Title

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Journal

BMJ Open, 13(4)

ISSN

2044-6055

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Publication Date

2023-04-01

DOI

10.1136/bmjopen-2022-069466

Peer reviewed

BMJ Open

Longitudinal faculty development to improve interprofessional collaboration and practice: a multisite qualitative study at five US academic health centres

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To cite: Rider EA, Chou C, Abraham C, *et al*. Longitudinal faculty development to improve interprofessional collaboration and practice: a multisite qualitative study at five US academic health centres. *BMJ Open* 2023;**13**:e069466. doi:10.1136/bmjopen-2022-069466

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (http://dx.doi.org/10.1136/bmjopen-2022-069466).

Partial data from this study were presented at the International Conference on Communication in Healthcare—ICCH 2021, 19 October 2021 (virtual); 4th International Congress on Whole Person Care, 23 October 2021 (virtual); the National Academies of Practice 2022 Annual Meeting and Forum, 4 March 2022, San Diego, California, USA; and at Transform MedEd 2022, 11 November 2022, London, UK.

Received 21 October 2022
Accepted 14 March 2023

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ABSTRACT

Objectives Interprofessional (IP) collaboration and effective teamwork remain variable in healthcare organisations. IP bias, assumptions and conflicts limit the capacity of healthcare teams to leverage the expertise of their members to meet growing complexities of patient needs and optimise healthcare outcomes. We aimed to understand how a longitudinal faculty development programme, designed to optimise IP learning, influenced its participants in their IP roles.

Design In this qualitative study, using a constructivist grounded theory approach, we analysed participants' anonymous narrative responses to open-ended questions about specific knowledge, insights and skills acquired during our IP longitudinal faculty development programme and applications of this learning to teaching and practice.

Setting Five university-based academic health centres across the USA.

Participants IP faculty/clinician leaders from at least three different professions completed small group-based faculty development programmes over 9 months (18 sessions). Site leaders selected participants from applicants forecast as future leaders of IP collaboration and education.

Interventions Completion of a longitudinal IP faculty development programme designed to enhance leadership, teamwork, self-knowledge and communication.

Results A total of 26 programme participants provided 52 narratives for analysis. Relationships and relational learning were the overarching themes. From the underlying themes, we developed a summary of relational competencies identified at each of three learning levels: (1) Intrapersonal (within oneself): reflective capacity/self-awareness, becoming aware of biases, empathy for self and mindfulness. (2) Interpersonal (interacting with others): listening, understanding others' perspectives, appreciation and respect for colleagues and empathy for others. (3) Systems level (interacting within organisation): resilience, conflict engagement, team dynamics and utilisation of colleagues as resources.

Conclusions Our faculty development programme for IP faculty leaders at five US academic health centres achieved relational learning with attitudinal changes that can enhance collaboration with others. We observed meaningful changes in participants with decreased biases, increased self-reflection, empathy and understanding of others' perspectives and enhanced IP teamwork.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ Our multisite study included five academic health centres from various regions across the USA, with cohorts at each site representing at least three different health professions.
⇒ While interprofessional courses are common and most rely on didactic approaches, we created a longitudinal programme for faculty leaders that combined critical reflection with experiential learning.
⇒ Our open-ended qualitative methods were well suited to the main goal of achieving a textured understanding of learning generated by our highly reflective and participatory longitudinal course.
⇒ We organised our study's themes into a summary of relational competencies at each level of learning that may catalyse more impactful collaboration and teamwork.
⇒ A larger number of participants and settings could provide additional information and insights.

INTRODUCTION

The increasing complexity of healthcare substantially influences the experiences of clinicians, learners, patients and families. High-functioning healthcare teams must collaborate effectively to leverage the expertise of diverse members from various professions to meet the growing needs of patients and optimise healthcare outcomes.[1–3] Developing a collaborative healthcare culture for interprofessional (IP) teams requires optimal relational skills, interpersonal cohesion and role clarity as well as respectful, trusting relationships between team members.[4–8]

Achieving this vision for the future requires team members with well-developed, mature professional identities that allow effective collaboration with other professionals with

Box 1 US academic health centres participating in programme and survey

⇒ Indiana University School of Medicine, Indianapolis, Indiana.
⇒ University of California, San Francisco, School of Medicine, San Francisco, California.
⇒ University of Massachusetts T. H. Chan School of Medicine, Worcester, Massachusetts.
⇒ University of Minnesota Medical School, Minneapolis, Minnesota.
⇒ Yale University School of Medicine, New Haven, Connecticut.

similarly developed competencies.[9] This collaboration requires not only professional effort but also a relational process including authentic relationships, trust, open and honest communication, partnership and respect for and awareness of the contributions and perspectives of teammates.[10] Although much has been written about interprofessional collaboration and education (IPC/E) in recent years, graduates appear little more competent in these skills than their predecessors.[11] Definitive effects of IPE on collaborative practice, behavioural and organisational changes, and patient outcomes remain unclear,[12–14] although the literature increasingly suggests that IPE can foster skills, attitudes and knowledge for collaborative practice, and some evidence suggests that IPE may help to improve patient care.[13 15–17] However, learning effective IPC and effective teamwork remains variable and suboptimal within healthcare organisations.[6] Furthermore, little is known regarding the efficacy and effectiveness of educational programmes at the faculty level to improve IPC.

Our prior longitudinal faculty development programme for physicians at 30 medical schools impactfully enhanced faculty physicians' humanistic attitudes and behaviours.[18–23] Therefore, we designed a new longitudinal, intensive, small group IP learning experience for future teachers and leaders of IPC/E, successfully piloted this programme,[24] and have now completed the newly adapted programme at five university-based US academic health centres (box 1).

This qualitative study reports an analysis of participants' reflective essays, which we undertook to understand learning in our programme. Our exploration was open-ended. We did not know what we would find but rather allowed themes to emerge through careful analyses of participants' reflective descriptions of their learning and experiences. We sought to understand if and how our programme influenced its participants in their roles as IP clinicians and team members.

METHODS

This qualitative study followed the Standards for Reporting Qualitative Research reporting guideline[25 26] (see online supplemental file 1). Given the scarcity of explanatory theories and understanding about deeper factors relating to relationships and teamwork among IP educators and clinicians,[6] we chose a constructivist grounded theory approach for hypothesis generation.[27] Specifically, we used constant comparative analysis of the qualitative data from open-ended questions to explore participants' learning experiences, knowledge and insights and used its applications to enrich the theory development.[25 28–30]

Institutional review boards exempted or approved the study at each site (see online supplemental file 2). All participants consented to participate in a qualitative study of their responses. Although participants had consented to participate at the beginning of the program, sharing their written responses was again addressed during data collection at the end of the program, and submitting narratives was voluntary.

Patient and public involvement

It was not appropriate or possible to involve patients or the public in the design, conduct, reporting, or dissemination plans of our research.

Reflexivity statement

We thoughtfully considered investigators' characteristics that might have influenced the approach, analysis or interpretation.[25 28] The five researchers maintained reflexivity on their analyses by frequently and comprehensively discussing emerging themes and key quotations and respectfully challenging assumptions. Our team of investigators (five clinical educators from three health professions and different specialties) has extensive qualitative research experience using consensus analysis and constructivist approaches.[18 21 22 31]

Participants, setting and curriculum

Study participants at five US university-based academic health centres (box 1) completed a small group-based, 9-month faculty development programme designed to foster skills, knowledge, attitudes and values related to humanistic, collaborative, IP educational and clinical activities. Applications for the programme were open to all IP supervisory faculty. While not necessarily experienced in IPE/C, all programme applicants were required to write an essay about their prior experience and interest in learning about and applying IPC/E to their career goals, which figured in their acceptance to the programme. None were expected or required to participate because of their role or position. Site investigators (authors/local small group facilitators at the institutions) then selected between 8 and 11 participants from applicants forecast as future leaders of IPC/E. All participants committed to attending at least 80% of the sessions, verified by programme facilitators. At each institution, participants from at least three different professions met in 90 min small group sessions two times per month between September 2017 and June 2018. All programme facilitators were experienced small group facilitators, familiar with IPC/E principles, and had experience with IP teaching.

The curriculum focused on enhancing leadership and professionalism and used critical reflection and experiential learning designed to promote teamwork, collegiality, self-knowledge and communication skills, focused especially on difficult situations encountered by a healthcare team (table 1).

Data collection

Investigators at each site instructed participants to complete written reflective responses and emailed non-responders up to three reminders. Participants were instructed to write at least a paragraph, and preferably more, in response to the following questions:

'What specific knowledge, insights or skills have you gained by working in this interprofessional group? (If possible, please name at least three specific learnings)'; and "How have you applied these specific learnings to your teaching or practice (If possible, please write one detailed paragraph per learning item)."

Site leaders also collected demographic information. Data were deidentified and coded for anonymity prior to transfer to the principal investigator (WB).

Analytic methods

Five investigators (EAR, CA, CC, PW and WB) analysed 52 reflective responses between May 2019 and May 2020 on a series of 8 conference calls using the constant comparative method.[32–35] Essays were deidentified as to institution (designated by letters) and specific respondent (denoted by numbers). All investigators participated in each stage of the analysis, and read the essays prior to calls. One investigator on the call read each essay aloud followed by discussion to identify themes of that essay. The investigators discussed participants' reflective responses about what they learned—knowledge, insights, skills and how they applied these to their teaching or practice—and identified provisional themes by consensus. Investigators did not limit the number of provisional themes that could be identified from a single reflective response. The themes of each essay were compared with previously identified themes and, if necessary, to the wording of previously analysed essays to determine if new or more inclusive themes were discovered. The investigators discussed five to seven essays on each call, identifying new or modified themes as well as examples of quotations that best illustrated them. After discussion of the 52 essays on 8 calls, investigators reached thematic saturation and consensus on the final themes to be used.

RESULTS

A total of 26 of 42 (62%) programme enrolees completed the programme and submitted reflective essays, resulting in 52 responses (2 essays from each respondent) for analysis. A total of 18 of 26 who completed the programme and responded were women (69%), 15 (58%) under age 45 and 13 (50%) held director, coordinator or other leadership roles. Overall, 7 of the 26 (27%) identified themselves as physicians, 8 (30%) nurse practitioners/nurse specialists, 4 (15%) social workers, 3 (11%) pharmacists, 3 (11%) physical therapists and 1 administrator. A total of 17 (65%) were at >50% clinical, 5 (19%) at >40% teaching, 3 (11%) at >50% administrative and 1 at >50% research effort. Eight enrolled participants did not complete the programme. Response rate by institution was 8/10 from #1, 4/9 from #2, 7/10 from #3, 5/7 from #4, and 2/6 from #5. The entire cohort of 42 including dropouts and non-responders was similar to the sample of responders. Overall, 72% were women, and the majority were physicians (30%) or nurse practitioners/nurses (37%).

Themes

Relationships and relational learning were the overarching themes. Participants described relational learning on three levels: (1) intrapersonal, (2) interpersonal and (3) systemic.

Intrapersonal learning

Intrapersonal learning refers to learning within oneself. Participants wrote about mindful, self-reflective, intrapersonal learning while listening or participating in group interactions. We subdivided their intrapersonal learning into (a) reflective capacity/self-awareness, (b) becoming aware of one's own biases, (c) empathy for self and (d) mindfulness (table 2).

Reflective capacity/self-awareness

Participants described reflecting about their inner emotional landscape and their perceptions of how this contributed to their sense of relationship, 'fellowship' and improving IP teamwork.

> This fellowship has been about learning and doing - but it has also been about emotional learning. Vulnerabilities were brought up and explored. Group members challenged and supported each other. And so, it ultimately gave me a deeper meaning for the word 'fellowship'. [K57, Nurse]

Becoming aware of one's own biases

Participants noted the importance of increasing awareness of one's own biases and assumptions about those in professions other than their own. Many described inwardly re-examining their biases and coming to more positive views about others.

> We all come from different places, have our biases and this influences how we initially interpret a situation. Hopefully this will lessen the likelihood that I will jump to conclusions regarding the reactions of a professional colleague. [L15, Nurse]

Others applied this understanding to their clinical teaching:

> We come with many biases, some of which we are aware of and others we may not be aware of. Asking

Table 1 Curricular content for longitudinal faculty development for interprofessional collaboration and practice*

Topic	Learning objectives
Introductions	► Get to know each other as people and as professionals. ► Support an atmosphere of respect for each person's role and abilities. ► Create a supportive, safe environment in which participants feel free to share.
Appreciative inquiry/ narrative reflection	► Identify strengths in humanistic teaching and patient care by writing an appreciative inquiry narrative, reading the narrative in a small group and guided by facilitator, reflecting with other group members on the meaning and strengths identified in the narrative.
Through the patient's eye: an exercise in empathy	► Gain insights and appreciation for the meaning of the patient's experience through creating and sharing an illness narrative from the perspective of the patient.
Giving difficult news: a teaching exercise	► Practice skills in giving bad news to patients. ► Form an interprofessional team that can plan, carry out (role play) and debrief giving bad news to a patient. ► Teach giving bad news by using an interprofessional team-based approach.
Elements of highly functioning teams: appreciation of team members	► Demonstrate knowledge and skills necessary to facilitate team effectiveness by knowing and appreciating teammates in their work and teaching.
Advanced team formation: effectively engaging across differences and conflict	► Explore and apply concepts and skills related to staying connected as a team through appreciation of difference and effective conflict engagement.
Error disclosure and team formation	► Create a meaningful team-based learning experience around analysis and disclosure of a medical error. ► Experience and practice (role play) responding as a team to disclose to the patient and family a medical error with wisdom and integrity, qualities associated with professionalism and humanism. ► Incorporate principles of compassionate, empathic communication and a culture of safety into professional practice, and role model effective strategies with interprofessional learners and team members.
After the error: learning, growth and wisdom	► Share personal stories and create a meaningful learning experience for clinicians that will better prepare them to move through and learn from a medical error with wisdom and integrity, qualities we associate with professionalism and humanism.
Well-being, resilience and renewal	► Discuss and reflect on current individual practices and work environment influences on burnout, resilience and renewal.
Mindfulness and mindful practice	► Define mindfulness and discuss key activities of mindful practice including attention, intention, self-awareness and reflection. ► Reflect on and discuss reactions to and implications of mindfulness activities. Discuss applications of mindfulness in day-to-day activities.
Promoting diversity and inclusion	► Evaluate the schemas and assumptions we use in life, and how they can create problems socially, educationally, professionally and clinically. ► Explain the clinical and educational meaning and relevance of schemas, implicit bias, stereotype threat and microaggressions. ► Describe the advantages of hearing and using diverse perspectives in clinical and educational settings.
Interprofessional education readiness: competencies for all	► Discuss the applicability of the IPEC Report† competencies in high-functioning interprofessional teams. ► Develop a plan for advancing two IPC/E competencies in your work environment. ► Collaborate with at least one colleague from another profession to model IPC/E competency-based activities.
Final appreciative inquiry/ narrative reflection	► Participants identify strengths of their professional work and/or participation in this group by writing an appreciative inquiry narrative, reading the narrative in the small group, and reflecting guided by facilitator with other group members on the meaning and strengths identified in the narrative.

*Table adapted with permission from: Branch.[73]
†Core Competencies for Interprofessional Collaborative Practice: 2016 Update.[8]
IPC/E, interprofessional collaboration and education.

Table 2 Intrapersonal learning: themes and representative quotations

Theme	Representative quotations
Reflective capacity/self-awareness	This may be unexpected, but the program provided me the opportunity to practice skills at removing myself (however briefly) from the work environment to take time to be more thoughtful about my work, and to be more deliberative with my thinking. In ten years at [school J], this class was the second time I took advantage of what I considered 'me time' while at work. [J68, Administrator]
Becoming aware of one's own biases	Even knowing that we should not make assumptions, our brains tend to make them anyway depending on our experiences. While not always bad, it is important to be cognizant of this and how someone with different experiences may view the same situation. [D70, Pharmacist]
Empathy for self	The time during these meetings has allowed me to take a step back for a moment to realize just how important it is to take care of ourselves as providers. Getting to know my other colleagues and ways they manage the day-to-day stresses and pressures to cope with our busy schedules has been tremendous. [U51, Physician] Enhanced empathy toward self and others overlapping with skill development: (E)mpathetic teaching and communication skills in our group/fellowship taught us to focus on our ability to not only see others' perspectives but also…to use this empathy to form relationships and improve our teaching content…[K60, Physical Therapist]
Mindfulness	Focus on the task at hand. This is/was a powerful exposure. Not only did it reinforce the value of the moment, it also showed the danger of missing the obvious. [L11, Physical Therapist]

students to pause and think about why they may have responded in the way they did, or why they chose an approach to one person that was different in how they approached others may help to uncover some of the hidden biases people have. [L12, Nurse]

Empathy for self

Many participants not only developed appreciation and respect for their IP colleagues, but gained the same for themselves:

> Self-worth - Working in academia can be very challenging. This is particularly true for faculty members, like me, who are 'clinical' vs 'tenured' faculty. The simple truth is we often … feel like second-class faculty…This group of professionals reminded me of my value to the (any) team, I left our meeting(s) feeling appreciated, valued, and respected. [L11, Physical Therapist]

Mindfulness

Some participants described the usefulness of mindfulness (ie, being present).

> I have learned to be mindful. Being present is very challenging these days due to constant interruptions …I often feel like I'm not truly succeeding at anything because of distractions. This seminar allowed me to be mindful and present and taught me how to apply that to my current practice. [U68, Social Worker]

See table 2 for additional examples of representative quotations.

Interpersonal learning

Interpersonal learning refers to learning through interaction with others. Relationship skills comprised all major themes identified on the interpersonal level: (a) listening skills, (b) understanding others' perspectives, (c) appreciation and respect for colleagues and (d) empathy for others (table 3).

Listening skills

Although participants talked about the excessive amount of information they received during regular working hours, they discovered the value of deep listening, not just hearing words, but recognising the values and emotions of those they were interacting with:

> Listening - each/every session. The entire experience re-emphasized the importance of listening to each other. Without true listening we cannot legitimately comprehend another person's perspective. [L11, Physical Therapist]

Understanding others' perspectives

Participants gained in their capacity to see others' perspectives and reported learning in depth about the perspectives of those in different professions.

> Everybody processes information differently and has a unique way of thinking: … Some of this is influenced by norms or stereotypes in place from our society, culture, upbringing. It also is influenced by the specific professional training we received from schooling. What this made me realize and think about was that just because I am thinking of a topic or scenario in one way, someone else may be getting a very different message. [D70, Pharmacist]

Appreciation and respect for colleagues

Participants reported developing a deeper appreciation of their colleagues. One participant noted,

> I am grateful for this group and this class, to expand on my circle of colleagues that I feel close with.

Table 3 Interpersonal and systems level learning: themes and representative quotations

Theme	Illustrative quotations
Interpersonal learning	
Listening skills	I have learned to … recognize that it's not always about talking, but it's about listening. I think so many times we feel we need to 'contribute' something important to the team situation (which is important), but it's also important to simply listen and absorb what other disciplines have to offer. [U68, Social Worker]
Understanding others' perspectives	Listening to my IPE colleagues and learning from them have tremendously helped open my mind, to think in different ways that I would never consider or try before. [K56, Pharmacist] I really felt a bond with W which made me realize what a phenomenal physician she must be. I could feel her empathy and compassion even in the role playing. Acting as the recipient of bad news helped me understand that what was being said and how it was being said were extremely important - not only in validating my role's concerns and loss, but in de-escalating my level of discomfort. Compassionate validation and admission of the error was disarming and comforting. [L12, Nurse]
Appreciation and respect for colleagues	The regular meetings and knowing the challenges that each member had to overcome, just to get there in the morning helped me appreciate not only what each team member had to offer, but to appreciate their presence in and of themselves. When we round in patient's rooms now, I try to find out, and teach students and residents to find out something about the patient that they didn't know before that helps them connect with the patient as a person. [L16, Physician] When oncologists are on service, they are in fact busy all day, and the infrastructure in place does not necessarily support their needs. I knew they were busy, but I didn't have a full appreciation of their situation until M and C described it in detail. This helped me improve as a leader on an almost subliminal level, as my expectations of physicians' participation on projects and other efforts were tempered by the realities they face both while on service and during normal clinical and academic time. [J68, Administrator]
Empathy for others	Empathetic teaching and communication skills in our fellowship taught us…to use this empathy to form relationships and improve our teaching content in the way of 'soft skills' that made us more efficient teachers and models for our learners. I have used this in mentoring clinical preceptors in my clinic [K60, Physical Therapist]
Systems level learning	
Resilience applied systemically	We learned skills that not only apply to help students become resilient but also ourselves as teaching and clinical professionals. I have incorporated this into my teaching by focusing on giving learners in the clinic space to self-reflect on their own needs as learners and as people and soliciting their thoughts on how they would be able to learn best. [K60, Physical Therapist]
Conflict engagement	B's story of supporting his staff in pediatrics when a contentious colleague … was being unreasonable and difficult… demonstrated his humanity, his understanding of the value of each member of the team and the importance of doing what is right in spite of a possible power imbalance. [L12, Nurse]
Team dynamics	After this time with my colleagues, I have seen firsthand the amazing aspects each colleague brings to the table…Social work helps patients get what they need. Providers do not always understand the hurdles for some patients …whether that is due to resources, family issues, or other issues out of their control…We all need to understand we are only one person and cannot do it alone, but rather we need a team. [U52, Nurse]
Utilisation of colleagues as resources	I have learned to appreciate the input from other disciplines. Every discipline has something to offer to the team and the situation. Hear it, acknowledge it, and use it. [U68, Social Worker]

IPE, interprofessional education.

> There's something beautiful about healthcare workers when we are at our best, a benevolent acceptance of human beings. [K59, Physician]

Empathy for others

Participants noted gaining insights through feeling empathy for others.

> Everyone is stressed, working hard, and trying to do their best. While it may seem that 'others' sometimes come across angry, or short, or demanding or uncooperative –it is important for us to sit back and put ourselves 'in their shoes' for the moment as we try to understand their reactions and responses. It is typically not a personal affront but a reaction to their

current situation. Empathizing with them may go a long way to enhancing the relationship and moving forward to best serve [t]he patient. [L12, Nurse]

Systems level learning

Systems level learning includes learning from interactions within the organisation. Examples above and in tables 2 and 3 show participants applying their intrapersonal and interpersonal learning to teaching interactions outside the groups. Additional capacities learnt in the groups but applied at the systems level included (a) resilience, (b) conflict engagement, (c) awareness of team dynamics, and (d) appreciation of the resources that IP colleagues bring (table 3).

Resilience applied systemically

In the resilience section of our curriculum, learners realised that individual efforts constitute only part of a broader, institution-level responsibility:

I appreciated … how organizational culture and efficiency are just as important as personal behaviors. Before, I had a negative connotation with this topic because previous discussions/lectures only focused on individual factors and not the organization as a whole. [K40, Physician]

Conflict engagement

Some participants described learning to navigate conflict.

… by working in this professional group, I have learned how to think about and approach differently various conflict situations; how to think through them, how to deescalate conflict situations; how to approach and try to talk to and reason with my interprofessional colleagues with the aim of continuing and strengthening the collaboration, the teamwork, and patient care as well. [K56, Pharmacist]

Team dynamics

Participants expressed awareness of team dynamics and ability to counteract prevailing non-team-oriented cultural norms.

We also had a few pharmacists in our group who shared details of their experience on rounds with the team. On[e] of the pharmacists explained that sometimes it is difficult to speak up on rounds. Because of her shared experience, I made a point to introduce her to the team on rounds, which she later told me was helpful when making recommendations to the team. [J05, Physician]

Participants also recognised the necessity and importance of the team:

I already believed that working in a team was hugely valuable to our patients and their care… We all need to understand we are only one person and cannot do it alone, but rather we need a team. [U52, Nurse]

Utilisation of colleagues as resources

Participants reported learning to view their IP colleagues as resources.

…listening to my colleagues and their insights, opinions, ways of reasoning through various scenarios and situations helped me realize how many helpful resources are available to me, such as colleagues, their experiences, examples from the scientific literature etc. [K56, Pharmacist]

The effect of teaching methods on learning

Participants explicitly linked their learning to several teaching methods: (a) grounding and physical set-up, (b) narratives with reflection and (c) case-based reflection exercises (table 4).

Grounding, employing 'check-in' and 'check-out' enhanced participants' 'presence' and a reflective atmosphere in the groups, as did the physical set-up for group sessions with chairs arranged in a circle.

Learning through guided reflection on written narratives was most frequently mentioned as valuable by participants.

[E]veryone has a story, and we need to be mindful of that…Through sharing our reflections and stories – I have been able to see that we all have similar fears and similar goals and we have gained respect and appreciation for each other and our roles … [L12, Nurse]

Finally, participants reported that case-based reflection exercises, similar to Balint groups,[36] enhanced empathy and understanding of others.

DISCUSSION

Main findings

Our qualitative study at five US academic health centres examined in depth the perspectives and experiences of IP faculty leaders who completed a programme aimed to optimise their capacity to function effectively in today's complex health systems. We examined the impact of our previously well-evaluated, widely applied longitudinal faculty development in humanism programme[18 21 22] newly adapted for IP learners (table 1). Analysis of participants' reflective writings overwhelmingly uncovered recurrent themes pertaining to IP relationships and relational learning.

As illustrated by their quotations, participants frequently reported that learning affected the whole person often with cognitive and emotional impacts as well as changes in values and behaviours. We refer to these multiple impacts as deep learning. Participants described strengthening attitudes and values that influence the quality of interactions, including empathy for others and oneself, curiosity about and openness to others, capacity for trust, and equitable respect toward team members.[37 38] This depth of learning may have helped participants to eliminate or

Table 4 Participants' perspectives on the effect of teaching methods on learning and interprofessional collaboration

Teaching method	Representative quotations
Grounding, including 'check-in' and 'check-out'	Importance of grounding, checking in, being present. Each session started off with a 'check-in' which was informal and not scripted. Group members took time going around and talking about everything from what their day was like to the personal losses they had recently suffered and the happy moments they had recently enjoyed. This was so important for making sure everyone was 'present' in the session and grounded. At the end, we also went around and 'checked out' - sometimes reflecting aloud on what we had learned and at other times sharing in one word how the session had made us feel. This was an important closure for all of us and a way to enter back into the world outside. [K57, Nurse]
Physical set-up	I really value the physical set up of the fellowship: small group, in a circle, facing each other and interacting with each other. I liked how this took the focus and attention off the 'presenter' and flattened the hierarchy, allowing everyone to be both presenter and participant, learner and teacher. [K10, Physician]
Narrative reflection	I learned about the benefit of appreciative inquiry narratives, the value of knowing other team members as individuals as well as professionals, and the overall value of compassion in medicine. Until writing my own appreciative inquiries I don't think I had a full understanding of my own strengths and weaknesses. [L16, Physician] Sharing our 1st reflections was powerful. We learned of F's serious heart condition as a young man and how this impacted his perspective and perceptions of the health field. Again - everyone has a story, and we need to be mindful of that. [L12, Nurse] In the narrative exercise where we imagined an incident through the patient's eyes, the writing itself created a pause that regular thinking/reflection might not allow. [K67, Physician]
Case-based reflection exercises	I appreciated this activity because it opened my eyes to the countless perspectives and feelings that can come up in difficult situations. It allowed for processing, vulnerability, and new understanding of a difficult situation. I think it is a great way to allow people to bring up fears and thoughts through voice of another. It also strengthened my empathy, allowing me to find that "kernel of compassion" that may be hard to find in the moment. [K10, Physician]

reduce deep-seated IP biases, ingrained assumptions and conflicts that interfere with collaborative care and patient safety.[3 39]

Relational themes viewed as competencies and their levels of learning

Our major findings revealed relationships and relational learning as the overarching themes. We categorised our study's themes as competencies to be applied in teaching. In figure 1, tables 2 and 3 and below, we summarise the competencies identified by listing our qualitatively derived themes by level of learning—intrapersonal, interpersonal or systemic (organisational/community)—using a social ecological model taken from public health and classroom studies[40 41]:

1. Intrapersonal (within oneself): reflective capacity/self-awareness, becoming aware of biases, empathy for self and mindfulness.
2. Interpersonal (interacting with others): listening, understanding others' perspectives, appreciation and respect for colleagues, and empathy for others.[3 10 37 38]
3. Systems level (interacting within the system): resilience, conflict engagement, team dynamics and utilisation of colleagues as resources.

Our data-derived relational themes viewed as competencies partially overlap with competencies described in two small qualitative studies.[42 43] Our list of competencies, which should evolve and expand with experience, provides areas of focus to study educational outcomes and improve IP/team relationships, collaboration and patient-care delivery.

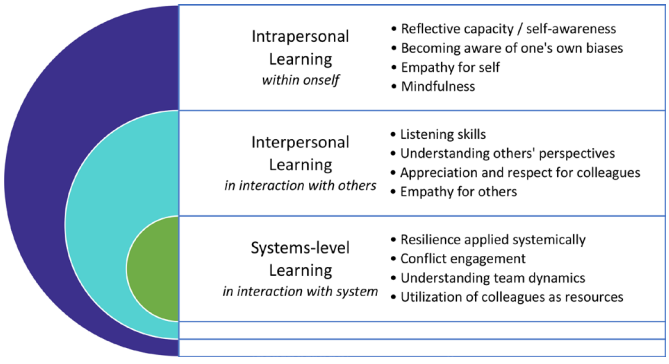

Figure 1 Summary of relational competencies at each level of learning identified from our study's themes. Derived from thematic qualitative analysis of 52 reflective essays from 26 interprofessional participants at 5 university-based US academic health centres.

Congruence with IP competency frameworks

We undertook a comprehensive review of international IP competency frameworks and areas of alignment vis a vis our findings on relationships and relational learning among IP faculty. Table 5 compares international IP competency frameworks and domains and shows congruence with our findings.

Reflective practice features clearly in the Australian,[44 45] UK[46] and Japanese[47 48] IP frameworks (table 5). Teamwork

Table 5 Interprofessional competency frameworks and congruence with relational learning competencies

Interprofessional competency framework	Framework elements/core domains	Competencies/capabilities/domains
Australia IP Capability Framework (Curtin University)—2011[44 45]	► Client-centred service ► Client safety and quality ► Collaborative practice	► Communication ► **Team function** ► Role clarification ► **Conflict resolution** ► **Reflection**
United Kingdom IP Capability Framework (CUILU)—2004[46]		► Knowledge in practice ► Ethical practice ► IP working ► **Reflection** (learning)
Japan IP Competency Framework—2018[47 48]	► Patient centred/client centred/family centred/community centred ► IP communication	► Role contribution ► **Facilitation of relationship** ► **Reflection** ► **Understanding of others**
Canada Canadian National IP Competency Framework (CIHC)—2010[49]	IP collaboration	► IP communication ► Patient-centred/client-centred care ► Role clarification ► **Team functioning** ► Collaborative leadership ► **IP conflict resolution**
United States Core Competencies for IP Collaborative Practice, (IPEC)—2016 Update[8]	IP Collaboration	► Values/ethics for IP practice ► Roles/responsibilities ► IP communication ► **Teams and teamwork**

Bolded competency domains are congruent with our themes of relational learning, which we designated also to be relational competencies.
CIHC, Canadian Interprofessional Health Collaborative Working Group; CUILU, Combined Universities Interprofessional Learning Unit; IP, interprofessional; IPEC, Interprofessional Education Collaborative Expert Panel.

is featured in all. The Japanese framework further focuses on reflection, with facilitation of relationship and understanding of others given equal prominence as peripheral domains. In addition, the Australian and Canadian[49] models include domains of conflict resolution among team members. Another model (ASPIRE)[50] mapped US IPEC framework competencies[8] to content areas for a train-the-trainer IP team development programme. They identified three content areas—practical tools, leadership and relational factors—and specific ways to teach and assess these.

Our IP faculty development programme combined critical reflection with experiential learning. Our summary of relational learning competencies derived from our themes (figure 1) includes reflection, yet at a deeper level—that of critical self-reflection. Mezirow[51] defines critical self-reflection as '… reassessing the way we have posed problems and reassessing our own orientation to perceiving, knowing, believing, feeling, and acting… . Critical reflection is not concerned with the how or the how-to of action but with the why, the reasons for and consequences of what we do.' (Mezirow, p13).[51]

Critical reflection in the context of our themes included becoming aware of one's own biases and assumptions, understanding others' perspectives and empathy for self, and others, all requiring self-awareness and insight. Other themes identified in our study are closely linked to the IP frameworks. Relational learning broadens the focus on team behaviours and informational interactions to include appreciation and respect for colleagues, empathy for others, positive conflict engagement and deeper learning and understanding within oneself and in relationships with team members.

Relationships are foundational. Creating healing contexts relies on both the caring attitudes of clinicians and the '… collective relational capacities of interprofessional healthcare teams'.[52] We believe enhancing the capacity for relationships among IP team members developed through relational learning strategies should receive more attention and priority in competency domains. We suggest that our findings regarding relationship-related competencies are not only congruent with existing IP frameworks (table 5) but provide clear and cogent examples of how the IP frameworks could be extended to foster deeper understanding within intraprofessional, IP and systems level relational learning (figure 1).

Learning methods

Our study shows not only what participants learnt but also how they learnt in the adapted IP curriculum. We used synergistic methods[18 19 38] to achieve the deep relational learning described by participants. Longitudinal design (two times per month sessions over 9 months) spaced out the small group sessions, allowing participants to reflect on their learning in their usual working environments. They would then share their reflections in the group

during subsequent sessions, thereby deepening everyone's experiences.[38]

Our curriculum's inclusion of deep critical self-reflection linked to related experiential learning synergistically expanded learners' perspectives by anchoring new perspectives in relevant behaviours (table 1).[18 19 38] We encouraged participants to reflect on their personal narratives and difficult cases. In responding to these reflections, facilitators modelled empathy, curiosity, appreciation and understanding as norms for their entire group. This process over time built interpersonal values, group cohesion and trust and, importantly, added emotional depth to learning. Centering exercises enabled participants to begin each group with a mindful, reflective presence. Years of experience[53 54] have taught us that this facilitator-guided group formation process creates the safety that allows participants to gain insight from their deep self-reflection with group responses to their narratives. Based on our experience as described in previous publications,[18 38] we attribute maximum success of our curriculum to its consistently mindful, appreciative and reflection practices that permeated all sessions once the groups had fully formed.

Addressing bias

We uncovered explicit and implicit biases about how healthcare professionals view and relate to one another, through narrative sharing, self-reflecting and providing empathy in our intentionally formed, non-threatening learning environment (table 2). Some participants described inwardly reformulating biases through group discourse and reflection to provide a more generous view of those in other professions. Application of this learning process could potentially help to address implicit bias that remains moderately strong in US healthcare professionals and contributes to disparities in health outcomes.[55–60]

Expanded professional identity

Participants expanded their communities of practice as our diverse members worked together to produce shared knowledge and common objectives.[61] During group discourse, they considered the viewpoints, values and expectations of the other professionals, and they expressed genuine respect and empathy for, curiosity about and understanding of the viewpoints of their IP colleagues.[62] These observations are attributes of professionals who are moving toward Kegan's highest stages of professional identity[63–65] and could also be interpreted as elements of an IP identity.[62] We postulate that these elements, if sustained, prepare faculty for high-level IPC, as they foster interpersonal cohesion, role clarity and humanistic relationships.[6]

Comparison with existing studies

The current study extends prior work on IP team-based education, and unlike previous publications, provides a study of the learning achieved through intensive, highly reflective and longitudinal faculty development, rather than a course evaluation. Earlier work citing course evaluations applicable to specific settings also included aspects of relational learning. IP learners in a paediatric palliative care fellowship described meaningful relationships with one another and learning to see the perspectives of their colleagues.[66] Evaluations of team-based learning experiences[67] and IP simulation courses on difficult conversations in healthcare reported improved appreciation of IPC, enhanced teamwork and openness to challenging assumptions and biases regarding colleagues.[68–70]

Of longitudinal programmes, enrolees in a multiyear facilitator training programme of the Academy of Communication in Healthcare described expanded capacity to help others following personal introspection on involvement in helping relationships.[71 72] Studies of our previous physicians' Humanistic Curriculum[18] compared small-group participants at 13 institutions to matched controls using a validated questionnaire. Data revealed significantly enhanced humanistic teaching and role modelling displayed by the participating physicians.[18–20] Learning was oriented toward humanistic teaching and role modelling as opposed to IP relational learning, which became the focus of our participants' reflection as described in this current study of IP learning using our revised curriculum.

Strengths and limitations

This study has several strengths. While IP courses are common and most rely on didactic approaches, we created a longitudinal programme for faculty leaders that fostered deep, relational learning. Our results provide insights into the power of relational learning to enhance IPC and teamwork. The data were collected and analysed by experienced qualitative researchers. Each transcript was discussed by five researchers who identified themes by consensus. We summarised our themes as relational competencies that may catalyse more impactful collaboration and teamwork by providing areas of focus for relationships, teaching and patient care. In terms of practical applications and impact, increasing attention to relationships and relational competences and integration of these into IPE/C fosters improved relationships with patients, families and colleagues[52]; improves care coordination,[6 43] patient safety and outcomes[3]; and may provide organisational benefits by enhancing a culture of caring.[4]

Regarding limitations, voluntary participation may have led to selection bias. All worked in academic health centres and may not fully reflect the attitudes of non-academic clinicians. However, our multisite study included five institutions from various regions across the USA and may provide a reasonable picture of similar professionals. The small group approach might produce too few graduates to impact IPC at a large institution. As we did with our Physician Humanistic Faculty Development Programmes,[18] we plan to repeat the small group Interprofessional Faculty Development Programmes additional times to achieve a critical mass of trained IP leaders from participating institutions.

Future research

We are currently analysing new data from four institutions to gain a more detailed understanding of our programme's impacts on its participants' professional identities and the shifts in relational values and perspectives that we observed in this study. We also plan future follow-up studies to assess durability of the relational learning, and gain understanding of the systems level applications and personal and work satisfaction achieved by programme completers. To develop a comprehensive approach to IP learning, collaboration and patient care, a more complete picture of relational learning in IP settings is needed. Therefore, future studies should explore IP relational learning at all levels (students, residents, faculty), and in a variety of settings.

CONCLUSIONS

Our study uncovered meaningful changes in participants' ingrained attitudes and shifts in relational values and behaviours associated with completing the curriculum. Our findings suggest that attention to relationships and relational learning among IP faculty leaders could play a vital role in mitigating bias and assumptions, increasing self-reflection, understanding others' perspectives and enhancing IPC, teamwork and practice. Importantly, our results underscore that achieving this deep relational learning necessary to catalyse more impactful IPC among faculty leaders is an achievable goal using our described methods and approach with local facilitation available at many healthcare institutions.

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Acknowledgements The authors wish to thank the healthcare professionals who participated in this programme. We thank Janet Hafler, EdD (Yale University), for her generous contributions, Richard Frankel, PhD (Indiana University), for his thoughtful review and wise advice and J Richard Pittman, MD (Emory University), for volunteering his expertise in data collection. We appreciate the contributions of the following local cofacilitators: Melissa Atwood, PharmD (University of Minnesota), Dana Dunne, MD (Yale University), Janet Fraser Hale, PhD, RN, FNP (University of Massachusetts), Kara Myers, CNN, MS (University of California at San Francisco), and Heather Walter-McCabe, JD, MSW (Indiana University). We gratefully acknowledge Deborah Navedo, PhD, CPNP, FNAP, CHSE-A (Harvard Medical School), for contributing to make our curriculum suitable for IPE/C. We are grateful to the National Academies of Practice for awarding part of this work the National Academies of Practice Interdisciplinary Group Recognition Award in 2019.

Contributors WB conceived the paper with EAR, CC, PW, CA, and all were involved in further development and focus of the research. All authors participated with WB in conceptualising the study design and questions used. CC, PW, DKL and DH contributed to the data collection. WB coordinated a team approach with EAR, CC, CA and PW to analyse and interpret the qualitative data. EAR and CC created the summary of relational competencies using levels of learning. EAR and WB drafted the manuscript with contributions from CC, CA, PW, DKL and DH. All authors commented on the initial drafts, revisions and read and approved the final version. WB is the guarantor of the article.

Funding This work was supported by the Josiah Macy Jr. Foundation, grant B16-09.

Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, conduct, reporting, or dissemination plans of this research.

Patient consent for publication Not applicable.

Ethics approval This study involves human participants and was approved by Institutional Review Boards at Emory University (#87756, expedited review) (coordinating site), Harvard University (exempted), University of California at San Francisco (exempted), University of Minnesota (exempted), Indiana University (#11722, expedited), University of Massachusetts (exempted), Yale University (exempted). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request. We will share qualitative data on reasonable request.

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