Statistically \$\sqrt{\synti\sqc}}}}}}}}}} \sqrt{\sqrt{\sqrt{\synt{\sq}}}}}}}}}} \sqr							teaching					
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er day tutor posttest tutors who Medical conference used School unstructured discussions		,										
Medical conference used School unstructured discussions		er	day tutor			posttest						
School unstructured discussions			•			•						
discussions		School										
more ideas												

						and reported greater intention to change future teaching practice than those guided by PBL-based vignettes.						
Lemoin e et al. (2015)	USA, Louisiana State University Health Sciences Center	An 8-month interprofessi onal faculty development in simulation-based education consisted of 12-module curriculum	215 health professions education faculty	Information provider and coach- Facilitator of learning and mentor- Assessor and diagnostician - Curriculum developer and implementer	Four cohorts , Pretest-posttest	High faculty receptivity, statistically significant gains for all targeted knowledge, skills, and perspectives, and highly effective overall implementatio n.	٧	V	V			12.5
William s et al. (2008)	USA, University of Michigan	A four-year faculty development seminar in geriatrics	faculty from seven surgical and related disciplines and five medical subspecialti es	Information provider and coach- Facilitator of learning and mentor- Assessor and diagnostician - Curriculum developer	Mixed metho dology , three cohorts , Pretest-posttest, delayed post-	Changes in attitudes and knowledge of faculty participants; expanded curricula and teaching activities in geriatrics in	√	V	V	√ 	V	13

<u> </u>				and	test	noutiainatina				
					iesi	participating				
				implementer		departments,				
				- Scholar and		and enhanced				
				researcher-		and altered				
				Professional-		career				
						trajectories of				
						faculty				
						participants.				
Kuhnig	Germany,	Four-year	322	Information	Four	Significant	 			11
k et al.	Medical	teacher	faculty	provider and	cohorts	increases in				
(2013)	Faculty of	training	members	coach-	,	participants'				
	Hamburg	workshops		Facilitator of	Pretest-	self-				
	University			learning and	posttest,	assessment of				
	•			mentor-	delayed	didactic skills				
				Assessor and	post- test	up to four				
				diagnostician	test	years after				
				C		attending a				
						faculty				
						development				
						workshop.				
Weppne	USA,	A year-long	35	Information	One	Increase in the		V		8.5
r et al.	University	interprofessi	faculty	provider and	group,	number of		,		
(2017)	of	onal faculty	members	coach-	Pretest-	interprofessio				
	Michigan	development	included	Assessor and	posttest	nal				
	1,1101118	curriculum	internal	diagnostician		copresentation				
		included	medicine	Giagnostician		s; increased				
		teaching	and related			presentation to				
		seminars,	subspecialti			interprofessio				
		journal clubs	es,			nal groups and				
		and teaching	pharmacy,			increased				
		observations	nurse			cross-				
		ouser various	practitioner,			profession				
			_			feedback.				
<u> </u>			psychology			reedback.				

			and psychiatry								
Mkony et al. (2012)	Tanzania, Muhimbil i University of Health and Allied Sciences	A 3-day workshop on competency- based education	97 faculty members	Information provider and coach-Facilitator of learning and mentor-Assessor and diagnostician - Curriculum developer and implementer	Two cohorts , Pretest-posttest	Increase in faculty confidence to a level near 'very confident' for items related to explaining, teaching, and assessing competencies; increase in confidence for developing		√			9
Hatem et al. (2007)	USA, University of Massachu setts Medical School	A 5-day faculty development workshop on teaching the medical interview	79 medical school faculty	Information provider and coach- Facilitator of learning and mentor-	One group, Pretest- posttest	curriculum. Significant changes in mean scores of participants' confidence in interview, clinical, teaching and self-awareness skills.	√ √	V	√ √		11
Davis et al. (2015)	USA, Emory University	A 2-hour facilitator training session in inter-	53 faculty from the schools of medicine and	Information provider and coach- Facilitator of learning and	Quasi- experi mental study with	Significant changes in participants' self-concept for the	V	V	V		13.5

		professional	nursing	mentor-	pre-	knowledge,				
		education	_		test	skills and				
					post-	attitudes				
					test	toward inter-				
					design	professional				
						teamwork.				
McCurd	USA,	A year-long	22	Manager and	Mixed	Statistically				10
y et al.	The	course	faculty from	leader	metho	significant				
(2004)	University	included	the colleges		dology	changes in				
	of	eight 3-hour	of		,	participants'				
	Nebraska	workshop	Medicine,		One	knowledge				
	Medical	sessions	Dentistry,		group,	about				
	Center		Nursing and		Pretest-	leadership				
			Pharmacy		posttest	competencies;				
						three themes				
						arose from the				
						analysis of				
						projects:				
						change,				
						management,				
						and				
						interpersonal				
						communicatio				
						ns.				
Kesselh	USA,	A curriculum	20	Information	One	Significant	 			10
eim et	The	blending in-	faculty	provider and	group,	increase in				
al.	American	person	from 20	coach-	Pretest-	participants'				
(2019)	Society of	training,	different	Facilitator of	posttest	self-reported				
	Hematolo	which took	institutions	learning and		confidence in				
	gy (ASH)	the form of a		mentor-		the				
	Medical	3.5- day		Assessor and		knowledge,				
	Educators	intensive		diagnostician		skills, and				
	Institute	workshop,		- Curriculum		attitudes				

		with follow- up distance learning in the form of a webinar series		developer and implementer - Scholar and researcher- Professional- Manager and leader		targeted by the curriculum.						
Podrazi k et al. (2008)	USA, University of Chicago	The faculty development programme consisted of twelve 4-hour sessions	hospitalist and general internal medicine faculty members	Information provider and coach- Facilitator of learning and mentor- Assessor and diagnostician	Three cohorts , Pretest- posttest	Significant improvements in participants' knowledge, attitudes to geriatrics, and perceived behavior in teaching and practicing geriatrics skills.	V	√ ·	√	N		10
Evans et al. (2014)	USA, The Stanford Geriatric Education Center	The 12-hour, eight-module core curriculum was implemented during an intensive weeklong program over a three-year period	faculty participants from 11 disciplines, including medicine, came from 19 institutions in 12 states	Information provider and coach	One group, Pretest- posttest	Positive effect on participants' knowledge, skills, and attitudes related to topics in Health Literacy and Ethnogeriatric s (HLE);	٧	$\sqrt{}$	V	V	V	11.5

						positive effect on participants' scores on the Health Beliefs and						
						Attitudes Survey and dissemination of HLE knowledge by participants at their home institutions.						
Baldwin et al. (2017)	USA, The Academic Pediatric Associatio n	A national, three-year, cohort-based certification program focused on fostering educational scholarship	50 faculty members	Scholar and researcher	Mixed metho dology , three cohorts , Pretest-posttest, delayed post-test	Significant increase in participants' self-perceived proficiency in four domains (scholarly approach, professional interactions, educational scholarship, and other educational knowledge/ski lls); significant increases in	~	√	1	٨	√	13

							1	1	1	_	1	1	1
						the numbers							
						of peer-							
						reviewed							
						publications,							
						national							
						presentations,							
						and national							
						leadership/							
						membership							
						positions, as							
						well as in the							
						number of							
						academic							
						promotions.							
Garner	India,	The 8-h	87	Information	One	Significant							12.5
et al.	nursing	faculty	nurse	provider and	group,	improvements							
(2018)	school	development	faculty	coach-	Pretest-	in total self-							
	in	workshop on		Facilitator of	posttest	efficacy and							
	Bengaluru	simulation		learning and		subscale							
				mentor-		scores among							
				Assessor and		nurse							
				diagnostician		educators.							
Berbano	USA,	Seven 2-hour	8	Information	One	Improvement	\checkmark						12.5
et al.	Walter	sessions of	internal	provider and	group,	in							
(2006)	Reed	faculty	medicine	coach-	Pretest-	participants'							
	Army	development	faculty	Facilitator of	posttest	teaching							
	Medical	included		learning and		behaviors,							
	Center	didactic,		mentor-		specifically in							
		role-play,		Assessor and		the quality of							
		and		diagnostician		questions							
		videotaped		_		asked and							
		performance				feedback							
		evaluation.				provided.							

Nemec & Welch (2016)	USA, Western New England University College of Pharmacy	A 1.5-hour faculty development seminar	24 pharmacy faculty	Assessor and diagnostician	One group, Pretest- posttest	Significant improvement in the quality of in-house MCQ and faculty confidence in constructing new MCQ.			1			12.5
Rust et al. (2006)	USA, Morehous e School of Medicine	A 1-year longitudinal/ modular workshops	and new or established faculty	Information provider and coach- Facilitator of learning and mentor- Assessor and diagnostician - Curriculum developer and implementer - Scholar and researcher- Manager and leader	10 cohorts , Pretest-posttest	Improvement in participants' self-reported before-after competencies in specific academic skills such as teaching, writing, research, and grant writing.	V	√ ·	V	V	√ ·	14
Walsh et al. (2019)	USA, the Brody School of Medicine, East Carolina University	The 15- Month faculty development program included six 2-day learning	27 clinical faculty members	Information provider and coach-Facilitator of learning and mentor-Curriculum developer	Equiva lent control group, Pretest- posttest, delayed post- test	Significant increase in participants' self-assessed knowledge of quality improvement, patient safety,	1	V	V	√		12

		sessions on the principles and application of health systems science		and implementer Scholar and researcher- Professional- Manager and leader		adult education principles, and curricular development; significant increase in participants' self-assessed knowledge and						
DI III	LIG A	4.2.1	227		M: 1	confidence in teaching and applying health systems science principles at 1 year post training.						10.5
Phillips et al. (2019)	USA, Chamberl ain College of Nursing, Chamberl ain University	A 2-hour eLearning faculty development course in clinical teaching included 8 modules	237 clinical nurse educators	Information provider and coach- Facilitator of learning and mentor- Assessor and diagnostician	Mixed metho dology , One group, Pretest- posttest, delayed post- test	Significant increase in participants' self-reported knowledge and skill acquisition including transfer of new skills to the nurse educator role at 3 months after	V	V	V	V		10.5

						completing					
						the course.					
Yoon et	Mongolia,	The 17-day	325	Information	Seven	Significant	√	√			9.5
al.	The	•	faculty	provider and	groups,	_	·V	·V			9.3
(2016)	Mongolia	faculty	members	coach-	Pretest-	improvements in					
(2010)	n National	development workshops	members	Facilitator of	posttest	participants'					
	University	over 3 weeks		learning and	Postest	attitudes and					
	of	Over 3 weeks		mentor-		perspectives					
	Medical			Assessor and		after the					
	Sciences			diagnostician		educational					
	Belefices			- Curriculum		programs.					
				developer		programs.					
				and							
				implementer-							
				- Scholar and							
				researcher-							
				Manager and							
				leader							
Delling	USA,	One-hour	24	Assessor and	Rando	Significant					12.5
es &	School	training	dental	diagnostician	mised	improvement					
Curtis	of	workshop	school		control	in MCQ item					
(2017)	Dentistry,		faculty		led	quality in the					
	University		members		study,	intervention					
	of				Pretest	group.					
	California				-						
					posttes						
					t	~	1	,	,		
Safavi	Iran,	7 one-week	158	Curriculum	Seven	Significant		V	√		13.5
&	Hamedan	training-	faculty	developer	cohorts	increase in the					
Sadeghi	University	consulting	members	and	, Pretest-	number of					
(2017)	of	courses with		implementer	posttest	standard					
	Medical	a 1			positest	lesson plans					
	Sciences	supervised				developed by					

		and feedback				participants.				
		on								
		experience								
		strategy								
Derakhs	Iran,	5 educational	faculty	Assessor and	Quasi-	Significant				13.5
han et	Qazvin	workshops	members	diagnostician	experi	improvement				
al.	University		from 7		mental	in MCQ item				
(2015)	of		departments		study	quality after				
	Medical				with	the				
	Sciences				pre-	educational				
					test	programs.				
					post-					
					test					
					design					