

Original Paper

Teaching and Assessing Soft Skills for Health and Education Professionals: A Scoping Review

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Abstract

Soft skills are a collection of abilities instrumental to one being a successful professional. Soft skills are knowing why, what, when, and where to perform specific technical, hard skills. Traditionally, universities and other professional training providers have focused on teaching hard skills, relying on graduates to learn necessary soft skills on the job or through personal experiences. With more professional training requiring tertiary education and less work experience, a skills gap has developed between labour markets and professional training providers. A scoping review was conducted to answer two research questions: How are soft skills conceptualised and taught to health and education professionals? How are soft skills assessed for health and education professionals? The PAGER framework was utilised to present and synthesise the scoping review results. Eight themes emerged from the patterning analysis and data synthesis: Lack of definitions of soft skills; What soft skills are taught; Methods of teaching soft skills; Curriculum: Embedded vs. stand-alone courses; Use of digital tools; Assessment of soft skills; Variation of assessment tools; Limited regard for cultural competency, diversity, equality, and inclusion. These themes are discussed in relation to advances, gaps, evidence for practice, and research recommendations.

Keywords

soft skills, training, assessment, health, higher education

1. Introduction

Soft skills in the workplace are instrumental to success (Cimatti, 2016). Soft skills can be conceptualised as a collection of skills and abilities about knowing why, what, when, and where to perform specific capabilities related to the execution of technical competencies or domain-specific knowledge. Hard skills, conversely, are the specific capabilities required to perform a particular job.

Traditionally, universities and other professional training providers focus on teaching hard skills, resulting in a skills gap between labour markets and professional training providers that has been filled by industry (Cimatti, 2016). Industries such as business, IT and engineering, where factors such as return on investment and meeting the bottom line are paramount for business success, have shown increased research on soft skills.

Soft skills in the health and education professions are less prevalent in research. Research into teaching soft skills for medical and nursing professions is starting to emerge but very little in other health professions. The education field presents an even greater paucity of literature. Although many countries have undergone, and continue to undergo, reforms to include soft skills as part of the education curriculum, evidence is lacking into how soft skills are taught to educators responsible for teaching them to others.

The current study is a scoping review examining existing research into how soft skills are conceptualised and taught to health and education professionals. These professions are considered together because of the similar roles they play in public sector multidisciplinary teams with children, young people, and adults; and because they are often employed by the same fields

A scoping review method is appropriate because research is still emerging on how soft skills are taught and assessed for health and education professionals. This is in agreement with Arksey and O'Malley's (2005) purposes for carrying out a scoping review (i.e., to examine the extent and reach of research activity in a particular field). The purpose of this scoping review is to examine existing research into how soft skills are conceptualised and taught to health and education professionals. It will systematically map current research, identify any existing gaps in how soft skills are taught and assessed for health and education professionals, and present findings which will provide useful information beyond identification of gaps (Bradbury-Jones & Aveyard, 2021). The following research questions were formulated:

- Q1: How are soft skills conceptualised and taught to health and education professionals?
- Q2: How are soft skills assessed for health and education professionals?

2. Method

2.1 Search Strategy

The scoping review protocol was designed using the Preferred Reporting Items for Systematic Reviews and Meta-analysis extension for Scoping Reviews (PRISMA-ScR) (Daly et al., 2022). Articles included in the scoping review needed to address teaching and/or assessment of soft skills to health and/or education professionals. Peer-reviewed articles written in English were included in the review. No beginning date limitations were applied. Grey literature such as magazines, trade journals, and student theses were not included.

A wide range of information sources was used to capture publications from both health and education fields. The databases were searched until December 2021. For a full list of databases see Daly et al.,

2022.

An *initial* search was conducted on 27th January 2021 (Table 1) to identify existing reviews on soft skills, become familiar with the volume of literature in both health and education, identify key terms, and develop a search strategy (Booth et al., 2012). The initial search yielded a large number of unrelated items as well as a number of review articles about soft skills (Chaka, 2020; Dalaya et al., 2015; Murray et al., 2018; Touloumakos, 2020). The search terms were refined to: “soft skills training”; “training soft skills”; “teaching soft skills”; “soft skills teaching”, to more accurately capture literature that addressed both course-based and on-the-job training. The modified search terms were used to identify how soft skills are taught and assessed for health and education professionals as part of their professional and post-qualification training. The search strategy was developed by the first author after consultation with the university librarian. It was reviewed and agreed upon by all authors.

Table 1. Initial Search Strategy for SCOPUS

#	Query
S1	“soft skills”
S2	“soft skills” OR “interpersonal skills” OR “social skills” OR “compassionate care”
S3	(“soft skills” OR “interpersonal skills” OR “social skills” OR “compassionate care”) AND (teach* OR train*)
S4	(“soft skills” OR “interpersonal skills” OR “social skills” OR “compassionate care”) AND (teach* OR train*) AND (health* OR education OR nurs*)
S5	“soft skills training”
S6	“soft skills development”
S7	S5 & S6

Following the *final* search, items yielded from each database were exported into Zotero and duplicates removed. All titles and abstracts were screened by the first author against the inclusion criteria. Approximately one third of excluded titles and abstracts were independently reviewed against the inclusion criteria by the second and third authors as well as independent students in the department. Any disagreements were resolved through discussion and consensus. This process was repeated for full texts. All three reviewers read the final articles included in this review.

2.2 Data Charting Process

A data charting form to determine which variables to extract was developed by the first author, reviewed by the other authors and extraction variables adjusted following discussion. This process was guided by the Joanna Briggs Institute Reviewer’s Manual (Peters et al., 2020) and the PAGER framework (Bradbury-Jones et al., 2021). The revised data extraction tool can be seen in Table 2.

Table 2. Data Extraction Tool

Evidence Source Details and Characteristics	
Citation details (author/s, date, title, journal, volume, issue, pages)	
Source:	Research/Review/Thesis/Conference/Book/Other
Country	
Cultural considerations	
Context- Field/Sector	Health/Education
Participant information	Students/Professionals
Role/Profession	
Current Practices identified	
Location	Tertiary/On the job
Intervention	
Methods/study design	
Specific soft skills discussed	
Soft skills defined	General/Individual
How soft skills taught	Embedded/Stand alone
How soft skills assessed	Self-assessed/Assessed by others
Future research considerations identified by author	

The first author extracted the data for all included sources. The second and third authors independently extracted data for 13 randomly selected sources each. Thus, calibrating approximately half of the total sources. Results from each extraction were checked for consistency. Any inconsistencies in the charting were resolved through discussion between all three authors until consensus was reached. Given the nature of this scoping review critical appraisal of the sources was not required, but limitations and gaps identified by the sources were documented.

3. Result

The final search of electronic databases and review article references yielded 5874 citations. After removing duplicates and unrelated titles, a total of 3022 citations remained. Based on title and abstract, 2606 references were excluded, with 416 full-text references assessed for eligibility. Of these, 386 were excluded for the following reasons: 224 did not address soft skills for health or education professionals; 94 did not teach or assess soft skills; 36 were not peer reviewed; and 32 full texts were not retrievable. A forward and backward citation search of articles meeting inclusion criteria was also conducted. This

process yielded a further 10 articles that met the criteria and were included in the final 48 articles in this review, as illustrated in Figure 1.

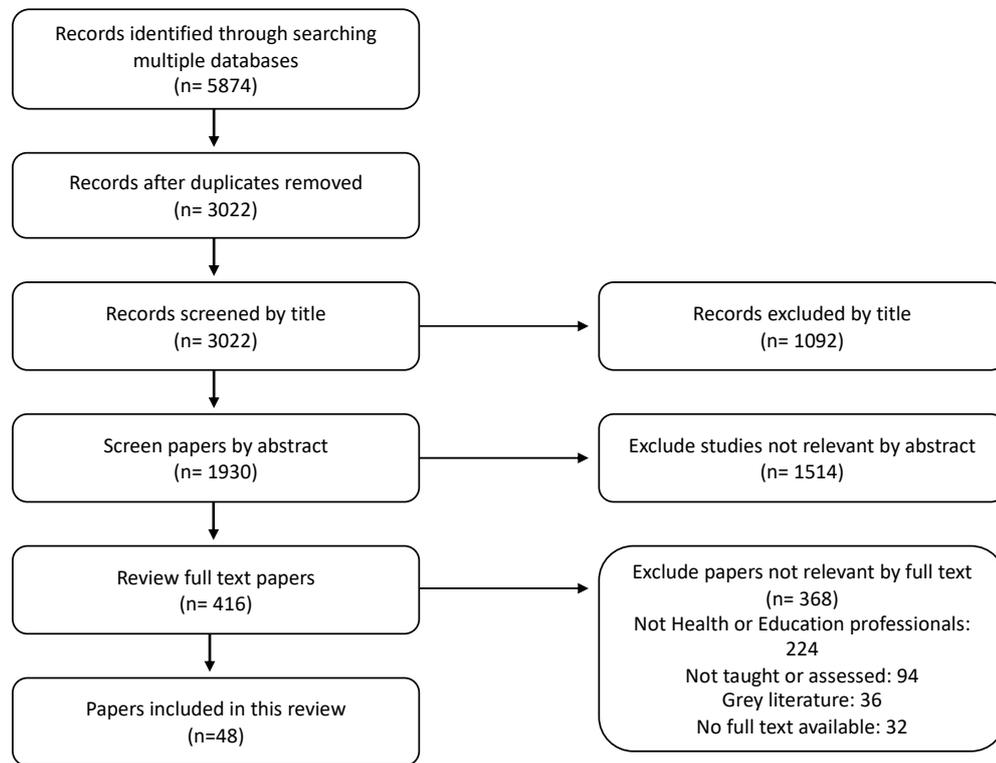


Figure 1. PRISMA Diagram for the Inclusion of Articles for Analysis

Individual characteristics of included articles can be viewed in the patterning chart, Table 3. Of the 48 articles reviewed, 37 were in the health sector and 11 in education. Twenty-five articles included students as participants and 14 included professionals and/or faculty staff who provide training. Most soft skill training and/or assessment occurred in tertiary settings, with only 12 articles addressing soft skills in the workplace. Almost all (n=10) articles addressing soft skills for education professionals were in a tertiary setting. The one article that did not specify the location was a review article (Coll, 2002).

Included articles were 34 original research, eight reviews (including two literature reviews), four conference articles, and two programme descriptions. In terms of the research geographical representation, 18 were from Asia, 13 from North America, nine from Europe, four from Australia/Oceania, and two each from Africa and South America. Although the earliest article included in this review was published 20 years ago (Coll, 2002), almost half (n=20) of the reviewed articles were published in the last two years.

Table 3. Patterning Table of Characteristics of Individual Sources

Article	Sector		Participant information		Location		Specific SS discussed	How taught		How assessed		Cultural Considerations
	Health	Education	Student	Professional	Tertiary	On the job		Embedded	Stand alone	Self-assessment	Evaluation by other	
Coll et al. (2002)		✓			✓			✓			✓	
Bergh et al. (2006)	✓		✓		✓		✓	✓				
Cziraki et al. (2008)	✓			✓		✓	✓		✓	✓		
Ross et al. (2011)	✓			✓		✓			✓		✓	
Maschuw et al. (2011)	✓		✓		✓		✓		✓	✓		
Nor et al. (2011)	✓		✓		✓		✓		✓	✓		✓
Minden (2013)	✓				✓			✓				
Deptula & Chun (2013)	✓						✓	✓	✓	✓	✓	
Kuthy et al. (2013)	✓					✓				✓		
Gonzalez et al. (2013)	✓				✓		✓	✓				
Gade & Chari (2013)	✓		✓		✓		✓	✓				
Conkey et al. (2013)	✓		✓	✓	✓		✓		✓	✓		
Lau & Wang (2014)	✓		✓		✓		✓		✓	✓		
Treem Guerin (2014)	✓							✓				
Abu Kasim et al. (2014)	✓		✓		✓		✓	✓				
Ngang et al. (2015)		✓		✓			✓	✓				
Hassan et al. (2015)		✓						✓				
Annamalai et al. (2015)	✓		✓		✓		✓	✓				
Charoensap-Kelly et al. (2016)	✓			✓		✓			✓	✓		
Singh et al. (2017)	✓			✓			✓		✓	✓	✓	

Article	Sector		Participant information		Location		Specific SS discussed	How taught		How assessed		Cultural Considerations
	Health	Education	Student	Professional	Tertiary	On the job		Embedded	Stand alone	Self-assessment	Evaluation by other	
	Schutt et al. (2017)	✓								✓		✓
Sagorika & Hasegawa (2018)	✓			✓		✓			✓			
Ibrahim et al. (2018)	✓		✓		✓				✓			
Center (2018)	✓			✓		✓	✓		✓	✓		
Giussi Bordoni et al. (2019)	✓		✓			✓	✓		✓			
De Pietro et al. (2019)		✓	✓		✓		✓			✓		
Bhagat et al. (2019)	✓		✓		✓	✓	✓		✓			
Bastos et al. (2019)		✓	✓		✓			✓				
Sidebotham et al. (2020)	✓		✓		✓		✓		✓			
Morrell et al. (2020)	✓		✓		✓				✓			
Meiners & Wisdom (2020)	✓		✓		✓	✓	✓	✓			✓	✓
Mailool et al. (2020)		✓		✓	✓		✓	✓				✓
Jardim et al. (2020)		✓	✓		✓		✓			✓		
Imwattana et al. (2020)	✓		✓				✓	✓		✓	✓	
Dmitrenko et al. (2020)		✓	✓		✓		✓	✓			✓	
Cham et al. (2020)	✓		✓		✓		✓		✓			
AlHouli & Al-Khayatt (2020)		✓	✓		✓		✓			✓		
Sharma et al. (2021)	✓			✓		✓	✓		✓	✓		
Abraham et al. (2021)	✓			✓		✓	✓		✓			

Article	Sector		Participant information		Location		Specific SS discussed	How taught		How assessed		Cultural Considerations
	Health	Education	Student	Professional	Tertiary	On the job		Embedded	Stand alone	Self-assessment	Evaluation by other	
	Bajjaly & Saunders (2021)	✓		✓		✓		✓	✓			
Continisio et al. (2021)	✓		✓				✓	✓				✓
Ghimouz et al. (2021)	✓						✓		✓			✓
Haseeb et al. (2021)	✓		✓		✓		✓			✓		
Kniaz & Chukhno (2021)		✓	✓		✓		✓			✓		
Lluch et al. (2021)	✓		✓		✓		✓		✓	✓		
Maren et al. (2021)		✓	✓		✓		✓	✓		✓		
Pang et al. (2021)	✓		✓			✓	✓		✓			✓
Plotzky et al. (2021)	✓								✓			

Addressing the first research question “How are soft skills *taught* to health and education professionals?”, 42 of the 48 articles included in this review discussed this. Seven of these covered soft skills training for education professionals, 35 were taught in the health sector. Addressing the second research question “How are soft skills *assessed* for health and education professionals?”, 26 articles discussed this. Nineteen covered assessment of soft skills for health professionals, and the remaining seven assessing the soft skills of education professionals. Twenty-two articles covered both teaching and assessment of soft skills.

Thirty-four of the reviewed articles discussed *specific* soft skills. These can be seen in Figure 2. The remaining articles discussed soft skills in general terms without highlighting specific ones. The top ten soft skills discussed in the reviewed articles were Communication, Teamwork, Interpersonal/social skills, Problem solving, Self-management, Critical thinking, Life-long learning, Leadership, Professional ethics and morals, and Information and technology management skills. Communication was most discussed, with Ability to listen, Staff management, Conflict resolution, Commitment to diversity, Equality and inclusion, Employability, Entrepreneurial skills, and Cultural competency discussed least. Cultural competencies and entrepreneurial skills were only mentioned once. Only ten articles considering specific soft skills provided a definition beyond the general for them.

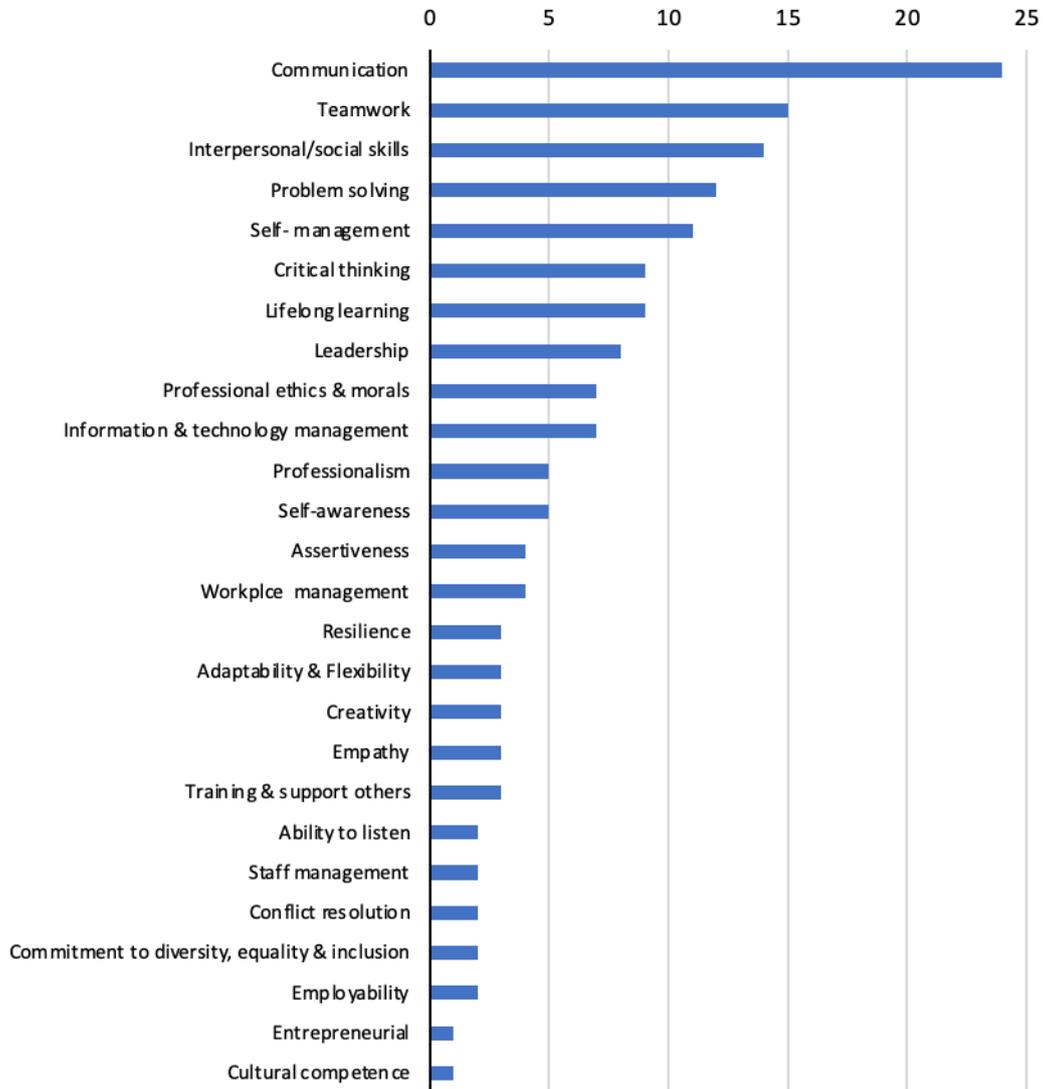


Figure 2. Specific Soft Skills Considered by the Reviewed Articles

Twenty-six of the reviewed articles assessed soft skills. Most assessment tools relied on self-assessment ($n=16$). Only three reviewed articles used both self-assessment and observer-assessment of the soft skills. Most observers were trainers or supervisors. One article included feedback from clients, peers, supervisors, and self-assessment as part of the assessment method.

It should be noted that the discussed soft skills were not necessarily those that were taught and/or assessed. Figure 3 depicts how soft skills were taught to health and education professionals: 19 of the reviewed articles integrated soft skills in training curricula; 24 taught soft skills through specific, targeted courses. The most common methods of teaching soft skills were discussion, simulations, hands on activities, group work, case studies, and providing feedback. Less common teaching methods were goal setting, escape room, intensive training, restorative practice, peer-evaluations, and extra-curricular activities.

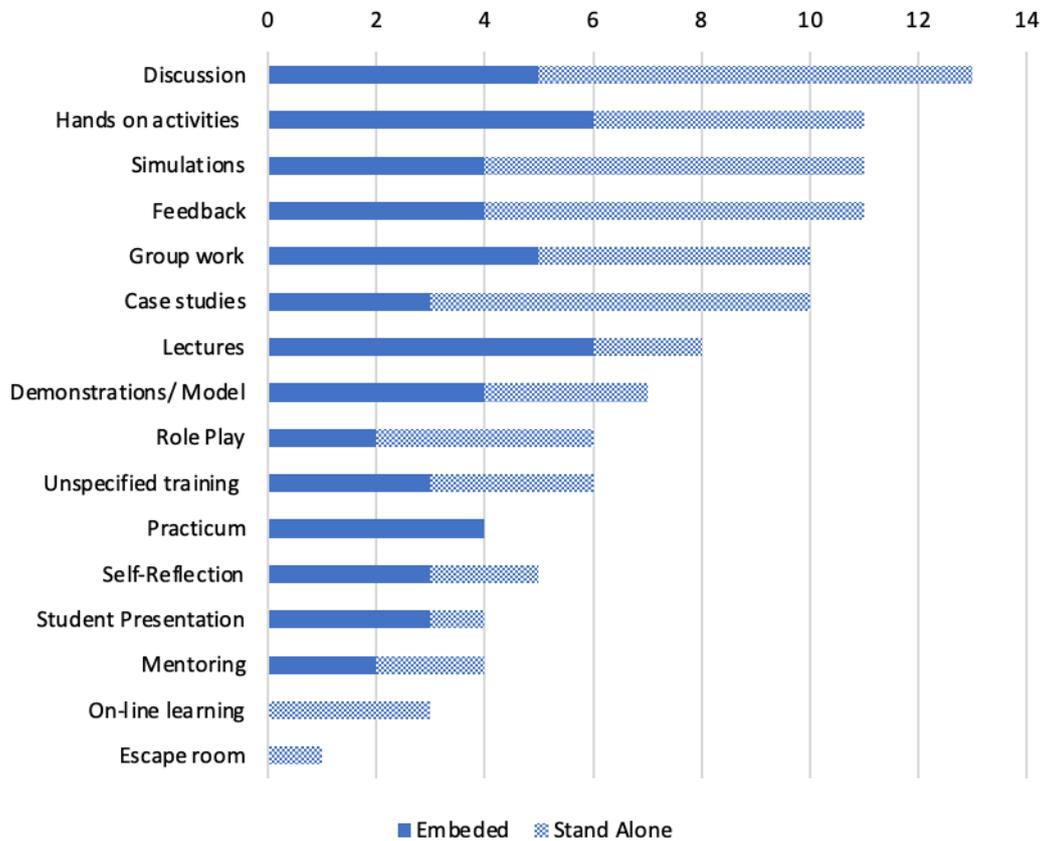


Figure 3. Methods of Teaching Soft Skills in the Reviewed Articles

Most assessment tools were created by authors, with only eight articles using a referenced scale. Two reviewed articles published results of a measurement tool validation. There were no commonalities of referenced scale or assessment tool between articles that used them.

The synthesised results of the reviewed articles can be viewed in Table 4 in relation to the two research questions. The PAGER framework (Bradbury-Jones et al, 2021) was utilised to summarise key themes that arose from this review.

Table 4. Synthesised Findings Using PAGER Framework

Pattern	Advances	Gaps	Evidence for Practice	Research Recommendations
1. Definitions	Agreement on <i>general</i> definition of soft skills but <i>not specific</i> soft skills. Attributes of soft skills listed rather than definitions.	A need for health and education sectors to have clear operational definitions.	Both trainers and trainees need clear operational definitions of soft skills. Both trainers and trainees will know what is being taught and assessed.	Conduct research to develop operational definitions.
2. Which soft skills?	Commonalities in the top	No sector agreement as to	Need for trainers and trainees to understand which soft	Conduct research to identify which

Pattern	Advances	Gaps	Evidence for Practice	Research Recommendations
	ten soft skills reported.	which soft skills are most important.	skills are most important within their sector.	soft skills are most important within health and education sectors.
3.	Methods of teaching	Paucity of empirical evidence demonstrating specific methods that are most effective.	Methods that emulate scenarios likely faced in the workplace are most effective. Opportunities to practice and receive feedback on performance are key to acquiring new skills.	Conduct research to evaluate effectiveness of training methods in teaching soft skills.
4.	Embedded vs stand-alone courses	Evidence for using embedded and stand-alone soft skills training. Some soft skills are easier to incorporate into the curriculum. Others require more specific training programmes.	Acknowledging the shift needed to incorporate soft skills and hard skills training into the curriculum. Faculty staff may not possess the necessary soft skills themselves, thus less effective in teaching them.	Evidence for both stand-alone and embedded training. More resources needed for soft skills to be embedded into the curricula. Resources needed for trainers to develop the necessary soft skills themselves. Conduct research to evaluate effectiveness of embedded versus stand-alone soft skills training. Conduct research to explore which soft skills are best taught using which method.
5.	Digital tools	Emerging evidence that digital tools can be effective in teaching some soft skills. Emerging evidence comparing online and in-person training delivery, and the use of blended learning environments.	The growth of digital technologies has enabled greater use in teaching some soft skills. Artificial intelligence emerging as a tool to provide live feedback to students.	Blended learning may be appropriate in teaching soft skills. Digital simulations may be used to practice using soft skills in various scenarios. Training providers should consider investing in digital tools.
6.	Assessment	Assessment relies largely on self-report. Soft skills are viewed as personal attributes, but self-assessment may be appropriate. Evidence for competence-based	Limited evidence for which assessment method is best. Incorporating an observation measure will add to the validity of the assessment method. There is no one universal validated tool to measure soft	Self-assessment is easy to administer, but training providers need to evaluate its reliability. Direct observation should be considered to increase reliability. Conduct research to develop sector and professional competencies. Conduct research to develop and validate tools for measuring soft skill competencies.

Pattern	Advances	Gaps	Evidence for Practice	Research Recommendations
	assessment as a valid and useful tool.	skills.		
7. Varied assessment tools	Evidence of attempts to use published measurement tools when assessing soft skills.	No commonalities found in the assessment tools.	Trainers should consider competence-based measures rather than psychometric inventory scales to assess soft skills.	Conduct research to develop a competency-based measure of soft skills.
8. Culture, diversity, equality, and inclusion	Evidence that different countries are developing their own cultural competencies. Emerging discussion of the need to promote inclusion, diversity, and equality.	A stark lack of consideration for health and education professionals working with individuals from diverse backgrounds. No evidence of how these should be taught.	Trainers should be incorporating cultural competencies that are relevant in their countries/areas of training. Trainees need to be made aware of the need for cultural diversity, equality, and inclusion considerations.	Conduct research to explore the incorporation of cultural diversity, equality, and inclusion considerations into training.

4. Discussion

4.1 Discussion of Themes

Forty-eight articles across health and education sectors were reviewed and the results synthesised using the PAGER framework (Bradbury-Jones et al., 2021). The eight patterns identified (see Table 3) are discussed below.

4.1.1 Definitions

The articles that defined specific soft skills did not demonstrate consensus on definitions, apart from communication skills. There is evident overlap between specific definitions, which may explain the lack of consensus (Chaka, 2020). For example, lifelong learning and information and technology management were defined together, as an ability to engage in independent learning, self-regulation, ability to search for information using various sources, and ability to manage that information (Abu Kasim et al., 2014; Giussi Bordoni et al., 2019; Gonzalez et al., 2013; Ngang et al., 2015). This lifelong learning definition also overlaps with those of self-management (Continisio et al., 2021; Kniaz & Chukhno, 2021; Treem Guerin, 2014). Further overlap occurred between interpersonal skills and empathy, self-awareness, teamwork, and communication (Continisio et al., 2021; Kniaz & Chukhno, 2021; Lluch et al., 2021; Singh et al., 2017; Treem Guerin, 2014).

Critical thinking and problem solving were defined together and individually (Abu Kasim et al., 2014; De Pietro et al., 2019; Gonzalez et al., 2013; Kniaz & Chukhno, 2021; Ngang et al., 2015). Critical thinking is a pre-requisite to engagement in problem solving, where one needs to be able to analyse the situation, select an appropriate solution, implement it, and evaluate the results. Furthermore, professional ethics and morals require one to engage in both critical thinking and problem solving in

relation to ethics and ethical practice (Abu Kasim et al., 2014; Deptula & Chun, 2013; Gonzalez et al., 2013).

Despite overlaps and the pre-requisite nature of some soft skills, there is emerging evidence for definition uniformity. Abu Kasim et al. (2014), De Pietro et al. (2019), Gonzalez et al. (2013), and Ngang et al. (2015) use the same soft skills definitions as provided by the Malaysian Ministry of Higher Education that defines by abilities (i.e., skills that can be acquired). However, they do not identify the competency level required for the soft skills, nor do they stipulate how the soft skills would be displayed.

There is a gap where most of the reviewed articles do not provide specific definitions of soft skills. To be reliably taught and assessed soft skills need to be reliably defined. Operational definitions will provide clear and measurable objectives for both trainers and students of the soft skills to be taught and assessed. Both health and education sectors need to conduct qualitative research to identify and agree on the operational definitions. These should then be developed into sector standards that can be applied throughout one's professional career.

4.1.2 Which Soft Skills?

Across the health and education fields there does not seem to be agreement on which soft skills are most important, apart from communication which is universally agreed as essential. This gap likely stems from the lack of consideration given to soft skills by the health and education sectors when training professionals.

Different sectors will prioritise soft skills they determine are most important. Gonzalez et al. (2013) proposed that entrepreneurial skills, prioritised for business professionals, may be valid in setting up and running a successful dental practice and so may not be applicable to all trainee dentists. Entrepreneurial skills, by definition, require one to take risks in bringing new ideas into the field, this may not be ethical practice for trainee health practitioners. Health and education professionals can pursue the development of this skill independently.

The health and education sectors would benefit from research into the soft skills that are important for graduates to have. These would need to be identified and agreed between tertiary training providers and employers, as well as the sector consumers (e.g., clients, patients, students, etc). Identifying the important soft skills for each field will further support the development of sector standards.

4.1.3 Method of Teaching

The reviewed articles covered teaching strategies embedded in professional training curricula and specifically designed training courses. Despite a move towards active learning and incorporating hands on experiences into the training across both reviewed fields, lectures and group discussions were still widely used, especially in embedded curricula (Bajjaly & Saunders, 2021; Gonzalez et al., 2013; Hassan et al., 2015; Imwattana et al., 2020; Mailool et al., 2020; Meiners & Wisdom, 2020). It is recognised that while lectures are not as effective in engaging students in active learning (Imwattana et al., 2020), it takes time for teaching staff to change the way they deliver material within the tertiary

education structure.

Engaging students in active learning has been attempted through group discussions, hands on activities, group work, case studies, role play and simulation. Some courses have reported using more creative ways for students to engage in active learning (e.g., escape rooms (Morrell et al., 2020), mock trials (Ghimouz et al., 2021), camps (Lau & Wang, 2014), and across faculty group assignment (Cham et al., 2020)).

This review identified a significant gap in the effectiveness of teaching methods for soft skills. Training providers are using resources they currently have to teach soft skills and using ad hoc approaches, without consideration of the effectiveness of the teaching methods. Extensive research is needed to evaluate soft skills teaching methods.

From behavioural literature we do know that an effective way to teach skills is through behaviour skills training-where important components include modelling, role play and feedback. Simulations and role-plays share similar features, where trainees have multiple opportunities to practise the required skill in a controlled environment. Simulations go further, emulating real life situations and providing an element of emersion. Having multiple opportunities to practise skills is important; equally as important is receiving performance feedback. Trainees may be practising skills incorrectly or ones that are not important. Feedback provides information of what learners are doing correctly, and what needs to change in their performance to reach criterion. Although eleven of the reviewed studies used feedback as a teaching method, only six used feedback with simulations or role play (Bhagat et al., 2019; Cziraki et al., 2008; Minden, 2013; Pang et al., 2021; Schutt et al., 2017; Sidebotham et al., 2020).

4.1.4 Embedded vs. Stand-Alone Courses

There is a global shift in higher education to ensure graduates come out with necessary hard skills, as well as being readily employable. A number of the reviewed articles mentioned either national or global reference to competency, employability, or 21st century skill standards (Abu Kasim et al., 2014; AlHouli & Al-Khayatt, 2020; Bastos et al., 2019; Bergh et al., 2006; Cham et al., 2020; Gonzalez et al., 2013; Jardim et al., 2020; Mailool et al., 2020; Maren et al., 2021; Meiners & Wisdom, 2020; Morrell et al., 2020; Ngang et al., 2015; Nor et al., 2011; Schutt et al., 2017; Sharma et al., 2021; Singh et al., 2017; Treem Guerin, 2014).

Nineteen of the reviewed articles incorporated soft skills training into the professional training curriculum, while 24 presented these as non-integrated. The global shift for employability among graduates across both healthcare and education may yield more integration of soft skills into the training curricula. It can be argued that some soft skills, such as written and oral communication and presentation skills, can be incorporated into curricula more easily, and to a certain extent already are. Soft skills such as professional ethics and morals may require their own course as part of professional training (e.g., Mailool et al., 2020). Regardless of how they are delivered, there is an almost universal call for soft skills to be formally taught as part of health and education professionals' training. Despite this, this review identified a reported resource gap, whether it be resource restraints at faculty level or

within the workplace (De Pietro et al., 2019; Gade & Chari, 2013; Hassan et al., 2015; Ngang et al., 2015; Plotzky et al., 2021; Sagorika & Hasegawa, 2018; Schutt et al., 2017; Sharma et al., 2021). Health and education are public service sectors, the lack of resources for training soft skills could be attributed to their lack of resources overall. Investing in resource development especially at the start of professional training may be necessary. This way, necessary soft skill acquisition can commence during training and be further developed in the workforce, rather than solely relying on the work setting for their development.

4.1.5 Digital Tools

There is growing evidence for the use of digital tools in teaching soft skills to health and education professional trainees (Bhagat et al., 2019; Charoensap-Kelly et al., 2016; Conkey et al., 2013; Deptula & Chun, 2013; Giussi Bordoni et al., 2019; Ibrahim et al., 2018; Maschuw et al., 2011; Plotzky et al., 2021; Sagorika & Hasegawa, 2018; Schutt et al., 2017). The use of digital technologies varied from using video models (Bhagat et al., 2019; Charoensap-Kelly et al., 2016; Deptula & Chun, 2013; Sagorika & Hasegawa, 2018) to virtual simulations and live feedback (Conkey et al., 2013; Maschuw et al., 2011; Schutt et al., 2017).

Giussi Bordoni et al., (2019) outlined a blended model of teaching, with soft skills taught through online modules and a four-hour face-to-face component. No evaluation of the teaching method was provided. Charoensap-Kelly et al., (2016) went further and compared the online versus face-to-face methods of soft skills training. The authors reported that the face-to-face group demonstrated higher levels of comprehension and behaviour change, compared to the online learning group. With the current global pandemic environment, blended teaching of soft skills may be appropriate to consider. However, sometimes face-to-face teaching is not an option as highlighted by Sagorika and Hasegawa (2018) and Sharma et al. (2021), where they taught skills to health workers in remote locations in India. Both relied solely on remote digital delivery of the soft skills training modules. Perhaps not the most effective way of teaching, but it may be all that is available.

Other reviewed articles take digital tools development further, with digital simulations to train both hard and soft skills (Maschuw et al., 2011; Plotzky et al., 2021; Schutt et al., 2017). Although continuous development of virtual and artificial intelligence technologies is making tools more accessible, the upfront cost of developing them is high. More research is needed around the effectiveness of digital tools in teaching soft skills to health and education professionals, especially tools that emulate real life scenarios and provide immediate feedback.

4.1.6 Assessment

The second aim of this review was to identify how soft skills are assessed for health and education professionals. Most of the assessment tools in this review relied on self-report. Seven reviewed articles relied on assessment by others (Coll et al., 2002; Dmitrenko et al., 2020; Ghimouz et al., 2021; Pang et al., 2021; Ross et al., 2011; Schutt et al., 2017) and three used both self-assessment and assessment by others (Deptula & Chun, 2013; Imwattana et al., 2020; Singh et al., 2017). The reliability of self-report

and self-assessment is always questionable. With self-awareness and self-management having been identified as soft skills themselves, individuals that have not developed these may be under or over reporting on self-report measures.

Although criterion or competency measures with direct observation would be ideal and were reported to be used (Deptula & Chun, 2013; Pang et al., 2021; Ross et al., 2011), the resources required are not always feasible. It is also important to consider that competencies for various health and education professionals differ. Research needs to consider developing professional sector standards that use valid and reliable measures when assessing soft skills.

4.1.7 Varied Assessment Tools

A variety of soft skill assessment tools were used in the reviewed articles. Self-assessment was the only agreed measure available for trainees, trainers, or organisations. Of the reviewed articles, most used some sort of rating scale, which were either unvalidated previously published scales or idiosyncratic author created scales. There were no same scales used in the reviewed articles, highlighting the lack of sector standards and agreement.

Articles using previously published rating scales did not have agreement on what skills they were measuring and focused on traits rather than competencies. The scales were used to assess teamwork (Center, 2018); presence and assertiveness (Conkey et al., 2013); professionalism (Deptula & Chun, 2013); situational judgement (Kuthy et al., 2013); communication (Lau & Wang, 2014; Nor et al., 2011); clinical interaction, interpersonal dysfunction and social problem solving (Lau & Wang, 2014); motivation, self-efficacy and stress-coping (Maschuw et al., 2011); general soft skills (Jardim et al., 2020; Maren et al., 2021).

De Pietro et al. (2019) and Jardim et al. (2020) presented validation of their assessment tools. Both articles developed their assessment tool based on the psychometric properties of soft skills. The use of psychometric constructs could also be attributed to the lack of operational definitions. Given the lack of definitions, even a vague measure provides some information. However, the use of psychometric constructs perpetuates the view that soft skills are innate and cannot be learned. Once the soft skills are defined, more robust measures of soft skills need to be developed.

4.1.8 Culture, Diversity, Equality, and Inclusion

Given today's multicultural societies, it was surprising to see the limited regard given to cultural competencies, diversity, equality, and inclusion in the articles reviewed. Although many tertiary providers in their respective countries have developed individually relevant cultural competencies, these need to be discussed among the soft skills. Awareness of one's own culture and the cultures of people around you are soft skills.

The Malaysian Ministry of Higher Education included some cultural competencies in their definitions of soft skills (Abu Kasim et al., 2014; De Pietro et al., 2019; Gonzalez et al., 2013; Ngang et al., 2015). There is also an emerging discussion in the literature with regards to promoting inclusion, diversity, and equality (Bajjaly & Saunders, 2021; Mailool et al., 2020). Although both articles highlight the

importance of teaching these skills, they are not given further consideration. With health and education professionals most likely to interact with individuals from diverse backgrounds, this needs to be more prominent in the soft skills literature.

4.2 Limitations

This scoping review had a number of limitations. Grey literature, such as theses, were excluded from the final inclusion criteria. This exclusion may have caused a bias in the sample of articles reviewed. However, the review scope remained as wide as possible as it did not differentiate based on quality of article.

Similarly, the use of the omnibus search term “soft skills”, rather than individual soft skills, may have biased the sample of literature reviewed. However, the purpose of this scoping review was to identify how soft skills were taught and assessed for health and education practitioners, not focus on individual soft skills. Thus, the implications of this review should be viewed holistically rather than addressing any one specific soft skill.

Generality of this research should be viewed with caution, although it covered health and education sectors across the globe, only articles in English were included. Publications in other languages may have provided more or different information. Similarly, teaching and assessment methods may be more developed across other industries, such as commerce, IT, and engineering, which may mean more coherent and robust operational definitions of soft skills have been developed. Future research needs to review all the definitions of soft skills available across industries and develop robust competency-based definitions.

4.3 Conclusions

This scoping review, based on 48 articles, examined current practices in teaching and assessing soft skills for health and education professionals. Tertiary providers are recognising the importance of and need for soft skills to be taught during the trainees’ professional training. Integrating soft skills into the current curricula continues to require development and the resources for this. The current methods of teaching and assessment of soft skills are ad hoc and seem to lack cohesion. This is perpetuated by the lack of operational definitions for soft skills as well as needing sector standards of these for the professional fields. It is paramount to know what needs to be taught, to teach it, and then assess it. Vague definitions of soft skills will promote vague teaching methods and will continue to rely on vague methods of assessment.

As societies and communities evolve, so will their needs. It is important that professional training providers continually communicate with their respective professional industries to ensure graduates have the necessary skills to participate and succeed in their chosen career paths. This will help training providers to prioritise what soft skills are needed for their graduates.

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References

- Abraham, T. H., Stewart, G. L., & Solimeo, S. L. (2021). The importance of soft skills development in a hard data world: Learning from interviews with healthcare leaders. *BMC Medical Education*, 21(1), 147. <https://doi.org/10/gmcjmr>
- Abu Kasim, N. H., ..., Aziz, A. A. (2014). Pairing as an instructional strategy to promote soft skills amongst clinical dental students. *European Journal of Dental Education*, 18(1), 51-57. <https://doi.org/10.1111/eje.12058>
- AlHouli, A. I., & Al-Khayatt, A. K. A. (2020). Assessing the Soft Skills Needs of Teacher Education Students. *International Journal of Education and Practice*, 8(3), 416-431. <https://doi.org/10/gm9qvg>
- Annamalai, N., Manivel, R., & Palanisamy, R. (2015). Small group discussion: Students perspectives. *International Journal of Applied & Basic Medical Research*, 5(Suppl 1), S18-20. <https://doi.org/10/gmcjp5>
- Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, 8(1), 19-32. <https://doi.org/10/bqnqnb>
- Bajjaly, S. T., & Saunders, L. (2021). Soft Skills Teaching by Top-Ranked US Nursing Faculty. *Journal of Nursing Education*, 60(8), 437-443. <https://doi.org/10/gng7jf>
- Bastos, S., De Oliveira, H., Silva, M. M., & Azevedo, L. (2019). Soft-Digital Skills in Higher Education Curricula. *European Conference on E-Learning*, 70-77, XI. <https://doi.org/10/gm9rk8>
- Bergh, A., Van Staden, C., Joubert, P., Krüger, C., Pickworth, G., Roos, J., Schurink, W., Du Preez, R., Grey, S., & Lindeque, B. (2006). Medical students' perceptions of their development of “soft skills” Part II: The development of “soft skills” through “guiding and growing”. *South African Family Practice*, 48(8), 15-15d. <https://doi.org/10/gnggmh>
- Bhagat, P., Prajapati, K., Bhatt, R., Prajapati, V., Dureja, R., & Tank, G. (2019). Development and introduction of a communication skills module for postgraduate students of ophthalmology. *Indian Journal of Ophthalmology*, 67(11), 1810-1815. <https://doi.org/10/gm9qv7>
- Bradbury-Jones, C., & Aveyard, H. (2021). The incomplete scope of scoping reviews: A framework for improving the quality of reporting. *Journal of Clinical Nursing*, 30(21-22). <https://doi.org/10.1111/jocn.15998>
- Bradbury-Jones, C., Aveyard, H., Herber, O. R., Isham, L., Taylor, J., & O'Malley, L. (2021). Scoping

- reviews: The PAGER framework for improving the quality of reporting. *International Journal of Social Research Methodology*, 1-14. <https://doi.org/10/gj49qs>
- Center, D. (2018). Knowing oneself: The first step to be an effective member of an interprofessional team. *Journal of Continuing Education in Nursing*, 49(9), 397-399. <https://doi.org/10/gd6433>
- Chaka, C. (2020). Skills, competencies and literacies attributed to 4IR/Industry 4.0: Scoping review. *IFLA Journal*, 46(4), 369-399. <https://doi.org/10/gmcjmx>
- Cham, K. M., Gaunt, H., & Delany, C. (2020). Pilot Study: Thinking Outside the Square in Cultivating “Soft Skills”—Going beyond the Standard Optometric Curriculum. *Optometry and Vision Science: Official Publication of the American Academy of Optometry*, 97(11), 962-969. <https://doi.org/10/gmcjnz>
- Charoensap-Kelly, P., Broussard, L., Lindsly, M., & Troy, M. (2016). Evaluation of a soft skills training program. *Business & Professional Communication Quarterly*, 79(2), 154-179. Business Source Premier. <https://doi.org/10/gm9q3n>
- Cimatti, B. (2016). Definition, development, assessment of soft skills and their role for the quality of organizations and enterprises. *International Journal for Quality Research*, 10(1), 97-130. <https://doi.org/10/gng68r>
- Coll, R. K., Taylor, N., & Grainger, S. (2002). Assessment of work based learning: Some lessons from the teaching profession. *Asia-Pacific Journal of Cooperative Education*, 3(1), 5-12.
- Conkey, C. A., Bowers, C., Cannon-Bowers, J., & Sanchez, A. (2013). Machinima and video-based soft-skills training for frontline healthcare workers. *Games for Health Journal*, 2(1), 39-43. <https://doi.org/10/gmcjq3>
- Continisio, G. I., Serra, N., Guillari, A., Lucchese, R., Simeone, S., Gargiulo, G., Toscano, S., Capo, M., Capuano, A., Sarracino, F., Esposito, M. R., & Rea, T. (2021). Evaluation of soft skills among Italian healthcare rehabilitators: A cross sectional study. *Journal of Public Health Research*. <https://doi.org/10/gnc2mj>
- Cziraki, K., Lucas, J., Rogers, T., Page, L., Zimmerman, R., Hauer, L. A., Daniels, C., & Gregoroff, S. (2008). Communication and relationship skills for rapid response teams at hamilton health sciences. *Healthcare Quarterly (Toronto, Ont.)*, 11(3 Spec No.), 66-71. <https://doi.org/10/gmcjrh>
- Dalaya, M., Ishaquddin, S., Ghadage, M., & Hatte, G. (2015). An interesting review on soft skills and dental practice. *Journal of Clinical and Diagnostic Research: JCDR*, 9(3), ZE19-21. <https://doi.org/10/gmcjp7>
- Daly, S., McCann, C., & Phillips, K. (2022). Teaching soft skills in healthcare and higher education: A scoping review protocol. *Social Science Protocols*, 5(1), 1-8. <https://doi.org/10.7565/ssp.v5.6201>
- De Pietro, O., Altomari, N., & De Pietro, O. (2019). A tool to measure teachers’ soft skills: Results of a pilot study. *Advances in Social Science and Culture*, 1(2), 245-257. <https://doi.org/10.22158/assc.v1n2p245>
- Deptula, P., & Chun, M. B. J. (2013). A literature review of professionalism in surgical education:

- Suggested components for development of a curriculum. *Journal of Surgical Education*, 70(3), 408-422. <https://doi.org/10/gmcjq2>
- Dmitrenko, N., Dolia, I., & Nikolaaeva, S. (2020). Soft skills development of prospective educators by means of problem-based ESP learning. *The New Educational Review*, 6(2), 124-135.
- Gade, S., & Chari, S. (2013). Case-based learning in endocrine physiology: An approach toward self-directed learning and the development of soft skills in medical students. *Advances in Physiology Education*, 37(4), 356-360. <https://doi.org/10/gmcjqx>
- Ghimouz, R., O'Sullivan, S., Baltatu, O. C., & Campos, L. A. (2021). Bang the gavel: Animal experimentation on trial-an interdisciplinary mock trial at the school of health sciences. *Advances in Physiology Education*, 45(1), 44-47. <https://doi.org/10/gmcjms>
- Giussi Bordoni, M., Baum, A., Garcia, G., Morinigo, P., Luna, D., Otero, P., Otero, C., & Bernaldo de Quiros, G. F. (2019). Change Management in Healthcare Organizations: Soft Skills Training Strategies Through Blended Learning Environments. In L. OhnoMachado & B. Seroussi (Eds.), *Medinfo 2019: Health and Wellbeing E-Networks for All* (Vol. 264, pp. 1999-2000). <https://doi.org/10.3233/SHT1190754>
- Gonzalez, M. a. G., Abu Kasim, N. H., & Naimie, Z. (2013). Soft skills and dental education. *European Journal of Dental Education: Official Journal of the Association for Dental Education in Europe*, 17(2), 73-82. <https://doi.org/10/f4w99n>
- Haseeb, M., Azfar, M. W., Ahmed, M., Tariq, A., Nawaz, M. S., & Sadiq, A. (2021). Development and validation of scale for self evaluation of soft skills in postgraduate dental students. *JPMA. The Journal of the Pakistan Medical Association*, 71(Suppl 1)(1), S9-S13.
- Hassan, A., Maharoff, M., Abiddin, N. Z., & Ro'is, I. (2015). Teacher trainers' and trainee teachers' understanding towards the curriculum philosophy regarding soft skills embedment in the Malaysian Institute of Teacher Education. *Policy Futures in Education*, 14(2), 164-175. <https://doi.org/10/gmcjp4>
- Ibrahim, M. E., Al-Shahrani, A. M., Abdalla, M. E., Abubaker, I. M., & Mohamed, M. E. (2018). The effectiveness of problem-based learning in acquisition of knowledge, soft skills during basic and preclinical sciences: medical students' points of view. *Acta Informatica Medica: AIM: Journal of the Society for Medical Informatics of Bosnia & Herzegovina: Casopis Drustva Za Medicinsku Informatiku BiH*, 26(2), 119-124. <https://doi.org/10/gmggt2>
- Imwattana, K., Dangprapai, Y., & Ngamskulrungrroj, P. (2020). Active learning classes in a preclinical year may help improving some soft skills of medical students. *Siriraj Medical Journal*, 72(5), 415-423. Scopus. <https://doi.org/10/gmcjnj>
- Jardim, J., Pereira, A., Vagos, P., Direito, I., & Galinha, S. (2020). The soft skills inventory: Developmental procedures and psychometric analysis. *Psychological Reports*, 003329412097993. <https://doi.org/10/gjm5fh>
- Kniaz, H., & Chukhno, O. (2021). English Trainee Teachers' Perspective on Soft Skills Development in

- Ukraine. *Arab World English Journal (AWEJ) Special Issue on CALL*, 7.
- Kuthy, J. E., Ramon, C., Gonzalez, R., & Biddle, D. A. (2013). Practical implications of pre-employment nurse assessments. *The Health Care Manager*, 32(2), 189-192. <https://doi.org/10/gmcjqz>
- Lau, Y., & Wang, W. (2014). Development and evaluation of a learner-centered educational summer camp program on soft skills for baccalaureate nursing students. *Nurse Educator*, 39(5), 246-251. <https://doi.org/10/gmcjqt>
- Lluch, A. M., Lluch, C., Arregui, M., Jiménez, E., & Giner-Tarrida, L. (2021). Peer Mentoring as a Tool for Developing Soft Skills in Clinical Practice: A 3-Year Study. *Dentistry Journal*, 9(5), 57. <https://doi.org/10/gnc2m9>
- Mailool, J., Retnawati, H., Arifin, S., Kesuma, A. T., & Putranta, H. (2020). Lecturers' experiences in teaching soft skills in teacher profession education program (TPEP) in Indonesia. *Problems of Education in the 21st Century*, 78(2), 215-234. <https://doi.org/10/gmcjnh>
- Maren, M. S., Salleh, U. K. M., & Zulnaidi, H. (2021). Assessing prospective teachers' soft skills curriculum implementation: Effects on teaching practicum success. *South African Journal of Education*, 41(3).
- Maschuw, K., Schlosser, K., Kupietz, E., Slater, E. P., Weyers, P., & Hassan, I. (2011). Do soft skills predict surgical performance?: A single-center randomized controlled trial evaluating predictors of skill acquisition in virtual reality laparoscopy. *World Journal of Surgery*, 35(3), 480-486. <https://doi.org/10/bp9s3j>
- Meiners, K. M., & Wisdom, C. M. (2020). Advancing interpersonal, interprofessional, and clinical skills: Teamwork through training collegiate athletes. *Journal of Allied Health*, 49(2), E105-E108.
- Minden, P. (2013). Bearing witness: To promote therapeutic effectiveness. *Holistic Nursing Practice*, 27(3), 168-176. <https://doi.org/10/gkq48w>
- Morrell, B. L. M., Eukel, H. N., & Santurri, L. E. (2020). Soft skills and implications for future professional practice: Qualitative findings of a nursing education escape room. *Nurse Education Today*, 93, 104462. <https://doi.org/10/gm9rbf>
- Murray, K. A., Stollar, M., McClellan, R., King, J., & Hattey, J. A. (2018). A Systematic Map and Scoping Review of Soft Skill Assessment Instruments for College Students and Peer Mentoring Programs. *NACTA Journal*, 62(3), 267-274.
- Ngang, T. K., Yunus, H. M., & Hashim, N. H. (2015). Soft skills integration in teaching professional training: Novice teachers' perspectives. In C. Hursen (Ed.), *Proceedings of 5th World Conference on Learning, Teaching and Educational Leadership* (Vol. 186, pp. 835-840). <https://doi.org/10.1016/j.sbspro.2015.04.204>
- Nor, N. A. M., Yusof, Z. Y. M., & Shahidan, M. N. F. M. (2011). University of Malaya dental students' attitudes towards communication skills learning: Implications for dental education. *Journal of Dental Education*, 75(12), 1611-1619.

- Pang, Y., Wu, Q., Bi, J., & Wang, J. (2021). Effectiveness of hierarchical, diversified soft skills training in clinical nursing training. *International Journal of Clinical Practice*. <https://doi.org/10/gnc2nb>
- Peters, M., Godfrey, C., McInerney, P., Munn, Z., Trico, A., & Khalil, H. (2020). Chapter 11: Scoping Reviews. In E. Aromataris & Z. Munn (Eds.), *JBI Manual for Evidence Synthesis*. JBI. <https://doi.org/10.46658/JBIMES-20-12>
- Plotzky, C., Lindwedel, U., Sorber, M., Loessl, B., Konig, P., Kunze, C., Kugler, C., & Meng, M. (2021). Virtual reality simulations in nurse education: A systematic mapping review. *Nurse Education Today*, *101*, 104868-104868. <https://doi.org/10/gmcjmt>
- Ross, S., Poth, C. N., Donoff, M., Humphries, P., Steiner, I., Schipper, S., Janke, F., & Nichols, D. (2011). Competency-based achievement system: Using formative feedback to teach and assess family medicine residents' skills. *Canadian Family Physician Medecin De Famille Canadien*, *57*(9), e323-330.
- Sagorika, S., & Hasegawa, S. (2018). Designing a soft-skill cultivation platform for health care professionals (HCPs). *The 13th International Conference on Knowledge, Information and Creativity Support Systems (KICSS 2018)*.
- Schutt, S., Linegar, D., Holloway, D., & Deman, D. (2017). Using simulated digital role plays to teach healthcare "soft skills". In N. Dias, S. DeFreitas, D. Duque, N. Rodrigues, K. Wong, & J. L. Vilaca (Eds.), *2017 Ieee 5th International Conference on Serious Games and Applications for Health (segah)*.
- Sharma, S., Arora, K., Chandrashekhar, Sinha, R. K., Akhtar, F., & Mehra, S. (2021). Evaluation of a training program for life skills education and financial literacy to community health workers in India: A quasi-experimental study. *BMC Health Services Research*, *21*, 1-10. <https://doi.org/10/gjdn93>
- Sidebotham, M., Walters, C., Baird, K., & Gamble, J. (2020). Simulated employment interviews: A collaborative approach to gaining understanding of the graduate midwife employment process. *Women and Birth: Journal of the Australian College of Midwives*, *33*(5), 455-463. <https://doi.org/10/gmcjm2>
- Singh, K., Bhattacharyya, M., Veerwal, V., & Singh, A. (2017). Using role-plays as an empathy education tool for ophthalmology postgraduate. *International Journal of Applied & Basic Medical Research*, *7*(Suppl 1), S62-S66. <https://doi.org/10/gmcjph>
- Touloumakos, A. K. (2020). Expanded yet restricted: A mini review of the soft skills literature. *Frontiers in Psychology*, *11*, 2207. <https://doi.org/10/gg9vrX>
- Treem Guerin, T. (2014). Relationships matter: The role for social-emotional learning in an interprofessional global health education. *Journal of Law, Medicine and Ethics: A Journal of the American Society of Law, Medicine and Ethics*, *42*(4), 38-44.