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Abstract

Reasoning, reflective practice, and evidence-based practice are essential skills for occupational therapy practitioners, but it is unclear how these skills are defined in occupational therapy education. We used Delphi methodology to explore educator conceptualizations of clinical reasoning, professional reasoning, reflective practice, and evidence-based practice. Eligible participants on the Delphi expert panel were required to have been an educator in an occupational therapy program for at least three years at the master's level or higher, to be a current occupational therapy educator, based in the United States, and available across multiple survey rounds. Nine participants completed all three survey rounds. Among members of the expert panel there was continued moderate disagreement about terminology related to reasoning and there were some discrepancies between expert perspectives and the occupational therapy literature. However, these educators largely agreed on key features of the complex constructs. Consistency about the use of these terms will support both education and research related to essential professional skills.

Keywords

Professional skills, educator perceptions, curriculum

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ABSTRACT

Reasoning, reflective practice, and evidence-based practice are essential skills for occupational therapy practitioners, but it is unclear how these skills are defined in occupational therapy education. We used Delphi methodology to explore educator conceptualizations of clinical reasoning, professional reasoning, reflective practice, and evidence-based practice. Eligible participants on the Delphi expert panel were required to have been an educator in an occupational therapy program for at least three years at the master's level or higher, to be a current occupational therapy educator, based in the United States, and available across multiple survey rounds. Nine participants completed all three survey rounds. Among members of the expert panel there was continued moderate disagreement about terminology related to reasoning and there were some discrepancies between expert perspectives and the occupational therapy literature. However, these educators largely agreed on key features of the complex constructs. Consistency about the use of these terms will support both education and research related to essential professional skills.

Introduction

Professionalism in occupational therapy has been described as (a) requiring reflexivity as an antecedent, (b) involving reasoning as a key behavior, and (c) being complementary to evidence-based practice in supporting value-based practice (Lecours et al., 2021). Accordingly, reasoning, reflective practice, and evidence-based practice have been identified as essential skills for occupational therapy practice and, thus, essential skills for occupational therapy students to learn. These three skills are also highlighted as significant to practice by the American Occupational Therapy Association (AOTA) in the *Occupational Therapy Practice Framework- 4th edition (OTPF-4; 2020)*.

Unfortunately, research indicates therapists report rarely engaging in reflection and evidence-based practice (Benfield & Krueger, 2021; Krueger et al., 2020). If these skills are essential but therapists do not engage in them, it raises the broader question of whether students learn these skills and, ultimately, “what it means to do, be, belong and become an occupational therapist” (Benfield & Krueger, 2021, p. 1).

One factor relevant to students learning these key skills is how they are defined and communicated by educators. In writing about how to teach clinical reasoning, Neistadt (1996) identified the need for educators to use precise language when teaching professional skills and to connect their language to their teaching methods. Professional thinking skills must be made concrete, explicit, and visible for students, which requires a clear articulation of the skills themselves (Delany & Golding, 2014). And yet, these skills continue to be defined inconsistently (Burke et al., 2023), which limits educators’ abilities to be precise and explicit in teaching them.

Clinical/Professional Reasoning

Use of the term clinical reasoning has evolved over time within occupational therapy. The AOTA and the American Occupational Therapy Foundation (AOTF) demonstrated their interest in developing the construct of clinical reasoning within occupational therapy by co-funding what is now known as the Clinical Reasoning Study, a two-year project investigating therapist reasoning (Gillette & Mattingly, 1987; Mattingly, 1991). Since that time, the terms clinical reasoning and professional reasoning have been used interchangeably in the OTPF-4 (AOTA, 2020); literature reviews often use one term to refer to both concepts (da Silva Araujo et al., 2022; Unsworth & Baker, 2016). In the glossary of the OTPF-4, professional reasoning is defined as a “process that practitioners use to plan, direct, perform, and reflect on client care” (Schell, 2019, p. 482); the definition of clinical reasoning simply states, “see *Professional reasoning*” (AOTA, 2020, p. 75). In contrast, occupational therapy education standards in the United States define clinical reasoning but not professional reasoning. While both terms are used, clinical reasoning is used most frequently (Accreditation Council for Occupational Therapy Education [ACOTE®], 2018). Overall, recent reviews suggest the term clinical reasoning has been evolving within the profession and is not consistently defined (da Silva Araujo et al., 2022; Gordon et al., 2022). Although these reviews propose frameworks and define elements of clinical reasoning (da Silva Araujo et al., 2022; Maruyama et al., 2021), it is unclear how they align with current educator perspectives.

Reflective Practice

Reflective practice is broad and complex, making clear conceptualization difficult (Kinsella, 2001). The term reflective practice has been described both in simplistic terms, related to professional development, and as a multifaceted way to approach learning (Kinsella, 2001). Schön (1983), whose work influenced occupational therapy through his role in the Clinical Reasoning Study (Gillette & Mattingly, 1987), considered reflective practice to be a “dialogue of thinking and doing” (p. 31) that encompasses both reflection-in-action and reflection-on-action. More specific to occupational therapy, Nicola-Richmond and colleagues (2016) described reflective practice as “undertaking critical reflection of one’s own performance and all of the elements of the occupational therapy role” (p. 101) when identifying it as a threshold concept/capability of occupational therapists. These different views of reflective practice raise the question of how educators define reflective practice for students.

Evidence-Based Practice

Although evidence-based practice tends to be defined as integrating the “best available evidence” into practice (AOTA, 2020), practitioners appear to restrict the definition to the use of *research* evidence to the exclusion of other potential evidence sources (Bennett et al., 2003; Garcia et al., 2020; Graham et al., 2013). However, AOTA (2021) explicitly described evidence-based practice as integrating not only critically appraised research, but also clinical expertise and client preferences, beliefs, and values. Therefore, although this definition may be used somewhat more consistently in literature, it does not appear to have been translated to practice.

The lack of consistent definitions for professional thinking skills may contribute to lack of clarity on what is taught in occupational therapy programs. The first step in identifying what needs to be taught is understanding how educators themselves define these multidimensional constructs. We conducted a Delphi study with occupational therapy educators to develop an understanding of how they define clinical reasoning, professional reasoning, reflective practice, and evidence-based practice.

Method

Delphi methodology involves iterative survey rounds with the aim of facilitating expert consensus. Thus, we chose it for this study due to its constructivist nature to capture the perspective of occupational therapy educators. The Delphi approach also is especially valuable in research areas where knowledge is lacking (Falzarano & Pinto Zipp, 2013).

We followed the guidelines of Conducting and REporting DElphi Studies (CREDES) (Jünger et al., 2017). This paper presents one piece of a larger Delphi study. Data presented here relate to educator participant definitions of clinical reasoning, professional reasoning, reflective practice, and evidence-based practice. This first step serves as a move toward resolving existing inconsistencies in how these terms are defined and used. It also serves as a foundation to looking at the relationships among these constructs, as we appreciate that these constructs are not independent; therefore, we also collected data not presented here on relationships amongst these terms and about education approaches for supporting students to develop these skills. These

additional findings will be reported in subsequent manuscript(s). Ethics approval was obtained from Colorado State University, protocol #3212, and there were no conflicts of interest for researchers conducting the study.

Participants

We used purposive sampling to recruit occupational therapy educators as participants, as delineated in our research question. Recruitment took place through posts on professional message boards (AOTA's CommunOT general and academic forums) and social media (Instagram). Additionally, we sent invitation emails to educators with publication histories related to reasoning, reflection, and/or evidence-based practice in occupational therapy based on our literature review. Participants were required to have worked as an occupational therapy educator for at least three years at the master's level or higher and to be an occupational therapy educator at the time of participation. These criteria ensured participant views could be drawn from their perspectives as part of the education community. Participants also were required to be based in the United States, with the understanding that perspectives may vary across cultural and educational contexts. The final inclusion criterion was that participants expressed availability to participate over the course of multiple rounds of surveys. A specific focus on teaching reasoning, reflective practice, and/or evidence-based practice was not required, as these are considered core components of occupational therapy programs. Potential participants were screened through an online form to ensure they met inclusion criteria. We did not recruit through educational programs, but screening also allowed us to ensure no more than two participants were from the same institution to allow for a variety of professional contexts.

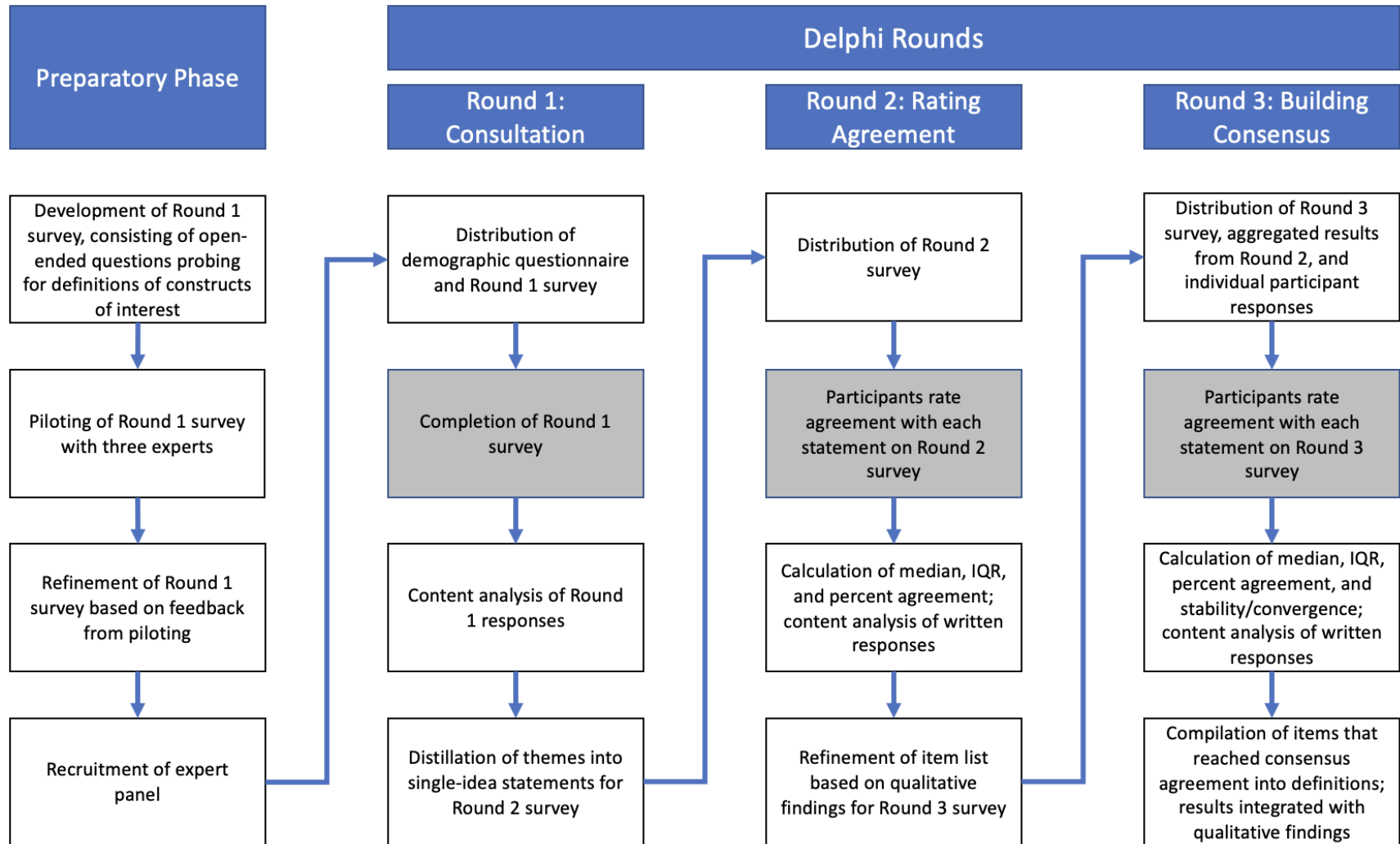
There are no clear guidelines on how many participants should be included on a Delphi panel, but a small sample size is appropriate for relatively homogeneous groups (Skulmoski et al., 2007) and a minimum of eight participants is recommended for panels where participant qualifications are well-defined (Hallowell & Gambatese, 2010). The participants in this study were expected to have potentially disparate theoretical perspectives on the constructs of interest. However, the sample was also relatively homogeneous and well-defined, because it included only occupational therapists who had a baseline level of experience as educators and were working within the same broad professional context (the United States). For this study, then, we aimed for a minimum of 10 participants on the panel to meet the study purpose, which is consistent with similar research in occupational therapy (De Villiers et al., 2005; Mthembu et al., 2018; Nicola-Richmond et al., 2016). Figure 1 summarizes study methods.

Procedure/Data Collection and Analysis

Survey responses were collected between June and August of 2022. We chose in advance to conduct three survey rounds to increase the likelihood of continued participation while allowing for nuanced responses, and to limit the likelihood of forcing consensus among participants on the panel (Skulmoski et al., 2007). Surveys were distributed through an online platform, and participants were given 2 weeks to complete each survey, with a reminder sent after one week. Consistent with Delphi methodology, participants were kept anonymous from one another throughout the process.

Figure 1

Summary of Delphi Process



Notes. Gray shading indicates steps completed by participants. IQR = interquartile range.

Round 1

The first survey round included a demographic questionnaire to identify professional experience, educational background, relevant courses taught, associated institution, and philosophy of occupational therapy. The Round 1 survey was exploratory to collect participant perspectives on conceptualizations of each term; it therefore consisted of open-ended questions that were developed in accordance with the research question for this study and based on the literature. The initial survey was piloted by three occupational therapy educators and refined accordingly. Round 1 survey questions can be seen in Table 2.

Round 2

We analyzed participant responses to the Round 1 survey to develop the Round 2 survey. HKB used content analysis, a systematic approach to condensing material into discrete items (Hasson et al., 2000; Stemler, 2000), to distill open-ended responses from participants into statements that only contained one idea. Statements then were independently checked against the data by two researchers (SJL and PLS). We resolved disagreements through discussion. For each statement, we used participant wording as much as possible.

We asked participants to rate their agreement with each statement developed through the content analysis described above using a Likert scale from 1 (strongly disagree) to 4 (strongly agree). Alternatively, they could select "I don't know." We also invited participants to share any additional comments in a free-response box.

For each statement, we calculated the median response value, the interquartile range (IQR), and the overall percent agreement. IQR is a measure of dispersion associated with median values representing the middle 50% of responses (separating responses into quartiles). Median and IQR are generally accepted and recommended in healthcare literature using Delphi methodology (Boulkedid et al., 2011). Statements that achieved an IQR value ≤ 1 were considered to have reached consensus among participants (Raskin, 1994; von der Gracht, 2012). Percent agreement was calculated by counting the number of responses that achieved a rating of 3 (agree) or 4 (strongly agree) and dividing that by the total number of responses. Setting a threshold for consensus is one of the most contentious elements of Delphi studies (De Villiers et al., 2005). Therefore, to be consistent with similar Delphi studies in occupational therapy (De Villiers et al., 2005; Nicola-Richmond et al., 2016), statements with a percent agreement of 70% or higher were considered to have reached agreement for inclusion. This also ensured findings were not unnecessarily limited, given our smaller sample size.

Round 3

For the final round, participants rated agreement for the same items from Round 2 plus two additional items added based on feedback from the previous round. We provided the median and IQR value of each statement along with a brief description of what these values meant. Each participant also was shown their individual Round 2 responses as feedback, enabling them to see how they compared to the group median. Participants again were able to write free response comments.

We calculated median, IQR, and percent agreement for Round 3 responses. We also calculated the difference between IQR values from the second round and the third round to investigate stability and/or convergence of responses (Landeta, 2006; von der Gracht, 2012). Differences close to 0 (meaning there was little or no change in IQR value across rounds) represented stability of opinion. Positive values – meaning the IQR value went from a higher value (indicating disagreement) to a lower value (indicating higher levels of agreement) – represented convergence. Negative values indicated increasing disagreement.

Results

Participants

A total of 20 potential participants completed the screening questionnaire and 14 met inclusion criteria based on responses to the online screening form. All 14 were associated with different institutions. Of those eligible, 11 completed the first round; 10 completed the second round; and 9 completed the third round. This yielded a completion rate across rounds of 81.8%. Demographic information for participants who completed the Round 1 survey is included in Table 1.

Table 1

Participant Characteristics (n = 11)

Variable	Description
Years of Educator Experience in Occupational Therapy <i>n</i> (%)	
3-5 years	3 (27.3%)
6-10 years	3 (27.3%)
11-15 years	1 (9.1%)
>15 years	4 (36.4%)
Level of Education	
Clinical Doctorate	7 (63.7%)
Doctor of Philosophy	4 (36.4%)
Primary Focus Areas ^a <i>n</i> (%)	
Mental Health	3 (27.3%)
Community-Based	4 (36.4%)
Acute Care/Acute Inpatient	3 (27.3%)
Rehabilitation	
Pediatrics (Early Intervention, Schools, Inpatient, Outpatient)	4 (36.4%)
Teach Courses that Relate to Study Constructs ^b	
Explicitly (across 40 courses)	10 (90.9%)
Implicitly (across 21 courses)	11 (100%)

^a Participants could select more than one focus area. Other primary focus areas endorsed by only one participant each include hand therapy, neonatal intensive care unit, gerontology, and subacute rehabilitation.

^b These data come from questions in the demographic questionnaire asking participants if they taught courses that explicitly or implicitly addressed study constructs. Study constructs included: clinical reasoning, professional reasoning, reflective practice, and evidence-based practice.

Round 1

Responses to open-ended questions varied significantly in length and depth. Analysis of responses to open-ended questions in Round 1 (see Table 2 for questions and analysis example) led to the development of 15 items defining clinical reasoning, 19 items defining professional reasoning, 17 items defining reflective practice, and 11 items defining evidence-based practice (see Table 3).

Table 2

Example of Item Development Process from Round 1

Round 1: Please provide your definitions for the following terms as they relate to occupational therapy:	Consolidated Item Developed for Round 2 Survey with Corresponding Sample of Contributing Participant Data
Clinical Reasoning	1. Clinical reasoning is using all available data to inform decision-making in practice. <ul style="list-style-type: none"> • Ability to use knowledge and experience to inform best practices. • Considering all factors relevant to a situation (person, environment, occupation, best available evidence, and past experience) to make a decision. • Analysis of beliefs, theory, knowledge, skills, actions, etc. to identify a course of action.
Professional Reasoning	6. Professional reasoning is based more on information related to professional scope of practice than clinical reasoning is. <ul style="list-style-type: none"> • Based more on knowledge about scope of practice, roles, practice areas, etc. • Guided by our scope of practice. • Consideration of the context of the profession is an important component.
Reflective Practice	2. Reflective practice is reflection on practitioner attitudes, biases, assumptions, beliefs, knowledge, skills, and/or experiences. <ul style="list-style-type: none"> • Intentionally reflecting on attitudes involved in client care. • Uncovering personal biases and assumptions that may impact the therapeutic relationship. • Critical analysis of thinking, beliefs, actions, knowledge, skills, and/or experiences.
Evidence-Based Practice	4. Evidence-based practice is using client preferences, interests, and/or values to guide clinical decision-making. <ul style="list-style-type: none"> • Using client's preferences and interests as evidence. • Being mindful of specific needs of the specific client.

- Using a combination of research, client beliefs, values, and interests, and practitioner expertise for decision-making.

Note. Item numbers correspond to the item numbers in Table 3.

In Round 1, one participant (DD12) proposed that clinical reasoning is not the correct term for the reasoning occupational therapists use. They commented that clinical reasoning “is too grounded in the medical model from which we are trying to get away [...] I prefer the term ‘therapeutic reasoning’ because I think it reflects more accurately what we do as occupational therapists.” This concern was not noted by other participants in Round 1, but statements were developed to reflect this perspective in the Round 2 survey.

Table 3

Items Distilled from Rounds 1 and 2

Clinical Reasoning
1. Clinical reasoning is using all available data to inform decision-making in practice.
2. Clinical reasoning is the reasoning occupational therapists use in a clinical/healthcare setting.
3. Clinical reasoning is a medical construct whereby medical practitioners reason to arrive at clinical decisions.
4. Clinical reasoning is engaging in critical thinking to inform decision-making.
5. Clinical reasoning is used when making a decision based on context-dependent information related to an individual/client in their environment.
6. Clinical reasoning is the process used to understand the occupational needs of a person/group, decide whether intervention is necessary, and determine what goals should be included.
7. Clinical reasoning is an umbrella term for a problem-solving process required to identify and address occupational performance problems in a client-centered way.
8. Clinical reasoning is used to guide decision-making in an ethical manner.
9. Clinical reasoning is a way of thinking about an issue where the best ideas guide your behavior.
10. Clinical reasoning is the thinking process occupational therapists use to engage clients in services.
11. Clinical reasoning is making decisions to maximize client occupational engagement and quality of life.
12. Clinical reasoning is a complex process that involves connecting various pieces of information together.
13. Clinical reasoning is not what occupational therapists use to reason.
14. Clinical reasoning is a process that includes reflection on decision-making.
15. Clinical reasoning is a process that includes the use of theory.
16. Clinical reasoning connotes the meta-cognitive activities that go into making a decision.

Professional Reasoning

1. Professional reasoning is the same as/very similar to clinical reasoning.
2. Professional reasoning is broader than clinical reasoning.
3. Professional reasoning is a process that involves considering the entire scope of care when making decisions.
4. Professional reasoning is a practice that goes beyond the clinical/healthcare setting.
5. Professional reasoning is using your knowledge, experience, and best available evidence to come to a conclusion.
6. Professional reasoning is based more on information related to professional scope of practice than clinical reasoning is.
7. Professional reasoning is a process that involves thinking about the patient, the assessment/treatment process, the focus of care, and the therapeutic relationship.
8. Professional reasoning is used by interdisciplinary teams.
9. Professional reasoning is a process that demonstrates occupational therapy's unique contribution.
10. Professional reasoning is a general way of thinking/problem solving that guides the occupational therapy process as a practitioner works with a client.
11. Professional reasoning is professional decision-making based on guiding principles.
12. Professional reasoning is a process with outcomes related to professional decisions (administrative, educational, clinical, etc.).
13. Professional reasoning is a process that requires that we assess the quality of our thinking, beliefs, and actions.
14. Professional reasoning is guided by the Person, Environment, Occupation, Performance model.
15. Professional reasoning is a process that includes clinical judgment.
16. Professional reasoning is a process that involves exploration, gathering new ideas, and imagining possibilities to guide practice and new ways of thinking.
17. Professional reasoning is a process that includes decision-making related to interpersonal interactions.
18. Professional reasoning is a process that includes decision-making related to ethics.
19. Professional reasoning is a process that includes decision making related to professional behaviors.

Reflective Practice

1. Reflective practice is reflection on the occupational therapy process.
2. Reflective practice is reflection on practitioner attitudes, biases, assumptions, beliefs, knowledge, skills, and/or experiences.
3. Reflective practice is applying a critical lens to practice.
4. Reflective practice is making changes to future practice to improve outcomes based on reflection.
5. Reflective practice is using outcome measurement to reflect on the quality of one's thinking/actions in a practice scenario.
6. Reflective practice is thinking about why something worked/did not work in a practice scenario.

7. Reflective practice is engaging in activities to improve professional competencies based on reflection.
8. Reflective practice is reflecting on how a client does things (which may involve activity analysis).
9. Reflective practice is reviewing notes, goals, intervention, and/or assessment to improve performance.
10. Reflective practice is making an intentional and regular effort to examine one's approach to practice.
11. Reflective practice is self-assessment of one's own strengths and weaknesses.
12. Reflective practice is soliciting feedback from others.
13. Reflective practice is required to achieve clinical/professional reasoning.
14. Reflective practice is taking time to process a situation before taking action.
15. Reflective practice is being constantly aware of what you are doing and why.
16. Reflective practice is meta-cognition.
17. Reflective practice is engaging in self-questioning to think about how you are progressing towards a stated objective.
18. Reflective practice is a continuous activity. (Round 3 only)

Evidence-Based Practice

1. Evidence-based practice is using the best available evidence to guide clinical decision-making.
 2. Evidence-based practice is being able to support practice decisions with evidence.
 3. Evidence-based practice is using peer-reviewed literature to guide clinical decision-making.
 4. Evidence-based practice is using client preferences, interests, and/or values to guide clinical decision-making.
 5. Evidence-based practice is using clinician expertise/experience to guide decision-making.
 6. Evidence-based practice is using diverse evidence-sources (both research and non-research) to guide clinical decision-making.
 7. Evidence-based practice is using population-based evidence to inform clinical decision-making.
 8. Evidence-based practice is conscious decision-making using outcome measurement.
 9. Evidence-based practice is conscious decision-making using reflection.
 10. Evidence-based practice is a process that must be combined with theory-based practice to ensure practice is grounded within occupational therapy.
 11. Evidence-based practice is using evidence to inform the application of scope of practice.
-

Round 2

For clinical reasoning, all but two items (Items #9 and #13) reached the agreement threshold after Round 2 (see Table 4). One participant commented, “Clinical reasoning does not [connote] quality of thinking, only the meta-cognitive activities that go into the decision.” This led to the addition of one item (Item #16) to clarify the inclusion of meta-cognition in the definition of clinical reasoning. In response to Item #13, one participant (DD05) noted that “clinical reasoning is utilized in whatever situation you are in as an OT,” pushing back against the suggested idea that it applies only to a medical model. Further, feedback suggested that participants had difficulty thinking about statements that broke the terms of interest into single constructs (e.g., “clinical reasoning is a process that includes the use of theory”) rather than providing a holistic definition. One participant (DD07) commented, “There are elements in each of these statements that are accurate to some degree, however taking any one of these definitions in isolation narrows the scope of what clinical reasoning is” and another (DD09) clarified that “clinical reasoning is a complex process that involves many different skills and considerations.” In response to this, instructions were clarified to direct participants to view each statement as a piece of the definition, not the whole definition, when considering if they agreed with its inclusion in a definition.

Table 4

Descriptive Statistics of Consensus Ratings

Item	Round 2 (n = 10)			Round 3 (n = 9)			Agreement Stability ^a
	Median	IQR	Agreement (%)	Median	IQR	Agreement (%)	
Clinical Reasoning							
Item 1	3.5	1	100.00%	4	0	90.00%	1
Item 2	4	1	90.00%	4	0	90.00%	1
Item 3	3	1.75	70.00%	3	1	80.00%	1
Item 4	4	0	100.00%	4	0	90.00%	0
Item 5	3.5	1	100.00%	4	1	90.00%	0
Item 6	4	1	90.00%	4	0	90.00%	1
Item 7	3	1	80.00%	3	0	80.00%	1
Item 8	3	0	90.00%	3	0	90.00%	0
Item 9	3	1	50.00%	3	0	70.00%	1
Item 10	3	1.5	70.00%	3	0	80.00%	1
Item 11	3	1.5	70.00%	3	0	80.00%	1
Item 12	4	0	100.00%	4	0	90.00%	0
Item 13	1	0	10.00%	1	0	0.00%	0
Item 14	4	0	100.00%	4	0	90.00%	0
Item 15	3.5	1	90.00%	4	1	90.00%	0
Item 16 ^b	NA	NA	NA	4	1	90.00%	NA

Professional Reasoning							
Item 1	3	0.8	70.00%	3	0	80.00%	0
Item 2	4	1.3	60.00%	4	0	80.00%	1.5
Item 3	4	0	90.00%	4	0	80.00%	0.25
Item 4	4	0.8	100.00%	4	1	90.00%	0
Item 5	4	1	90.00%	4	1	90.00%	0
Item 6	4	1	80.00%	4	0	80.00%	1
Item 7	4	0	90.00%	4	0.3	80.00%	0
Item 8	4	0.3	70.00%	4	1	90.00%	-0.5
Item 9	3	0.8	80.00%	3	0	70.00%	0
Item 10	3	0	80.00%	3	0	80.00%	0
Item 11	3	1	90.00%	3.5	1	80.00%	0
Item 12	3	1	90.00%	3	1	90.00%	0
Item 13	4	1	80.00%	4	1	90.00%	0
Item 14	2	0.8	30.00%	2	0	0.00%	1
Item 15	3	0.3	70.00%	3	0	90.00%	0.5
Item 16	3.5	1	70.00%	3	1	80.00%	0
Item 17	3.5	1	80.00%	3.5	1	80.00%	0
Item 18	4	1	90.00%	4	1	90.00%	0
Item 19	4	0.3	80.00%	4	0	90.00%	0.5
Reflective Practice							
Item 1	4	1	80.00%	4	1	80.00%	0
Item 2	4	0	100.00%	4	0	90.00%	0
Item 3	4	0	100.00%	4	0	90.00%	0
Item 4	4	0	100.00%	4	0	90.00%	0
Item 5	3	1	90.00%	3	1	90.00%	0
Item 6	4	1	90.00%	4	0	90.00%	1
Item 7	3	1	90.00%	3	1	90.00%	0
Item 8	3.5	1	90.00%	4	1	80.00%	0
Item 9	4	1	90.00%	4	1	80.00%	0
Item 10	4	0	100.00%	4	0	90.00%	0
Item 11	4	0.8	100.00%	4	0	90.00%	0
Item 12	3	1	100.00%	3	1	90.00%	0
Item 13	4	1	90.00%	4	0	90.00%	1
Item 14	3	0.5	60.00%	3	0	80.00%	0.5
Item 15	3	0.8	100.00%	3	0	90.00%	1

Item 16	4	1	90.00%	4	0	90.00%	1
Item 17	3.5	1	100.00%	4	1	90.00%	0
Item 18 ^b	NA	NA	NA	4	0	90.00%	NA
Evidence-Based Practice							
Item 1	4	1	90.00%	4	1	90.00%	-0.75
Item 2	4	0.8	100.00%	4	0	90.00%	1
Item 3	3	1	100.00%	3	1	90.00%	0
Item 4	3	0.8	80.00%	3	0	80.00%	1
Item 5	3	0.8	90.00%	3	0	80.00%	1
Item 6	4	1	90.00%	4	0	90.00%	0.25
Item 7	3	0.8	90.00%	3	1	90.00%	0
Item 8	3	0	90.00%	3	0	90.00%	0
Item 9	3	0	70.00%	3	0	80.00%	0
Item 10	3	1	90.00%	3	0	90.00%	0.25
Item 11	4	1	90.00%	4	1	90.00%	0

^a Agreement stability was calculated by subtracting the Round 3 IQR from the Round 2 IQR. For this calculation, only agreement ratings from participants who completed both Round 2 and Round 3 were used in the Round 2 IQR calculation.

^b Item was added for Round 3 and does not have Round 2 data.

For professional reasoning, all but two items (Items #2 and #14) reached the agreement threshold after Round 2. In response to Item #18, DD12 added that “ethical reasoning” – which they defined as “a process by which a practitioner arrives at an ethical, rather than a therapeutic decision” – is a separate term from professional reasoning. Additionally, one participant (DD05) noted that Item #13 was how they define critical thinking, not professional reasoning.

For reflective practice, only Item #14 did not reach the agreement threshold in Round 2. One participant (DD07) commented, “I don’t think there is an end goal in mind with reflective process. It is a continual activity.” This led to the addition of Item #18 to explicitly identify reflective practice as continuous.

All evidence-based practice items met the agreement threshold after Round 2.

Round 3

For clinical reasoning, all items except Item #13 reached the 70% agreement threshold by Round 3. There was moderate consensus amongst participants for these items; 12 of the 16 items had an IQR value of 0 after Round 3. There was also moderate stability, with 7 of the 15 original items showing no change in IQR, and the remaining 8 showing a change of 1 towards increased agreement. One participant (DD09) still commented that they had difficulty rating agreement for the single statements, saying, “I was thinking about the statement not being the full picture or wanting to add to the statement to make it more accurate in my mind.”

For professional reasoning, only Item #14 had agreement below threshold by Round 3. Of all the terms, there was the least consensus across items defining the term; only 9 of the 19 items had IQRs of 0, and one item had increasing disagreement from Round 2 to Round 3.

For reflective practice, there was high agreement following Round 3, with all items at 80% agreement. Regarding consensus, 10 of the 18 items had an IQR value of 0 after Round 3. There was high stability of responses, with only 5 items showing some convergence from Round 2 to Round 3.

For evidence-based practice, agreement for all items remained above the agreement threshold in Round 3. By Round 3, consensus across items was moderate; seven items had an IQR value of 0. One item (Item #7) had increasing disagreement from Round 2 to Round 3, because one participant switched from “strongly agree” to “agree.”

Discussion

In this study we aimed to synthesize occupational therapy educators' consensus conceptualizations of clinical reasoning, professional reasoning, reflective practice, and evidence-based practice. Our purpose was to identify commonly held beliefs about these constructs along with potential differences of opinion in service of enabling definitional consistency. We chose to survey educators to develop a beginning understanding of how these skills are being defined by those who teach them to occupational therapy students. Participants reached consensus around broad definitions for each construct (see Table 5). Some points of disagreement suggest the need for more clarity of definition.

Table 5

Summary of Consensus Definitions Following Round 3

Term	Summary of Consensus Definitions
Clinical Reasoning	<ul style="list-style-type: none"> • Used in a clinical/healthcare setting whereby practitioners arrive at context-dependent clinical decisions • Meta-cognitive activities that go into making a decision, including: <ul style="list-style-type: none"> ○ critical thinking ○ reflection • Problem-solving incorporating all data, including theory, to: <ul style="list-style-type: none"> ○ Understand occupational needs of a person/group ○ Decide whether intervention is necessary ○ Determine goals ○ Engage clients in client-centered, ethical services • Goal of maximizing occupational engagement and quality of life
Professional Reasoning	<ul style="list-style-type: none"> • Similar to clinical reasoning, but broader, as it is used by interdisciplinary teams • Goes beyond clinical/healthcare setting

	<ul style="list-style-type: none"> • Outcomes related to any professional decisions (administrative, educational, clinical) • Based on professional scope of practice and guiding principles, demonstrating occupational therapy’s unique contribution • Involves exploration and imagining possibilities to guide practice using knowledge, experience, and best available evidence • Requires assessment of quality of thinking, beliefs, and actions • Guides occupational therapy process through entire scope of care, therapeutic relationship, interpersonal interactions, ethics, and professional behaviors
<p>Reflective Practice</p>	<ul style="list-style-type: none"> • Continuous activity involving meta-cognitive reflection on the occupational therapy process, including: <ul style="list-style-type: none"> ○ How a client does things ○ Why a thing worked/did not work ○ Outcome measurement/assessment data, notes, goals, interventions • Multiple regular, intentional activities, including: <ul style="list-style-type: none"> ○ Processing before taking action ○ Engaging in self-questioning ○ Being constantly aware of what one is doing and why ○ Improving professional competence ○ Soliciting feedback from others ○ Self-assessment of strengths and limitations • Applying critical lens to attitudes, biases, assumptions, beliefs, knowledge, skills, experiences, and quality of thinking/actions • Required to achieve reasoning • Goal of improving performance and changing future practice to improve outcomes
<p>Evidence-Based Practice</p>	<ul style="list-style-type: none"> • Using the best available evidence, including diverse evidence-sources such as: <ul style="list-style-type: none"> ○ Peer-reviewed literature ○ Population-based evidence ○ Client preferences, interests, and/or values ○ Clinician expertise/experience • Used to guide and support clinical decision-making and inform the application of scope of practice • Conscious decision-making using outcome measures and reflection • Must be combined with theory-based practice to ensure practice is grounded in occupational therapy

Note. Although adequate definitions of terms do not involve reference to the term itself (Mosey, 1996), participant wording was used here as much as possible to best represent findings. See Table 2 for exact participant wording of items.

Clinical Reasoning as Defined by Occupational Therapy Educators

Considered together, occupational therapy educators described clinical reasoning as a collection of meta-cognitive activities that contribute to a complex process of decision-making and problem solving using all available data, including context-specific information and theory, to arrive at the best course of action. This definition of clinical reasoning is overall consistent with what can be found in the literature, including Young and colleagues' (2020) synthesis of clinical reasoning frameworks in occupational therapy. However, all components that participants identified are not found in any one piece of work. For example, participants also described reasoning as being about the therapeutic process: understanding client occupational needs, determining relevant interventions and goals, and otherwise engaging clients in occupational therapy services. Specifically, reasoning was described as working towards maximizing client occupational engagement and quality of life, consistent with a recent scoping review of qualitative literature on clinical reasoning in occupational therapy by da Silva Araujo and colleagues (2022). It is therefore significant that in this study occupational engagement was specifically identified as the outcome of clinical reasoning by occupational therapy educators; an occupational focus may distinguish reasoning in occupational therapy from reasoning in other related health disciplines (da Silva Araujo et al., 2022).

Unsurprisingly, there was some disagreement about the context in which the term clinical reasoning applies. Participants highlighted that clinical reasoning is used in a clinical/healthcare setting, and that it is a “medical” construct. This is consistent with the idea that a different term such as professional reasoning (Schell & Schell, 2008; Unsworth & Baker, 2016) or therapeutic reasoning (Kielhofner & Forsyth, 2002) may be more inclusive of community-based or other non-clinical settings. As noted, however, one participant disagreed and indicated clinical reasoning applies across professional contexts within occupational therapy, suggesting there is not a clear relegation of clinical reasoning to clinical contexts for all educators.

Participants also highlighted that clinical reasoning contributes to ethical decision-making in practice. In her Eleanor Clark Slagle Lecture, Rogers (1983) stated that clinical reasoning involves gathering ethical information (among other things) to make judgments in the therapeutic process and identified that “the clinical reasoning process terminates in an ethical decision, rather than in a scientific one, and the ethical nature of the goal of clinical reasoning projects itself over the entire sequence” (p. 602). Although the term “ethical reasoning” exists, along with the complementary term “moral reasoning,” within occupational therapy (Howard et al., 2020; Penny & You, 2011), it is often described as a “type” of reasoning that falls under the overall umbrella of clinical (or professional) reasoning (Unsworth & Baker, 2016). Although there was high consensus about elements that make up the definition of clinical reasoning, the disagreement about terminology – including disagreement about the terms clinical, professional, and therapeutic reasoning – is consistent with the findings that there are many terms in the health professions used to refer to reasoning processes (Young et al., 2020).

Participants saw critical thinking as an essential component of clinical reasoning that informs decision making. This is consistent with Berg and colleagues' assertion (2021) that clinical reasoning and critical thinking are different constructs (though the terms are often used interchangeably) and that critical thinking is a precursor or necessary element of clinical reasoning. Further, in their concept analysis of professionalism, Lecours and colleagues (2021) found that critical thinking was an attribute of reasoning behaviors in occupational therapy. Participants also saw reflection as an essential component of clinical reasoning. This is not surprising as a commonly cited definition for clinical/professional reasoning from Schell (2019) includes "reflect" as one element of the process.

Professional Reasoning as Defined by Occupational Therapy Educators

While endorsing professional reasoning as a broader term that goes beyond the clinical/healthcare setting, most participants nonetheless agreed that professional reasoning is very similar to clinical reasoning. As noted, the perspective of similarity between these terms is supported by the AOTA OTPF-4 (2020) use of the same definition for both terms and with some authors' articulation that they see the term professional reasoning as more inclusive (Schell & Schell, 2008; Unsworth & Baker, 2016). Participants described professional reasoning as a process of decision making or problem solving using a variety of knowledge sources (e.g., education, experience, evidence) over the entire process of care (i.e., evaluation, assessment, treatment, and therapeutic relationship), which is consistent with the consensus definition of clinical reasoning from our panel. They also indicated that professional reasoning includes decision-making related to interpersonal interactions and ethics. These concepts are also seen in clinical reasoning literature (Maruyama et al., 2021; Rogers, 1983), suggesting further similarity in definitions of professional and clinical reasoning.

Whereas participants described critical thinking and reflection as components of clinical reasoning, they considered that professional reasoning includes clinical judgement and requires assessment of quality of thinking, beliefs, and actions. Interestingly, critical thinking and clinical judgment are interrelated concepts (Victor-Chmil, 2013). Further, reflection or reflective practice also includes assessment of quality of thinking, beliefs, and actions, as our participants also identified (see reflective practice section below), further suggesting that participants thought about clinical and professional reasoning as involving similar or interrelated elements.

In contrast to existing literature, though, participants distinguished professional reasoning from clinical reasoning in endorsing that professional reasoning is related to professional decision-making, professional behaviors, and scope of practice, with outcomes related to professional decisions, including administrative decisions. They agreed, albeit through the only item that just met the 70% consensus threshold, that professional reasoning explicitly demonstrates occupational therapy's unique/distinct contribution and has particular relevance for practitioners on interdisciplinary teams. Interestingly, although literature distinguishes occupational therapists' clinical reasoning from reasoning in other professions (Gillette & Mattingly, 1987; Maruyama et al., 2021; Young et al., 2020), literature on how professional reasoning explicitly focuses on

occupational therapy's unique value/contribution is sparse. Parkinson et al. (2011), however, did note that "practitioners should become as proficient as possible in their professional language" and "thereby, develop their professional reasoning skills, as opposed to the more general skills of clinical reasoning" (p. 149), thus suggesting a significant difference in how professional reasoning relates to professional identity and knowledge.

Finally, participants described that professional reasoning involves exploration and imagining new possibilities for/ways of thinking about practice/clients. This suggests a creative element. Creativity has been associated with clinical reasoning in occupational therapy (Hagedorn, 1995) and imagining new possibilities for clients is a component of narrative reasoning specifically (Mattingly, 1991). Beyond reasoning literature, creativity is broadly associated with occupational therapy as a profession (Oven & Lobe, 2020; Schmid, 2004), and artistry is often connected to Schön's construct of reflective practice (Kinsella, 2009). If, as our participants agreed, professional reasoning is related to occupational therapy's unique contribution to practice, perhaps further research should explore professional reasoning in connection with creativity and reflective practice.

Reflective Practice as Defined by Occupational Therapy Educators

Participants considered reflective practice to be a continuous and intentional engagement in meta-cognitive reflection on the occupational therapy process. This idea ties in well with Schön's (1983) notion of reflective practice that encompasses both reflection-in-action and reflection-on-action. Participants did explicitly identify that reflective practice includes thinking *before* action and *after* action (i.e., about why something went well or did not work) to adjust future actions, a direct parallel to Schön's concept of reflection-on-practice. Participants did not, however, specifically identify reflection-in-action. However, in noting that the process is continuous, they may have been suggesting they saw it as occurring during practice also. Alternatively, this may be a place where ideas on reflective practice differ in education and theory/literature.

Reflection, about oneself as a practitioner and about the person receiving services, was identified as complementary elements of reflective practice. For our participants, practitioners' reflection about themselves included self-assessment of one's own strengths and limitations as a practitioner and progress towards one's own goals as well as soliciting feedback from others. Participants also described reflective practice as requiring engagement in professional development related to perceived competencies. These ideas are consistent with literature on reflective practice as "an approach to professional development" (Kinsella, 2001, p. 198) and requiring "critical reflection of one's own performance" (Nicola-Richmond et al., 2016, p. 101).

In relation to reflection on clients, participants described reflective practice as involving review of notes, goals, intervention, and/or assessment findings as well as specific use of outcome measures and *how* clients do things (e.g., through activity analysis) and making changes to future practice to improve those outcomes. This component of reflection most clearly ties to clinical reasoning, as described above, and parallels the second half of Nicola-Richmond and colleagues' (2016) definition of reflective practice,

“understanding the role that critical reflection plays in professional practice and clinical reasoning” (p. 101). Participants agreed that reflective practice is required to achieve clinical or professional reasoning, further solidifying the idea that reflection is not the same as clinical reasoning (Knightbridge, 2019), but rather is part of the reasoning process.

Participants identified that reflective practice includes applying a critical lens to *what* you are doing and *why*, including attitudes, biases, assumptions, beliefs, knowledge, skills, and experiences. Mezirow (1991), an education researcher, included critical reflection as a step in the adult learning process where one reflects on concepts that fit uncomfortably within their point of view. This is similar to our participants’ ideas that interrogation of perspectives should occur regardless of how well they match the context. Nonetheless, critical reflection has different meanings depending on the tradition from which it comes; for example, in connection to Critical Social Theory, critical reflection is about critiquing systems of power (Brookfield, 2000). Thus, terminology around critical reflection may warrant further investigation to clarify how it is viewed by occupational therapy educators.

Evidence-Based Practice as Defined by Occupational Therapy Educators

Participants described evidence-based practice as using the best available evidence, including peer-reviewed literature and population-based evidence, client factors, and clinical expertise/experience, to guide decision-making. As noted, this is not always how evidence-based practice is understood by therapists, who have reported considering evidence-based practice as including only research-based evidence (Bennett et al., 2003; Garcia et al., 2020; Graham et al., 2013). However, it *is* consistent with AOTA’s (2021) description of evidence-based practice as integrating not only critically appraised research, but also clinical expertise and client preferences, beliefs, and values.

Participants endorsed evidence-based practice as a conscious process, and one that included outcome measurement and reflection. Benfield and Johnston (2020) noted that outcome measurement is not explicitly part of evidence-based practice, but they did include it in their model of Evidence-Informed Professional Thinking. Educators’ understanding of evidence-based practice thus seems to surpass the basic definition of using evidence and includes a cycle of reflecting on outcomes to inform future use of evidence.

Participants indicated that evidence-based practice should apply theory and inform the application of scope of practice to ensure work is grounded in the profession. Therapists do not always identify these as elements of evidence-based practice, although it is possible that better incorporating theory into evidence-based practice would enhance application/implementation (Garcia et al., 2020; Graham et al., 2013). Researchers continue to debate the contribution of theory to evidence-based practice (Marr, 2017).

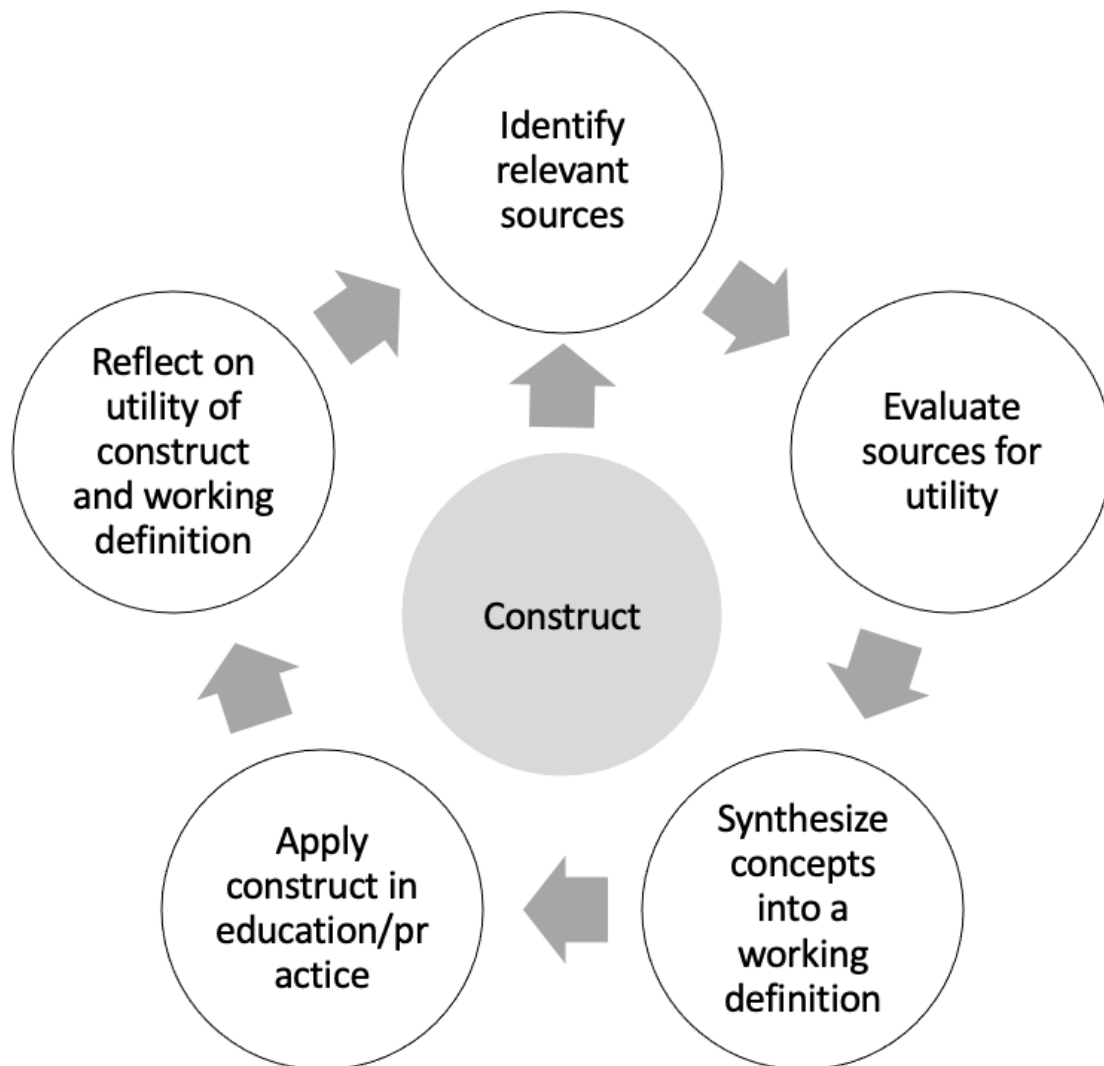
Limitations

Although a small sample size is appropriate for this study's methodology, the relatively small number of participants on the panel may have influenced IQR values (Birko et al., 2015). Thus, these should be interpreted with caution. Further, although participants' ability to consider their perspective without undue influence from other panel members is a strength of the methodology, the linear nature of the Delphi process makes evaluating complex constructs challenging as participants are not able to dialogue about their ideas. This was complicated, in our study, by the "I don't know" response that participants may have used to indicate either that they did not understand the statement/concept or that they felt unqualified to evaluate it. Future Delphi research on this topic may benefit from having distinct responses for "I don't understand the statement" and "I don't feel qualified to respond."

Finally, as noted, some participants expressed difficulty distilling the definitions of some terms into discrete statements. Some confusion may have been alleviated through use of the term "includes" instead of "is" (e.g., "clinical reasoning includes..." instead of "clinical reasoning is...") as was suggested by one participant (DD12). In this study we wanted participants to consider core aspects of each construct, not just what might be included in a construct (Burke et al., 2023). Directions were thus further clarified in the final round; however, wording of statements and clear instructions about how to think about statements will be important for future researchers to consider to ensure agreement is rated appropriately. Additionally, other less linear methods for exploring educator definitions, like concept maps (Conceição et al., 2017), may lead to more expansive and/or comprehensive results.

Implications for Occupational Therapy Education

Occupational therapy educators can use the working definitions of clinical reasoning, professional reasoning, reflective practice, and evidence-based practice developed through this research to examine their own conceptualizations of these professional skills. Conceptualizations developed by the occupational therapy educators comprising our participant panel can be compared to those in existing literature and those held by the individual to develop a working definition. Moving forward, educators should be clear in their use of an explicit definition for these skills, including in course syllabi and assignment rubrics, laying a foundation for consistency in application of these terms to practice. Occupational therapy educators must be explicit with students about the potential differences in how professional skills are defined by other professionals within occupational therapy practice/education and within occupational therapy literature. Finally, occupational therapy educators should continue to reflect on current literature about essential professional skills to identify how it compares with their own conceptualizations of these skills. Such reflection will need to be iterative to enable concept clarification, as depicted in Figure 2.

Figure 2*Suggested Iterative Process for Concept Clarification***Conclusion**

Although occupational therapy literature is not always clear about definitions of professional skills, these findings suggest that occupational therapy educators agree about key elements of clinical reasoning, professional reasoning, reflective practice, and evidence-based practice. This agreement can be used to advance empirical work by supporting the development of item probes for measurement of professional thinking, as was suggested as needed by Benfield and Johnston (2023). Disagreement exists about terminology related to reasoning. The overlap between definitions of terms makes it difficult to disambiguate them. However, given the complexity of the constructs, it is promising that educators largely agreed about key features of each. Findings presented

here have laid groundwork for future exploration of these participants' conceptualizations of relationships among these essential skills. In addition, researchers should explore areas of discrepancy amongst and between educators and the literature as this may elucidate reported lack of engagement in these key skills by practicing therapists. Beyond this, future research could explore practicing therapists' conceptualizations of these skills to further our understanding of how terms become integrated into clinical practice once students leave the educational context. Clarity of concept regarding reasoning, reflective practice, and evidence-based practice in occupational therapy will support both education and research related to these essential professional skills.

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