

Reflection and Reflective Practice: Creating Knowledge through Experience

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ABSTRACT

Reflection and reflective practice are popular concepts in the health professions that have yet to be rigorously addressed in audiology literature. In this article, a select summary of the theoretical bases of reflection and reflective practice are presented, highlighted with practical examples. The potential for reflection and reflective practice to benefit audiology education and practice is discussed. A nondichotomous approach to including a reflective epistemology of practice in audiology is recommended. Also highlighted are the centrality of experience to knowledge development and attention to reflection-in-action as a *way of being* professional practitioners. Also, *critical reflection* is identified as crucial to uncovering assumptions that underlie our practices and challenging oppressive discourses and systems, toward moving the profession forward in a spirit of optimized patient/client care. Although this article is conceptually focused and not a broad literature review, some early research in audiology related to this topic is reviewed briefly and practical approaches to fostering reflective practice also are considered. Reflection and reflective practice offer generative possibilities for the rigorous development of knowledge based in practice and experience, crucial to balancing other practice approaches such as evidence-based practice.

KEYWORDS: Reflection, reflective practice, practice-based knowledge, experiential learning, education

Learning Outcomes: As a result of this activity, the participant will be able to (1) differentiate between reflection, reflective practice, reflection-in-action, reflection-on-action, and critical reflection, and (2) identify the implications of reflection and reflective practice for audiology education and practice.

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Glossary

Concept	Definition	Reference
Anticipatory reflection	Reflection that occurs in anticipation of a specific situation or systemic, task-oriented reflection in the context of planning ahead.	1,2
Constructionism	In contrast to the individualistic nature of constructivism defined below, constructionism involves the social world as a source of meaning making and emphasizes interactions and interpretations between human beings and their social worlds.	3
Constructivism	Epistemological position that holds that individuals experience the world uniquely, constructing knowledge that is in flux rather than found in static form. In terms of practice, practitioners make meaning based on reflective conversations that they hold with the materials of their situation, which results in a remaking of the practitioners' practice world.	4-6
Critical companion	A dialogic partner, who promotes one's reflective thinking through listening, enabling, challenging, critical questioning, and supporting development and growth.	7-9
Critical reflection	A critique of assumptions about the content or process of problem solving, or making a taken-for-granted situation problematic, raising questions regarding its validity and recognizing the role of power. Focuses on systemic and social issues through multiple lenses.	10,11
Eudaimonia	An Aristotelian concept, which in health professional practice has been defined as genuine happiness and human flourishing for the patient, "whatever that means for the individual patient/client."	12(p255)
Guided reflection	Reflection that occurs in collaboration with a mentor, peer, or critical companion.	9
Indeterminate zones of practice	The uncertain, unique, and value-conflicted situations of practice, in which technical problem solving may not be sufficient. Indeterminate zones of practice are central to professional practice.	5
Knowing-in-action	Intelligent action we demonstrate, which is publicly observable, with the knowing residing in the action.	13
Phronesis	An Aristotelian concept, phronesis is deliberation about values with reference to praxis (theory to practice). Phronesis is pragmatic, variable- and context-dependent, oriented toward action, and based on practical value rationality. Phronesis is related to ethics, but is not analogous to it; there is no modern-day analogous term. Phronesis provides a complementary conception to research-based practice.	12,14,15
Professional artistry	"A high-powered, esoteric" type of competence exhibited in everyday acts of "recognition, judgment, and skillful performance."	5(p22)
Reflection	"Active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it and further conclusions to which it tends."	16(p6)
Reflection-in-action	Reflection in the midst of action without interruption or temporal delay; our thinking reshapes what we are doing as we are doing it.	5
Reflection-on-action	Intentional reflection on action of the past, to make sense of the action and possibly learn from it, thus a way of learning or generating knowledge from experience, which will potentially influence future action. Can take many forms, often written.	5,13

(Continued)

Concept	Definition	Reference
Reflective practice	A way of practicing, emphasizing processes of critical consideration (based on multiple sources of knowledge) and resultant improvement of clinical actions before, during, and after clinical actions take place.	13,17
Schön's epistemology of practice	Traditionally, technical rationality has been the dominant epistemology of practice. Schön suggests an alternate epistemology of practice, beginning with the practitioner's practice experience, including artistic, intuitive processes used to navigate uncertain, unstable, unique, and value-conflicted situations (indeterminate zones of practice).	13,18
Tacit knowledge	The often unspoken knowing that guides us in intelligent action; it is the notion that it is difficult to put into words how we know how to do certain things.	13,18,19
Technical rationality	Dominant epistemology of practice in which professional activity consists of instrumental problem solving through application of scientific theory and technique.	13

REFLECTION AND REFLECTIVE PRACTICE: THEORY AND APPLICATIONS IN AUDIOLOGY

Reflective practice is one of the most commonly cited topics in the broad field of professional knowledge and competence.²⁰ Professions that have discussed the use of reflective processes in the context of professional knowledge and development include business,²¹ education,^{5,13,22} medicine,²³ nursing,²⁴ occupational therapy,¹⁴ physical therapy,²⁵ and social work.²⁶ Common threads in the reflective practice literature across disciplines include its potential to bring otherwise tacit elements of practice to the surface,²⁷ to help professionals develop their practice knowledge and expertise,²⁸ to lead to questioning of assumptions,¹⁴ and to stimulate or complement critical thinking^{29,30} and evidence-based practice (EBP).^{31–33} Yet, despite the popularity and potential benefits of reflective practice, the hearing health care profession of audiology has been slow to explicitly and rigorously attend to the theories of reflection, evidenced by the paucity of literature on the topic within the field. In this article, I outline the theoretical background of reflection and reflective practice and propose three key considerations in carefully adopting the theory for audiology, summarize early attempts to bring scholarship about reflective practice into the field of audiology, and outline potential ways to foster reflection in audiology students. Practical

examples are used to highlight concepts throughout the article. I conclude this article by posing a research question to begin to fill the void of literature on this topic in audiology. This article is written in a style that models a reflective mode of inquiry to prompt the reader to engage in similar to engage in similar processes. Readers are referred to the glossary at the end of this article to become familiar with some of the vocabulary of reflective theories.

Different theorists and disciplines have theorized and applied reflective practice in a variety of ways, making it confusing for newcomers to navigate their way through the large body of literature. The danger in this confusion is the possibility for reflection and reflective practice to be dismissed, misinterpreted, or oversimplified. Although most thoughtful considerations of reflective practice share the same roots, many offshoots and branches also exist.³⁴ The offshoots exist, in part, because the reflection literature spans a range of perspectives and applications. Thus, it would benefit a discipline in the early stages of theorizing about reflection and reflective practice to take some time to study the theoretical foundations of these topics. A critical challenge, identified by my early attempts to discuss reflective practice in audiology, lies in framing reflection so that it is *accessible* and *appealing* to a profession strongly governed by what the “father” of reflective practice, Donald Schön, has called “technical rationality.”

Technical rationality is defined by Schön as the dominant epistemology of practice in which professional activity consists of instrumental problem solving through application of scientific theory and technique.¹³ Clearly, there are many problems in practice that elude technical solution. Reflective practice is thus offered as a complementary epistemology of practice.¹³

THE ORIGINS OF REFLECTIVE PRACTICE

An understanding of the theoretical background of reflective practice is necessary to avoid generic and nonspecific approaches and misinformed or insincere application. Reflection and reflective practice are related but different constructs, but it is helpful to understand reflection even if one's focus is on reflective practice. Reflection is a way of thinking, which may manifest itself in learning, practice, or in one's way of being. Reflective practice is a way of theorizing about the embodied and tacit, and intentional and explicit, forms of reflection within professional practice.³⁵ To fully appreciate Schön's conception of reflective practice, it is helpful to understand reflection as it relates more basically to thinking, knowledge, learning, and education.

Moon³⁴ identifies four main theorists whose work she contends makes up the "backbone" of scholarship in reflection as it relates to learning and professional development. These theorists are: educational philosopher John Dewey,^{16,36} whose seminal work explores reflection from a psychological perspective as it pertains to education; critical philosopher Jürgen Habermas,³⁷ who views reflection in an epistemological sense, as a way toward emancipation; David Kolb,³⁸ who positions reflection as one piece within an experiential learning cycle; and applied philosopher Donald Schön,^{5,13,39} who popularized the concept of reflective practice in the context of professional practice. Redmond⁴⁰ also includes the above four theorists in her overview of key thinkers in reflection. Of these four main theorists, only Schön focuses on reflective *practice*. Dewey, Habermas, and Kolb focus on reflective thinking in learning and education, critical reflection, and experiential learning, respectively.

The following section serves as a map of reflection and reflective practice beginning with the four main theorists mentioned above with reference to some additional thinkers who have continued their work. I conclude this section with a summary of important themes of reflection as they relate to reflective practice.

Dewey: Experience and Reflection in Education

Pragmatist philosopher Dewey defines reflective thought as "active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it and further conclusions to which it tends."¹⁶ Dewey suggests that without reflection, action is merely impulsive and self-serving. The two subprocesses of reflective thinking include: (1) a state of perplexity, hesitation, or doubt and (2) an investigation to support or disprove the suggested belief.¹⁶ In other words, by looking deeper into one's uncertainty (echoed in Schön's indeterminate zones of practice, discussed later), one can develop new insights in a process of shaping knowledge based in experience.

The two subprocesses of reflective thinking outlined here are embedded within most explorations of reflective practice, in some form. For example, Dewey's subprocesses can be found in Benner's²⁴ critical incident analysis for nursing practitioners. Benner²⁴ encourages nurses to reflect on experiences critical to their practice, including those that are especially ordinary, particularly demanding, or incidents that went unusually well. This suggestion aligns with Dewey's first step in reflective thinking: identifying an uncertainty. Next, these critical incidents should be reflected upon in terms of context, why the incident was critical, what the practitioner's concerns were at the time, and how one might accordingly adjust future practice.²⁴ This step aligns with Dewey's second stage of reflective thinking, with the nurse or practitioner investigating the reasons for their previous uncertainty. Benner²⁴ views the critical incident analysis as a way to facilitate study of expert practice and to move novice practitioners toward expert levels of practice.

Dewey¹⁶ suggests that when confronted with a problem, a reflective thinker reflects on theories to find a solution. These theories are based on past experience and prior knowledge. Thus, the role of reflection in the process of creating new knowledge based in experience is emphasized. Experience is an especially important aspect of Dewey's work.

In fact, Dewey^{16,36} proposes an educational philosophy based in experience and criticizes the "traditional" education system of his time. Dewey's³⁶ philosophy of education involves two related components. First, Dewey discusses continuity; for an experience to be educationally worthwhile, it must in some way have a long-lasting impact on the learner. This prerequisite is called *continuity of experience*. Second, Dewey emphasizes interaction; the interaction of *objective conditions* (such as empirical evidence) and *internal conditions* (such as knowledge from personal experience) are necessary to make an educational experience valuable. That is, an educational experience in which a student actively learns and acquires meaningful knowledge, rather than passively receives information, is necessary for a successful learning experience that will have longevity of impact. Dewey's³⁶ educational philosophy of experience is an early example of a call for consideration of various sources and alternative conceptions of knowledge in education.

Dewey's^{16,36} philosophy of education may thus be credited with positioning experience in the center of learning and highlighting reflection (including reflection on experience) as a crucial step in learning, acquiring, and creating knowledge. These are ideas that Kolb³⁸ later developed in his model of experiential learning.

In summary, the following are key points relevant to reflection from Dewey's work: experience as a source for knowledge and central component of learning, and the role of reflection in transforming actions and experiences into meaningful learning and pushing knowledge to another level. These themes also recur in the work of the following three theorists.

Habermas: Reflection for Emancipation

Critical philosopher Habermas³⁷ was part of a movement away from thinking about reflection

pragmatically only, toward an emancipatory ideal. Habermas served as inspiration for others, including Brookfield, Carr and Kemmis, and Mezirow, to continue to develop the concept of critical reflection.^{10,41,42} Critical reflection is distinguished from reflection by Mezirow.¹⁰ Mezirow states that reflection is the "process of critically assessing the content, process, or premise(s) of our efforts to interpret and give meaning to an experience," whereas critical reflection considers the "critique of assumptions about the content or process of problem solving . . . making a taken-for-granted situation problematic, raising questions regarding its validity."^{10(p104-105)} Critical reflection places emphasis on systemic and societal conditions and more explicitly seeks change and emancipation.

As previously discussed, Dewey¹⁶ was concerned that action is reduced to habit and impulse in the absence of reflection. Similarly, Habermas³⁷ is concerned about uncritical acceptance leading to hegemonic perpetuation. Habermas³⁷ identifies three broad areas for knowledge generation: technical, practical, and emancipatory. Technical knowledge is, most commonly, associated with empirical-analytic sciences. Practical knowledge, on the other hand, is mostly tied to "historical-hermeneutic" sciences, which are more concerned with language and meaning.³⁷ Habermas³⁷ associates emancipatory knowledge with critical social science, which focuses on overcoming societal constraints and creating change. Habermas³⁷ argues that it is in the third area of knowledge generation, emancipation, that critical reflection is most crucial.

From the critical reflection perspective, reflection is necessary to help reveal systemic and societal controls that otherwise obstruct freedom to acquire knowledge.³⁷ The goal of reflection for Habermas is transformation of self, personal, or social worlds. In other words, by reflecting critically, people can become aware of their assumptions and how they are being influenced by societal presuppositions. This awareness can then lead to the development of alternative social structures.³⁷ For Habermas, technical and practical knowledge are clouded by existing social structures and thus cannot lead to the same degree of change

and improvement. Habermas suggests that reflection leading to emancipation is not something that empirical-analytic disciplines can readily achieve.^{34,37}

In summary, Habermas³⁷ was interested in uncovering and understanding meaning in practical, social science disciplines, and he differentiated this from the goals of technical disciplines. Critical reflection, or reflection upon assumptions and problematization of taken-for-granted situations,¹⁰ is thus informed by Habermas³⁷ concern with emancipatory interests as they relate to human knowledge. In audiology, critical reflection can be useful for bringing taken-for-granted assumptions and situations into light and for identifying and navigating ethical dilemmas and systemic challenges. Although critical reflection and Dewey's pragmatic reflection are distinct, they are compatible and complementary. Habermas places a critical lens on reflection, and his work can be applied to professional practice.

CRITICALLY REFLECTIVE PRACTICE

Brookfield¹¹ theorizes about critical reflection in professional practice. According to Brookfield,¹¹ critically reflective practitioners constantly try to discover and research the assumptions that frame how they work. This research occurs by seeing practice through four complementary lenses: (1) one's own autobiography as a learner of reflective practice; (2) the learners' (or in a health profession, the patients'/clients') eyes; (3) colleagues' perceptions; and (4) theoretical, philosophical, and research literature. Brookfield's¹¹ discussion of theoretical literature as a lens through which to see our own practice resonates with my experience of learning of the theory of reflective practice. A brief exposition of how critical reflection opened up my worldview and strengthened my resolve to practice optimally is shared next.

Brookfield writes: "Theory helps us 'name' our practice by illuminating the general elements of what we think are idiosyncratic experiences . . . theory can help us realize that what we thought were signs of our personal failings as practitioners can actually be interpreted as the inevitable consequence of certain economic, social, and political processes."¹¹(p200) Before I

was introduced to the literature surrounding reflective practice, I held within me many unspoken tensions about professional practice issues in audiology. I did not possess the language of reflection and reflective practice, so I doubted that what I was experiencing and how I was processing my experiences could be valid. I felt disheartened and wanted to change the status quo or at least find a way to practice optimally within it. Yet, I was unsure of how to solve the problems I was seeing, with my limited tool kit for approaching practice problems—a tool kit that I had filled with the technical-rational tools that I had acquired in school. When I began to read Schön's *The Reflective Practitioner*,¹³ I felt emancipated. I was given the gift of a language with which to voice and explore my concerns, and with this I could begin to address some of the issues in which I was immersed. Despite my appreciation for this new ability to "name" my practice, I must state with certainty that one could not be a good audiologist without a well-equipped technical tool kit. Audiology has not widely embraced the theory of reflection and reflective practice and will likely always rely heavily on technical rationality, with good reason given the context of the profession's practices. Thus, in terms of accessibility and appeal to the field of audiology, Schön's epistemology of practice benefits from explanation of how reflection has been theorized in various contexts. Audiology borrows some of its theoretical basis from cognitive psychology; thus I suggest that the cognitive psychology-based "cycle" of experiential learning³⁸ may serve the goal of making the theory of reflection and reflective practice accessible and appealing to the field of audiology.

Kolb: Reflection in Experiential Learning

Kolb³⁸ places reflection within an experiential learning cycle. Kolb³⁸ views learning as a continuous process grounded in experience, which aligns with Dewey's³⁶ emphasis on experience and continuity. Kolb also views learning as tension- and conflict-laden, which corresponds with: Dewey's problems that arise in learning, Habermas' purpose for reflection in the development of emancipatory knowledge, and Schön's^{5,13} indeterminate zones of practice to be discussed later.

Kolb³⁸ suggests that learners require four types of ability to effectively learn: concrete experience abilities, reflective observation abilities, abstract conceptualization abilities, and active experimentation abilities. For Kolb,³⁸ reflection mainly serves as part of the experiential learning process, but his writing has been clearly identified as part of the history of reflection and learning theory.³⁴ Kolb³⁸ explores the relationship between knowledge and learning; to understand learning, we must understand what constitutes knowledge because knowledge is the outcome of learning. We must be able to envision knowledge that is borne of personal and professional experience, and not only knowledge that is derived from scientific research evidence.

I agree with Moon,⁴³ who suggests that Kolb's experiential learning cycle, although highly popular, is neither complete nor self-sufficient. However, I believe the cycle is an important starting point for audiology because it is a well-known, practical theory derived from a cognitive psychology perspective, that positions reflection clearly within the process of experiential learning. Building on Kolb's work, Moon⁴³ summarizes seven points that characterize experiential learning: (1) it is not usually "taught" in a traditional sense; (2) rather, the material of learning is usually direct experience; (3) it is potentially more meaningful, potentially empowering due to the way experiential learning is used; (4) reflection is either deliberately or unintentionally involved in most cases of experiential learning; (5) action is involved; (6) feedback takes place; (7) it involves formal intent to learn. The fourth point is worth expanding upon. Reflection is intertwined with experiential learning and, arguably, is necessary for optimizing experiential learning. However, reflection can take place outside of experiential learning. For example, reflection on preexisting knowledge and ideas can make them deeper and more meaningful.⁴³

Kolb³⁸ emphasizes that learning is a process that should not be measured in terms of finite outcomes because of its dynamic nature. Drawing from Dewey, Kolb³⁸ states that ideas are formed and re-formed through experience and that no two thoughts are ever the same, because experience intervenes. Kolb suggests

that rather than memorizing knowledge and allowing the knowledge gained to remain static, we should aim to continually learn through experience. Furthermore, learning is actually an act of relearning and ever-changing and expanding learning, in that we do not start out each learning experience as blank slates. Indeed, Kolb³⁸ suggests that the process of learning is centered on a resolution of conflicts between opposing views, is intricately tied to the environment of the learner, and results in new knowledge.

In summary, Kolb's experiential learning theory is helpful because it emphasizes that reflection on its own, or experience on its own, is insufficient for effective learning. Relating this to professional practice, reflection plays a role in bringing together theories and past actions to (re)conceptualize practice, or to develop professional practice knowledge by making meaning from experience. The active experimentation phase of Kolb's learning cycle involves the testing of newly learned or developed theories. Moon's⁴³ work helps relate and distinguish experiential learning and reflection. Experiential learning always involves some form of external experience, whereas reflection can take place without any external input, but with an entirely internal experience (Moon⁴³ calls this "cognitive housekeeping"). Experiential learning usually involves reflection, and reflection is important to experiential learning, but reflection is separate in that it can occur without "new" material. That is, we can reflect on what we have already learned.⁴³ The challenge with this relationship is that to reflect on what we know likely transforms the preexisting knowledge, thus becoming a learning experience itself. Schön helps us distinguish reflection on an existing experience or prior knowledge from reflection as a part of a new or ongoing learning experience; his theory of reflective practice is discussed next.

Schön: Reflective Practice, Tacit Knowledge, Knowing-in-Action, and Professional Artistry

An important feature of Schön's theory of reflective practice is tacit knowledge, a form of knowledge discussed in detail by Polanyi.¹⁹

Tacit knowledge is defined as the often unspoken knowing that guides us in intelligent action; it is the notion that it is difficult to put into words how we know how to do certain things.¹³ The aim of Polanyi's¹⁹ writing is to bridge dichotomies that existed within conceptions of knowledge (for example, between subjectivity and objectivity, explicit and tacit knowledge, personal and practical knowledge). Polanyi¹⁹ himself bridged a dichotomy: he trained as a chemist and he wrote as a philosopher. Schön's reflective practice is influenced by Polanyi's¹⁹ notions of tacit knowledge.³⁵

Schön also names a tacit kind of knowing that we experience as practitioners: knowing-in-action. Knowing-in-action is similar to Polanyi's tacit knowledge, with perhaps more emphasis on the use of tacit knowledge in action. Schön⁵ describes knowing-in-action as the intelligent action we demonstrate, which is publicly observable, with the knowing residing *in* the action. For example, knowing-in-action is demonstrated by the physical act of riding a bicycle; even if we are able to skillfully perform this task, we may be unable to make the performance verbally explicit. Knowing-in-action thus occurs in the everyday practice life of a practitioner, spontaneously or automatically, but intelligently. If a practitioner encounters an indeterminate zone of practice (an uncertain, unique, conflicted, and challenging practice situation), professional artistry may come into play.

Schön explains professional artistry as a "high-powered, esoteric type of competence" exhibited in everyday acts of "recognition, judgment and skillful performance."^{5(p22)} Professional artistry is the competence used by practitioners to handle indeterminate zones of practice, and is rigorous in its own right.⁵

EPISTEMOLOGIES OF PRACTICE

For Schön,^{5,13} reflection is necessary because technical rationality alone is insufficient to provide practitioners with solutions to the indeterminate zones of practice. Well-formed problems that do lend themselves to technical rationality tend to technical rationality tend to occur on what Schön calls the "high, hard ground of professional practice." However,

Schön^{5,13} observes that many important professional practice issues defy technical solution; researchers and practitioners are often wading in a "swampy lowland"¹³ of professional practice, where reflection is necessary to identify and solve complex problems. To navigate this swamp, practitioners need to be equipped with an epistemology of practice.^{18,35} In Schön's^{5,13} epistemology of practice, he has turned the relationship between research knowledge and professional practice "upside down," focusing first on the question of what we can learn from professional artistry, instead of the more commonly prioritized question of how we can better make use of research knowledge.¹⁸

SUMMARY OF SCHÖN'S REFLECTIVE PRACTICE

Kinsella³⁵ suggests that tacit knowledge, knowing-in-action, and professional artistry are key aspects of Schön's^{5,13} theory of reflective practice, inspired by Polanyi.¹⁹ Schön draws from Polanyi's tacit knowledge in his alternative view of professional knowledge. Schön argues for the need to make tacit knowledge explicit in order for practitioners to improve their practice. Thus, Schön proposes knowing-in-action as a way to theorize the tacit knowledge that practitioners use in their everyday practice. Finally, Schön describes professional artistry as one way that practitioners can approach practice, especially in the indeterminate zones of practice that often defy technical rationality.³⁵ An important element of Schön's theory, the distinction between reflection-*in*-action and reflection-*on*-action, is discussed later in this article.

Schön's Constructivist Perspective

Schön discusses knowledge from a constructivist perspective:^{4-6,13,44} "When practitioners respond to the indeterminate zones of practice by holding a reflective conversation with the materials of their situations, they remake a part of their practice world and thereby reveal the usually tacit processes of worldmaking that underlie all their practice."^{5(p36)} We can attempt to make our tacit knowledge and knowing-in-action explicit, but Schön states that our descriptions of our knowing-in-action will always be constructions, or explicit, symbolic representations of tacit knowledge. Knowing-

in-action is dynamic, but facts and procedures are static.⁵

An understanding of the constructivist perspective that informs Schön's work helps in developing an appreciation for what Schön offers. For Schön, shifting from an objectivist to constructivist view of practice makes terms such as *truth* and *effectiveness* problematic. Truths and effectiveness are only relevant within a frame, or in other words, within given assumptions about what it means to know. "With their different ways of framing the situation, [different profession(al)s] tend to pay attention to different sets of facts, see 'the same facts' in different ways, and make judgments of effectiveness based on different kinds of criteria."^{5(p218)} An inflexible and restrictive frame may make it difficult to work productively with other professionals, who may be operating within a very different frame. A constructivist view of knowledge draws attention to the significance of reflective practice and professional artistry in the very *context-specific* lives of professionals and their patients/clients.

THE BACKBONE OF REFLECTIVE PRACTICE: THREE IMPORTANT THEMES FOR AUDIOLOGY

Nondichotomous Epistemological Perspective

Schön's work is perhaps most famous for its critique of technical rationality,²⁰ which is often interpreted as creating a dichotomy.³⁴ Yet, Kinsella¹⁸ suggests that rather than creating a dichotomous portrayal of technical rationality versus an epistemology of practice, Schön actually works to overcome such a divide. Schön¹³ suggests that we turn the problems of professional practice upside down. In other words, we could reflect on the experiential and contextual elements of practice, to set the frame of a problem, before we attempt to solve the problem in a technical-rational manner. Indeed, this approach is very different from a dichotomy. Schön¹³ does not suggest that we rid ourselves of technical rationality but rather, in many cases, we should consider and value alternative ways of approaching practice.

The discipline of audiology stands to benefit from a view that we should value knowledge grounded in practice, what Schön¹³ calls an "epistemology of practice," as a complement to technical or research-based knowledge.

Although Schön¹³ tentatively suggests that 85% of the problems of practice lie in indeterminate zones and are better served by artistry than technical solution, this may not be the case in audiology. Audiology is a profession in which science and technology contribute very significantly to good hearing health care. Still, practice that too rigidly relies on technical rationality and overlooks affective aspects of patient/client care leaves the patient/client less satisfied and with suboptimal outcomes.⁴⁵ Following the summary of three key themes of reflective practice, I reflect on common audiology cases that demonstrate the limitations of technical rationality as a sole approach to competent professional practice.

Schön⁵ viewed reflective practice as a bridge between the university world and practice world. Dewey³⁶ was disheartened by the gap between what is taught and what is learned through experience. He disagreed with a model of education that viewed knowledge as deposited into students (i.e., teacher feeds student knowledge), also referred to as a "banking model of education."⁴⁶ The theory-practice divide is noted as a challenge by many scholars of professional and practice knowledge.^{14,19,27,47,48} Many educational settings currently struggle to overcome the dichotomy of theory versus practice. Dewey,^{16,36} Habermas,³⁷ Kolb,³⁸ and Schön^{5,13,39} each highlight the importance of connecting theory and practice and of valuing practice knowledge. However, it is understandable that misinterpretations, especially of Schön's work, may be perpetuated without a careful interpretation of the original texts. Toward the goal of making reflective practice accessible and appealing to audiology, the concept of a nondichotomous epistemology of practice is crucial.

The Importance of Experience to Learning: Experience as a Valid Source of Knowledge

The centrality of experience in education and learning began with Dewey³⁶ and his philoso-

phy of experience for education. For Dewey, experience is vital to education. Kolb is credited with popularizing and theorizing experiential learning, and he defines learning as “the process whereby knowledge is created through the transformation of experience.”^{38(p38)} He notes that this definition highlights the experiential learning perspective by emphasizing adaptation and learning as opposed to content and outcomes. Further, the transformative process of knowledge, or the creation and recreation of knowledge, is highlighted in this definition. This definition of learning also contrasts with a model of education in which knowledge is acquired, transmitted, or deposited finitely. Such a model was opposed by Dewey and others, notably Habermas.³⁷

Schön¹³ also envisions a practice world that prioritizes the practitioner’s experience, with his call for an epistemology of practice. Schön³⁹ discusses reflecting-in and -on practice experiences, implicating active, dynamic process for improving practice, informed by both preexisting knowledge and in-action discoveries.

Although experiential learning can occur without our conscious awareness,³⁸ making it explicit can help us become more aware of the process and attend more carefully to potential experiential lessons, thus improving the effectiveness of the learning experience.¹⁴ Reflecting on experience can result in new perspectives,⁴⁹ novel action,⁴⁷ and transformation.³⁷

This theme is important for audiology because audiology is a profession that is striving for EBP as a guiding theory.^{50–52} EBP is important but in itself is insufficient; thus the explicit, scholarly, sincere exploration of experience as a source of knowledge is crucial to the balanced growth of the profession. Reflective practice offers a way to consider experience as a source of knowledge for practice, as an equal counterpart to EBP’s critical appraisal of research evidence.

The Need for and Role of Action: Pushing Boundaries through Dynamic Knowledge Creation and Use

There are two types of action that I describe in this section. First, I discuss action in a critical, emancipatory sense. Habermas³⁷ stresses the

importance of using knowledge to guide action, change, and transformation. According to Van Manen,⁵³ Habermas offers educators an intellectual form of practical reasoning and action, rooted in emancipatory concern; his perspective is capable of linking knowledge, theory, practice, and action, all centered on human interests. For Habermas,³⁷ action means significant change, at a personal and social level. Indeed, for the critical reflection theorists informed by Habermas, for example Brookfield and Mezirow,^{10,41} reflection can be used as a tool for questioning assumptions (which can lead to action), transforming perspectives, overcoming system- or society-imposed oppression, and ultimately improving one’s personal and practice life. I mention this as a key element of reflection for audiology because of the importance of questioning assumptions, challenging status quo, and advocating for change, if we are to foster practices that best support our patients/clients and satisfaction of audiologists. That is, reflection can have the power to spark change if action is taken based on the important knowledge created through reflection upon perturbations of practice or professional issues. In the absence of reflection, such perturbations may go unaddressed, or even unacknowledged. This way of thinking about reflection is important because it offers an emancipatory framework for audiologists to attend to ethical dilemmas and to advocate for systemic change and improvement.

REFLECTION-IN-ACTION VERSUS REFLECTION-ON-ACTION

Next, I discuss action in terms of daily professional practice. Schön¹³ states that our knowing is *in* our action. Eraut⁴⁷ offers a critique of Schön’s work, suggesting that his theory is fraught with ambiguity and inconsistency. In Eraut’s⁴⁷ attempt to clarify Schön’s message, he proposes a reframing of reflective practice around the aspect of action. Eraut⁴⁷ claims that Schön’s main contribution is to the theory of metacognition, or self-awareness of cognitive processes. Eraut⁴⁷ argues that although Schön emphasizes the notion of reflection-in-action, his examples actually focus exclusively on reflection on past actions.

In some respects, I disagree with Eraut's⁴⁷ critique. Schön's^{5,13} description of reflection-in-action refers to the expert use of tacit knowledge that has been developed through experience. Schön's reflective practitioner indeed may reflect on practice after it has occurred, but the practitioner also can make use of experiences to guide practice *as* it unfolds, or *in-action*. As explained above, this involves the use of tacit knowledge, which when enacted in practice, is seen as knowing-in-action. An example Schön³⁹ uses is that of a musician or athlete, who learns and improvises based on lessons that are learned and adapted quickly, online, during and within practice and play. Musicians and athletes also use reflection in a longer-term process of learning or playing. For example, musicians may listen to an audio recording of their playing, and athletes may watch a video recording of a game or practice session. Thus, Schön does not restrict reflection to any one temporal domain. Reflection-in-action and -on-action are both necessary to good practice, and knowing-in-action often underlies our practices. Of the two temporal domains, reflection-in-action is perhaps more difficult to develop or make explicit. However, reflection-in-action offers a valuable theoretical insight to audiology because it highlights the importance of in-the-moment problem solving and learning that does not exclusively occur following significant temporal delay.

Much literature on reflective practice emphasizes reflection-on-action, in the form of thinking back on practice or writing about practice. Yet, this view of reflective practice is narrow and incomplete. Reflection-on-action affords a change in future actions based on reflection upon past actions, and reflection-in-action offers the potential for change, refinement, or optimization within actions as they unfold, and the action taking place can still be impacted, seamlessly within the moment. In Schön's words:

Doing extends thinking in the tests, moves, and probes of experimental action, and reflection feeds on doing and its results. Each feeds the other, and each sets boundaries for the other. It is the surprising result of action

that triggers reflection, and it is the production of a satisfactory move that brings reflection temporarily to a close . . . When a practitioner keeps inquiry moving, however, he does not abstain from action to sink into endless thought. Continuity of inquiry entails a continual interweaving of thinking and doing.^{13(p280)}

REFLECTION-IN-ACTION IN AUDIOLOGY

Reflection-in-action refers to reflective processes that occur in the midst of action without interruption; our thinking reshapes what we are doing as we are doing it.⁵ An example of reflection-in-action in audiology occurs when a proficient, experienced audiologist is performing visual reinforcement audiometry (VRA) to assess infant hearing. This operant conditioning procedure requires the audiologist to present appropriate auditory test signals at various levels as required, present visual reinforcement when the infant performs a head turn after hearing the auditory stimuli, center the infant's gaze back to midline, and record all correct head turns, lack of head turns, false-positives, and control trials. This process involves operating several pieces of equipment at once and must be done in a seamless fashion, because infants have such short attention spans and are relatively unpredictable in terms of how they will react and respond to the procedure. The audiologist must be able to assess if the infant is developmentally ready to perform the VRA tasks and must efficiently and effectively monitor and make adjustments to her own performance, based on the infant's individual needs. I use the word *performance* here because it is both an art and a science to obtain accurate hearing thresholds from the infant while also ensuring that the experience is enjoyable, rather than unsettling or traumatic. A negative experience in the sound booth may make it difficult to regain the infant's trust for undergoing future assessment and habilitation. Further, the audiologist must make "on-the-fly" decisions when the assessment is not going as planned, whether the infant (1) will not condition to the task; (2) is frightened by the environment, stimuli, or reinforcement; or (3) simply feels irritable that day.

SUMMARY: A REFLECTIVE ROAD MAP

The literature about reflection contains many different interpretations. I have attempted to summarize what seem to be the common threads pertinent to audiology. Schön's work is considered seminal⁴⁰ and serves as a good introduction to reflective practice. However, reading works by some of the theorists who inspired or were inspired by Schön leads to a renewed, and potentially improved, appreciation for reflection and for interpretations of Schön's work. Schön's popularity is likely due in part to the eloquence and accessibility of the writing style.^{40,47} In addition, his popularity may be attributed to his critique of technical rationality as the primary source of knowledge for practitioners and his provision of an alternative or complementary conception—an epistemology of practice.^{18,44} Schön's critique of technical rationality also coincided with a growing disillusionment with positivism.⁴⁷ Critiques aside, the highly resonant characteristics of Schön's reflective practice¹⁸ have led to its popularity with practitioners and scholars interested in professional practice.

Although many others have written extensively on reflection, the four main theorists discussed in this article cover reflection from its practical application in education,¹⁶ role in learning,³⁸ role in professional practice,^{5,13} and purpose in emancipation.³⁷ Any practitioner or professional education scholar interested in reflective practice also could benefit from at least an awareness of the work of this group of four. Although each of the four theorists discussed above hold unique perspectives with respect to reflection and reflective practice, together they provide a unified, broad foundation for reflective audiology practice.

A CASE AND PLACE FOR REFLECTION IN AUDIOLOGY

"The predominant concern of educational practice has become an instrumental preoccupation with *techniques, control*, and with means-ends criteria of *efficiency* and *effectiveness* . . . The shortcomings of these modes lie in their preoccupation with the measurement of learning outcomes, the quantification of achievement, and the management of educational

objectives."^{53(p209)} Indeed, this quote from Van Manen resonates with my experiences and learning throughout my own education, practice, and teaching endeavors. Learning is an interactive, continuous process that can be negatively impacted by attempting to break it into measureable units.^{36,38}

In the current climate of professional practice in audiology, Schön's¹³ dilemma of rigor or relevance presents itself. Should practitioners and researchers stay on the metaphorical high, hard ground of professional practice, where technical knowledge can be employed to solve problems, or should they acknowledge and descend to the swampy lowland of practice, where professional artistry is required to navigate complex and important problems?¹³ Schön⁵ suggests that we experience the rigor or relevance dilemma when we realize the limitations of scientific research-derived propositions in practice. This notion describes my experience (and has been supported by recent research; see articles by Ng, Bartlett, and Lucy in this issue), entering practice as a student believing in EBP, touting its benefits, only to be confronted with the indeterminate zones of practice¹³ and the realization that the main source of evidence I knew was often insufficient to guide my professional practice. Upon a return to academia to tackle some of the critical problems I had experienced in practice, again I was surprised to find that my repertoire of quantitative research skills seemed to leave me ill equipped to reach my goals of researching and improving audiology education and practice. The problems I wished to explore were located in the swampy lowland, where a new way of thinking about knowledge, and a new set of skills, would be required.

According to Moon,³⁴ a goal of reflective practice is to improve the care of clients, and yet this goal is often neglected in the reflective practice literature. Flaming¹² explores the Aristotelian concept of *phronesis*. For Flaming, *phronesis* emphasizes *eudaimonia* (genuine happiness and human flourishing) of the patient/client, "whatever that means for the individual patient/client."^{12(p255)} According to Flaming¹² *phronesis* is deliberation about values with reference to *praxis* (the union of theory and practice¹⁴). *Phronesis* is pragmatic,

variable, and context-dependent, oriented toward action and based on practical value rationality. Phronesis is related to ethics, but is not analogous to ethics.¹⁵ Phronesis provides a complementary conception to scientific research-based practice. A practitioner striving for eudaimonia of the patient/client would use phronesis, deliberating about ethically correct action, in particular situations.¹² The goals of phronesis certainly echo those of reflective practice: "Reflective practitioners . . . examine their definitions of knowledge, seek to develop broad and multifaceted types of knowledge, and recognize that their knowledge is never complete. . . . They reflect on themselves, including their assumptions and their theories of practice . . . reflective practitioners recognize and seek to act from a place of praxis, a balanced coming together of action and reflection."^{14(p198)} Given the current climate of audiology (complex, in flux, fraught with ethical challenges), reflective practice and other theories that serve the goal of patient (and professional), such as the Aristotelian concept of eudaimonia, may be relevant to current needs.

A Brief Reflection—Audiology's Swampy Lowland

A very common ethical challenge in the current audiology climate is hearing instrument dispensing. In fact, this issue was raised by participants in a recent focus group to adapt a professional behaviors log⁵⁴ for use in audiology.^{17,55} Other examples of a need for critical reflection include aural/oral versus sign language approaches to habilitation, industry partnerships in research and practice, and auditory processing disorder identification and management. Here, Habermas³⁷ discussions about reflection may play an important role in allowing audiologists the freedom to reflect on the ways and systems in which they work and to find ways toward emancipation from the unsettling discourses and structures to which they feel bound.

Audiology has been slow to outwardly and deeply adopt reflective practice. I speculate that reasons for this may include a lack of exposure to reflective practice within audiology, biomed-

ical perspectives in audiology education programs, a predominant value for EBP focusing on a narrow definition of evidence at the cost of underemphasizing the practitioner's expertise and client's needs, and a relative lack of understanding and application of qualitative research methodologies (appropriate for studying reflective practice) in audiology. I posit that the best chance toward overcoming these potential barriers may be a nondichotomous conception of professional knowledge that includes reflective practice, as explained by Kinsella.¹⁸ We must not abandon EBP, technical solutions, or quantitative research methods. These aspects of the field are fundamental and indispensable. However, reflective practice does require openness to a complementary way of thinking about knowledge, and perhaps an adjustment in our value system. A move toward evidence-*informed*⁵⁶ reflective practice, a balanced epistemology of practice, may be in order.

Where Are We Now? Audiology's Journey into Reflection

I have reflected on why audiology may be slow to adopt reflective practice, as well as my rationale for attempting to change this resistance to appreciation. Next, I will summarize the early steps that audiology has taken toward a welcoming space for discussion and study of reflection.

Articles relating to professional issues and education are just beginning to emerge in the audiology literature. At the time of writing this article, three relevant peer-reviewed research articles were found, which addressed: (1) implementation of a service-learning approach, including guided reflection for speech-language pathology (SLP) and audiology students⁵⁷; (2) use of journal writing in the assessment of SLP and audiology students' learning about diversity⁵⁸; and (3) an action research approach at interdisciplinary learning, involving reflection.⁵⁹

These three studies involving audiology and/or SLP students have used reflection as part of a pedagogical approach. In one of these studies,⁵⁷ researchers evaluated the service-learning approach. The service-learning approach was described as an experiential, reflec-

tive, problem-based learning approach, placing students with a community partner as part of an academic course requirement.⁵⁷ One group of students completed a placement in an educational audiology setting (the other two groups were SLP placements). Students kept reflective journals as a part of this study, but these were not described in detail. Authors described the service-learning approach as a method that could help students see value in and need for ongoing reflection, documentation of EBP, and community roles.⁵⁷

In another pedagogical study, reflective journal writing was used to assess communication sciences and disorders students' learning about diversity, from beginning to end of a diversity course.⁵⁸ Journals were evaluated and ranked as descriptive, empathic, analytic, or metacognitive (level 1 through 4, respectively). Level 4 would be considered the deepest and most challenging form of reflection. Most journal entries were ranked at the descriptive/level 1 end of this scale, with just nine entries ranked as level 4, relative to 45 at level 1. The authors concluded that reflection is important to learning about diversity, but could be more beneficial if guided or actively fostered. Students did not improve in the depth of their reflections throughout the course, in which they were left alone to learn how to reflect. This finding supports the use of a guided approach to reflection, which has been cited by many as crucial to the success of the process.^{7,9,34,60} The authors also acknowledged that in formally evaluating the journals, students' writing may have been inhibited. Other authors also suggest that reflection is not only challenging to assess, but perhaps should not be assessed because it may influence the reflective experience itself.^{61,62}

In the work of Munoz and Jeris,⁵⁹ students and faculty members reflected as one part of a multitechnique approach at addressing the broad question of how to provide an interdisciplinary team approach to service learning. In this instance, critical reflection papers were deemed an effective means of collecting data and also allowed participants to recognize diverse worldviews and value different perspectives. Furthermore, participants learned that it was important to attempt to understand their

own views and those of others on an ongoing basis.⁵⁹ The study described above serves as an example of the use of reflection in research within the context of a participatory action project. In this methodology, reflection can serve as both a method for data collection as well as a tool for change and action.

These three attempts⁵⁷⁻⁵⁹ at incorporating reflection into audiology education demonstrate potential for the benefits of reflective practice, but perhaps more importantly, highlight a need for reflection to be studied further and in more depth within audiology. These studies also demonstrate a need for those guiding students in reflection to have an understanding of reflective practice. A capable mentor in the reflective process can facilitate meaningful and deep reflections in students who may otherwise complete superficial reflections for the sake of satisfying course requirements. These results also suggest that clinical training environments and universities must be supportive of a reflective approach. Finally, students may not be "ready" to reflect in a critical manner until they have gained some practice experience and maturity.⁶³ However, exposure to reflective practice early on may better equip students to become reflective and critical practitioners in the future and facilitate movement from basic competency to proficiency or even expertise.^{24,28}

Fostering Reflection in Audiology

Multiple approaches to engaging reflection exist, including reflecting upon critical incidents,^{24,64} keeping ongoing learning journals,³⁴ and adopting a guided reflection approach, which involves a fusion of teaching and research in which the "teacher" leads the learner through specific questions, with the goal of a transformative learning experience through reflection.⁹ Approaches also can be combined. For example, one could enlist a guided and structured approach to written reflection on critical incidents (which could be any significant experiences or events of practice that stimulate reflection). The guidance in this case could come from a more experienced and advanced peer mentor, posing questions and

probing for clarification and deeper thought. These reflections could be recorded as part of an ongoing practicum or practice journal.

A current scholar of reflection who is particularly committed to the goal of bringing reflective practice to the forefront of professional education is Kinsella^{1,6,14,18,35,44,65-67}. Kinsella¹ developed a succinct guide to assist a practitioner in becoming reflective, entitled *Professional Development and Reflective Practice: Strategies for Learning through Professional Experience, A Workbook for Practitioners*. The workbook is set up as a reflective approach to professional development. It explains in practical terms the concept of experiential learning, reflection on experience, anticipatory reflection, reflection-in-action, and various approaches to retrospective reflection such as uncovering assumptions, theories of practice (both espoused theories and theories in-use), case records, professional practice history, and annual self-reviews. This workbook may be used by a practicing audiologist interested in improving practice or by clinical instructors and students as part of clinical education.

Research Needs in Reflection and Reflective Practice

Research is needed to improve understanding of: what reflection offers, alters, and enhances; the role of reflection-in-action; positive and negative effects; and how it may be taught and learned.⁶⁸ Mann et al⁶⁸ found that students across professions reflect, that their ability to reflect is amenable to change, but that the circumstances surrounding the fostering of reflection are important to this development. Given the lack of existing empirical research relating to reflection in the field of audiology, an exploratory question is warranted. For example, "How is reflection enacted and implicated in audiology students' development as professional practitioners?" This question is addressed in a series of research articles (see articles by Ng, Bartlett, and Lucy in this issue).

CLOSING REFLECTIONS

Schön was my introduction to reflective practice and inspired me to look further. However,

I was able to do this because this was my research area for an extended period of time. Many professors in audiology programs and many practicing audiologists, students, and preceptors do not have this luxury. Fortunately, succinct summaries of reflective practice are now popular, providing enough theoretical background and practical examples to allow busy faculty members and clinicians to make use of the long history of reflection in learning, education, and practice without having to devote months to study. It is important to consider this theoretical background to avoid surface interpretation and application of reflection as merely a passing buzzword. Reflection and reflective practice, as described in this article, are deeply rooted in a long history of theory about knowledge and learning. Reflection is an inseparable part of learning from experience, and thus a vital component of practice and professional development. It may enable us to balance and support EBP with rigorous development of *practice*-based knowledge.

"Reflective thinking . . . involves overcoming the inertia that inclines one to accept suggestions at face value; it involves willingness to endure a condition of mental unrest and disturbance . . . [it] means judgment suspended during further inquiry; and suspense is likely to be somewhat painful."^{16(p13)} Audiology may be in the beginning stages of outwardly and intentionally adopting alternative approaches to knowledge, research, and practice including systemic issues. I believe that a *careful* consideration of reflection and reflective practice will help audiology overcome the "inertia" that threatens to challenge our growth as a well-rounded healthcare profession and academic field.

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