Linking the Art of Practice in Head and Neck Cancer Rehabilitation with the Scientists' Art of Research: A case study on reflective practice

Allier l'art à la science en réadaptation des cas de cancer de la tête et du cou : Une étude de cas portant sur la pratique axée sur la réflexion

Marie-Ève Caty, MPO, PhD Student
Health and Rehabilitation Sciences Graduate Program
Health Professional Education Field
Voice Production and Perception Laboratory and Postlaryngectomy Research Laboratory
Rehabilitation Sciences
Faculty of Health Sciences
The University of Western Ontario
London, Ontario Canada

Elizabeth Anne Kinsella PhD, Assistant Professor
Health and Rehabilitation Sciences Graduate Program
Director, INSPIRE
School of Occupational Therapy
Faculty of Health Sciences
The University of Western Ontario
London, Ontario Canada

Philip C. Doyle, PhD, Professor
Voice Production and Perception Laboratory and Postlaryngectomy Research Laboratory
Rehabilitation Sciences,
Faculty of Health Sciences
Department of Otolaryngology Head & Neck Surgery
Schulich School of Medicine and Dentistry
School of Communication Sciences and Disorders
The University of Western Ontario
London, Ontario Canada

Marie-Ève Caty
Elizabeth Anne Kinsella
Philip C. Doyle

Abstract
Despite the important role that speech-language pathologists (S-LPs) play in laryngeal cancer rehabilitation, there appears to be little training or continuing education for practitioners in this specialized area. This is a particularly demanding area of practice, and practitioners frequently encounter challenging situations with no clear pathway for treatment. Practitioners working in this area frequently appear to use processes of reflection to monitor the outcomes of their professional actions, to determine actions, and to become more skillful in practice. This paper examines how reflective processes may inform clinical decision-making and foster the development of professional practice knowledge for speech rehabilitation of clients who underwent tracheoesophageal (TE) voice restoration following total laryngectomy. A retrospective case study using a reflective practice framework was undertaken. Clinical problems encountered by an S-LP during the postlaryngectomy voice rehabilitation of two patients were analyzed and recorded. The findings suggest that a practitioner's processes of reflection on both general and specific issues of practice are important for advancing professional practice knowledge and for the development of expertise in head and neck cancer rehabilitation.

Abrégé
Malgré le rôle important que jouent les orthophonistes dans la réadaptation des personnes atteintes d'un cancer du larynx, peu de formations ou d'occasions de perfectionnement sont offertes dans ce domaine spécialisé, et particulièrement exigeant. Les praticiens sont souvent confrontés à des situations difficiles, pour lesquelles il n'est pas évident d'établir un traitement clair. Les praticiens œuvrant dans ce domaine semblent fréquemment recourir à une démarche de réflexion pour examiner les résultats de leurs actions professionnelles, pour déterminer les futures actions requises et pour améliorer leurs compétences clinique.
Dans le présent article, les auteurs examinent la façon dont la démarche de réflexion peut informer la prise de décisions clinique et favoriser l'acquisition de connaissances professionnelles lors de la rééducation de la voix trachéo-œsophagienne après une laryngectomie totale. Une étude de cas rétrospective fut menée en utilisant un schéma de pratique axée sur la réflexion. Les difficultés cliniques rencontrées par une orthophoniste au cours de la rééducation vocale post-laryngectomie de deux patients furent analysées et consignées pour cette étude.
Les résultats suggèrent que la démarche de réflexion d'un praticien, en ce qui a trait tant à des enjeux généraux que spécifiques de la pratique, est importante pour faire progresser les connaissances professionnelles et l'expertise dans le domaine de la réadaptation des personnes atteintes d'un cancer de la tête et du cou.

Key words: reflective practice, professional practice knowledge, expertise, laryngeal cancer, speech therapy

Postlaryngectomy rehabilitation encompasses more than the learning of a new mode of verbal communication. Monitoring all areas of postlaryngectomy functioning (physical, physiological, psychological, social, and psychosocial) is essential to offer the best level of care and, therefore, the best short- and long-term outcomes (Doyle, 1994, 2005). Parameters that influence the success of laryngectomy rehabilitation, such as psychosocial and sociodemographic factors, are mentioned as frequently as other influential key issues such as medical factors (Singer, Merbach, Dietz, & Schwartz, 2007). Despite this growing attention to the complexity of successful client outcomes, little research has examined the expertise of the practitioner and the implications for successful laryngectomy rehabilitation. Despite the obvious impact that clinician experience has on patient care and the resultant outcomes observed, such concerns are seldom addressed in the literature. For this reason, a critical question emerges relative to clinical practice. Specifically, the question raised pertains to whether therapeutic outcomes and comprehensive services are influenced by the expertise and experience of the practitioner.

Although Kasperbauer and Thomas (2004) acknowledge that successful vocal rehabilitation relies on the integrated expertise of the surgeon and S-LP, few other studies report on this topic. Indeed, little research addresses the nature and development of S-LP expertise whereas the development of professional expertise has been studied and written about in medicine (Moulton, Regehr, Mylopoulos, & MacRae, 2007), nursing (Cutcliffe, 1997), physiotherapy (Resnik & Jensen, 2003) and occupational therapy (Unsworth, 2001). The influence of S-LP expertise on assessment or therapy outcomes is essentially unknown. In his article *Toward a Theory of Clinical Expertise in Speech-Language Pathology*, Kahmi (1995) concluded that the profession's ideas concerning clinical expertise "need to be supported by future studies that address the relationship between the knowledge and skills that define clinical expertise and measures of treatment outcomes" (p. 356). More recently, while evaluating factors influencing therapeutic outcomes, Bernstein-Ratner (2006) also was concerned with the "therapist quality," highlighting the relationship between practitioner expertise and clinical outcomes. While research and continuing education opportunities have increased specialization in particular areas such as that related to head and neck cancer rehabilitation (McAllister, 2005), repeated findings continue to show that S-LPs are often uncomfortable working with this specialized population (Yaruss & Quesal, 2002) and that there is a need for accessible education and training for these special populations. However, it is not unusual for S-LPs to receive little training about head and neck cancer during their formal education (Melvin, Frank, & Robinson, 2001; Beaudin, Godes, Gowan, & Minuk, 2003).

Drawing on the seminal writing of Donald Schön (1983, 1987), the importance of practitioner reflection for the development of professional practice knowledge and the development of professional expertise has been widely documented in other health care fields (Benner, 2001; Kinsella, 2000, 2001; Higgs & Titchen, 2001; Fish, 1998; Bereiter & Scardamalia, 1993). Reflective practice offers a means by which clinicians monitor the outcomes of professional actions and determine actions in practice (Kinsella, 2001). Reflective practice is recognized as an approach that facilitates the development of expertise in therapeutic practice (Benner, 2001; Schön, 1987), yet little research has examined processes of reflection by practitioners in the context of head and neck cancer rehabilitation.

Treatment modalities for laryngeal cancer have expanded with the advancement of organ (voice) preservation therapy (radiotherapy and/or chemotherapy) and attempts to avoid total laryngectomy. As a consequence, the head and neck cancer team is faced with increasingly complex uncertain and unique circumstances and outcomes for patients. Thus, the practitioner in this context must negotiate what Schön called the "indeterminate zones" of professional practice, meaning those situations that fall outside of the realm of clear-cut cases and for which technical and scientific approaches tend to be unsuccessful (Kinsella & Whiteford, 2008). Different approaches, therefore, are required to negotiate these challenges successfully (Kinsella, 2007). Further, because of the varied and often unpredictable events associated with treatment modalities, sudden changes, which frequently require careful and immediate consideration, may occur as part of the clinical process. Such practice context and clinical processes are recognized to increase the likelihood of the use of reflection (Lowe, Rappolt, Jaglal, & MacDonald, 2007). Schön (1983, 1987) argued that practitioners frequently rely on reflective processes to monitor the outcomes of professional actions and to determine actions in professional practice.

Schön (1987) describes reflective practice as "a dialogue of thinking and doing through which I become more skillful" (p. 31). His point is that practitioners are involved in a dialectic conversation (reflective processes) with and within the situation, its actors, and the underlying beliefs from which practitioners use evidence for negotiating the complexities of practice and learning from this experience. Schön's (1983, 1987) work illuminates the ways in which practitioners may be researchers of their own professional practices through *frame reflection*, *reflection-in-action,* and *reflection-on-action*.

- ***Frame reflection*** – Frame reflection focuses on the ways in which practitioners engage in reflective conversations (in the midst of the treatment and/or after) with the situations of practice (clinical issues) and "set the problems" toward which they focus their attention. Schön (1983) suggests that problem setting is a process by which practitioners critically select the problematic characteristic of a situation (i.e., name the problem) and frame the context in which it will be attended to (e.g., practitioner's role or values at stake in the situation).
- ***Reflection-in-action*** – Reflection-in-action is reflection that occurs in the midst of action when the action can still make a difference to the situation (Schön, 1983).

Schön writes that "when someone reflects-in-action, he[she] becomes a researcher in the practice context" (p.68). Reflection is often stimulated when practitioners apply their theoretical/scientific knowledge and are then met with an unexpected outcome (Kinsella, 2000) or, in Schön's words, when practitioners experience surprise in the midst of practice.

- ***Reflection-on-action***—Reflection-on-action is reflection that occurs following an event; it is a process of thinking back on action taken (Schön, 1983). Reflection on action allows the clinician to further explore what arose from the situations of practice and to acknowledge the professional learning that occurred through the expected or unexpected outcomes encountered in that situation (Kinsella, 2007). In addition, this can be a time to reflect upon other dimensions of practice experience, such as one's assumptions, beliefs, ideas, feelings, action, and behaviours.

Purpose

Current literature suggests that the development of professional expertise requires practitioners to engage in processes of reflection, as well as in evidence-informed practice. While evidence-informed practice has become part of the professional lexicon, little research has been done to investigate how reflective practice occurs in the clinical process and the potential contribution to S-LP professional practice knowledge. Thus, the purpose of this case study (Stake, 2003; Yin, 2003) was to illuminate the ways in which practitioner reflection is implicated in the development of S-LP expertise in the context of head and neck cancer rehabilitation. Specifically, we examined how reflective processes inform clinical decision-making and foster the development of professional practice knowledge for speech rehabilitation in two patients who underwent total laryngectomy and received tracheoesophageal (TE) voice restoration and had encountered problems including stoma stenosis and TE puncture tract dilatation. The ultimate objective was to consider the question "In what ways does practitioner reflection-in-action and reflection-on-action contribute to the understanding about the development of professional expertise relevant to S-LP practice in head and neck cancer rehabilitation?"

Method

Participants

Both patients were seen by an S-LP with 5 years of clinical experience in outpatient services for voice disorders and laryngeal cancers in a university hospital setting. This case study focuses on one practitioner's retrospective analysis of reflective processes about two clinical cases. The first author is the practitioner described in the study.

The first patient was a 55-year-old Caucasian male diagnosed with a recurrence of an epidermoid carcinoma ($T_2N_0M_0$) of the left vocal fold. He underwent total laryngectomy with primary puncture and myotomy of the cricopharyngeus muscle. Radiation therapy was given 53 days preoperatively. A tracheoesophageal puncture (TEP) voice prosthesis was fitted at 29 days post-surgery. This patient demonstrated functional use of TEP at 71 days post-surgery, and no swallowing problems were reported. Follow-up problems concerned stoma stenosis and inadvertent prosthesis dislodgment with fistula closure.

The second patient was a 64-year-old Caucasian female diagnosed with epidermoid carcinoma ($T_2N_0M_0$) of the right pyriform sinus. She underwent total laryngectomy with primary TEP and received radiation therapy prior to laryngectomy. The patient experienced swallowing problems and reduced oral opening prior to laryngectomy. A TEP was fitted at 21 days post-surgery. At 434 days post-surgery, functional use of the TEP for speech was not yet attained. Follow-up mainly concerned issues related to pharyngoesophageal segment stenosis.

Data Collection and Analysis

Data collection was conducted retrospectively and consisted of a review of the medical files of the two patients and an in-depth analysis of the S-LP's professional records. Files and records were searched to identify clinical troubleshooting situations encountered in laryngectomy rehabilitation. Reflective notes were kept by the first author about critical moments identified. Critical moments are clinical/therapeutic accounts of critical clinical issues that were documented by the S-LP in the patients' charts. Critical moments frequently depicted times when the practitioner's application of theoretical/scientific knowledge was met with an unexpected outcome (Kinsella, 2000, 2001; Kinsella & Jenkins, 2007). Decisions regarding which critical moments to analyze within the present study were based on opportunities to: (a) understand the application of reflective practice and the implications for professional learning and (b) the possibility for transfer of knowledge beyond this particular case (i.e., the representativeness of the clinical problem encountered).

An analytic framework of reflective practice drawing on the seminal theoretical work of Donald Schön (1983, 1987) was utilized to analyze the way in which the practitioner: (a) framed the clinical issue, (b) re-framed the problem through reflection-in-action, and (c) retrospectively reflected on action and identified new practice knowledge gained.

Results

Clinical Case A: Tracheostoma stenosis

(a) Frame Reflection

Framing the clinical issue: A small stoma diameter impedes the individual's ability to place and remove the TEP voice prosthesis. A recommended strategy to address this issue is to dilate the tracheostoma with a laryngectomy tube (Monahan, 2005). Since air needs to move from the trachea through the voice prosthesis and then into the esophageal reservoir for TEP speech, it is preferable to use

a fenestrated laryngectomy tube or to modify the length or shape of the tube.

Critical moment: A fenestration was performed to prevent catching the voice prosthesis during removal of the laryngectomy tube for cleaning (voice prosthesis positioned behind the tube). Upon evaluation, the clinician noticed prosthesis dislodgement during laryngectomy tube removal.

(b) Reflection-in-action

Reframing the problem: A slight variation in the tube positioning displaced the voice prosthesis in front of the laryngectomy tube.

Change-in-action: The decision was made to widen the fenestration.

Outcome: The patient found it easier to remove the laryngectomy tube and began wearing it on a regular basis.

(c) Reflection-on-action

Following the initial fitting of the laryngectomy tube, the patient experienced breathing problems because the laryngectomy tube narrowed the airway. The tube was removed.

Practice knowledge gained: The clinician learned that it is crucial to counsel the patient about a possible subjective feeling of respiratory distress related to a tracheostoma tube prior to the intervention.

Clinical Case B: Dehiscence of the tracheoesophageal puncture

(a) Frame Reflection

Framing the clinical issue: Even when caution is taken while inserting the voice prosthesis, tissue trauma may result in minor bleeding (Doyle & Keith, 2005).

Critical moment: While performing a routine change of the voice prosthesis, the clinician noticed a larger amount of bleeding and untightening of the TEP tract's walls.

(b) Reflection-in-action

Reframing the problem: A significant amount of bleeding is not a common observation during voice prosthesis insertion. In this case, the patient had undergone radiation therapy and the tissues of the tracheoesophageal wall had been affected. Because irradiated tissue differs from normal tissue, it may be more prone to dehiscence and granulomatous changes from repeated trauma during voice prosthesis change (Gress & Singer, 2005; Malik, Bruce, & Cherry, 2007). Consequently, this may have explained the increased amount of bleeding observed with TEP insertion. In this case, late post-radiation changes in TE wall tissue problems prevented the placement of the voice prosthesis.

Change-in-action: A rubber catheter was inserted to keep the tracheoesophageal puncture patent while allowing tissue healing to occur.

Outcome: One month later, sufficient healing had occurred and contraction of the TEP wall tissues had taken place. The TE voice prosthesis was inserted without bleeding and the patient was able to produce voice.

(c) Reflection-on-action

Although medical management of the problem was not necessary in this case, there was an interprofessional discussion about other potential causes of significant bleeding such as esophageal perforation. In such cases, when the TE voice prosthesis tip is projected into the esophagus during the insertion, it could tear the irradiated esophageal mucosa which would explain an increased amount of bleeding. Esophageal perforation can lead to serious secondary infection and requires aggressive management including drainage and antibiotic therapy.

Practice knowledge gained: Knowledge was gained about a rare complication associated with TEP voice restoration. The clinician now pays special attention to the amount of bleeding as it might be indicative of deteriorated tissue in the TE puncture site.

Discussion

This case study provides information emerging from an immersion into clinical events. In doing so, it has drawn on one practitioner's experience to illustrate the use of reflective processes in clinical practice. Schön's work on reflective practice (1983, 1987) has provided a theoretical framework to support the analysis reported herein. Although general conclusions on clinical populations should not be drawn from individual case studies, practitioners and researchers may discern implications for their professional practice and for further research from particular case studies, as some of the findings may parallel their personal experience or research interest(s). In addition, over time a series of case studies may lend themselves to meta-analysis. Systematic and thorough case studies have the potential to make a significant contribution to knowledge and clinical practice.

The purpose of this research was not to compare patient cases, but rather to provide an illustration of the reflective processes involved in professional practice and the implications for professional practice knowledge. Both cases highlight that reflection-in-action gave rise to "on-the-spot" experimentation and informed decision-making, while reflection-on-action provided opportunities for development of practitioner theories of practice and growth of professional practice knowledge (Kinsella, 2000; 2001). "On the spot" experimentation occurred in case A when the practitioner tried out a new action (widening the fenestration), which led to the intended change. In case B, reflection-in-action contributed to the decision to delay insertion of the voice prosthesis. Theories of practice are strategies, insights, and underlying considerations for actions taken in everyday clinical practice. For example, in case A, a change in the clinicians's theory of practice consisted of restructuring counseling based on the practice knowledge gained from this clinical experience. The clinician was able to problem-solve through reflection, observation, and critical evaluation, but also to consider

this outcome in the context of contemporary theory and practice.

Medical and technological advancement, as well as public demand for professionals' accountability, has increased the need for continuing education and specialization for health care practitioners, including S-LPs working with head and neck cancer patients. Reflective practice allows practitioners to thoroughly examine practice questions in order to gain a deeper understanding of the issues they face (Kinsella & Jenkins, 2007). In a similar vein, Benner (2001) asserts that reflective practice allows practitioners to uncover practice knowledge "useful to further develop the scope of practice of professionals who wish to and are capable of achieving excellence" (p. 35). Developing the capacities for reflection in and on practice is to be seen as a significant dimension of professional practice and as important for the development of expertise. The ability to carefully and comprehensively reflect on the nature of the clinical interaction should also be seen as potentially contributing to improved quality of patient care. Indeed, in the context of on-line problem solving, processes of reflection increase the potential that the most appropriate decisions will be made to benefit the patient. While every clinician will make occasional errors, a savvy clinician will seize upon the opportunity of uncommon problems to expand his or her expertise and clinical judgment. In addition, documenting information from challenging cases can, over time, make an important contribution to the S-LP's knowledge and best practices. Comprehensive case documentation can be achieved through an in-depth description of the clinical case complemented with an explicit account of the reflective processes involved in clinical decision making. Doing so may then lead to further reflection and facilitate the clinician's ability to challenge and transcend the frame of day-to-day clinical practice.

There are many ways to develop professional expertise, yet there are no uniform guidelines detailing how clinical experiences can be integrated and shared. Recent conceptualizations have elaborated on the multifaceted and transdiciplinary nature of expertise (King, Currie, Bartlett, Strachan, Tucker, & Willoughby, 2007; King, Bartlett, Currie, Gilpin, Baxter, Willoughby, et al., 2008). Expertise cannot easily be captured in the theoretical, abstract principles, or explicit guidelines (Benner, 2001). Professional expertise is a composite of the practitioner's level of knowledge, personal qualities and characteristics, skills, abilities, outcomes, and professional and public reputation (King et al., 2007). From this point of view, experience should be seen as just one factor that contributes to the development of expertise rather than as an essential constituting characteristic of such expertise. The case studies described herein illustrate how clinical experience may be processed through practitioner reflection and how it may contribute to the development of expertise and consequently to the professional practice of the therapist.

Multiple sources of knowledge inform one's profession and education. Critical reflection allows the practitioner to gain a deeper understanding of experience so that a challenging clinical situation can be transformed into an opportunity for active learning and practice knowledge development (Kinsella, 2000). Together with scientific evidence and theory, professional practice knowledge generated from reflection in and on practice, by informing the body of knowledge that S-LP's use, has the potential to change and improve best practices in speech-language pathology.

Conclusion

In recent years, evidence-informed practice has become part of the professional lexicon in S-LP, but little research has investigated how reflective practice occurs and how it may contribute to professional practice knowledge in S-LP. The research presented herein contributes to the understanding of the ways in which practitioner reflection is implicated in the development of S-LP expertise in the context of head and neck cancer rehabilitation. Reflecting in and on practice is an important dimension of effective professional practice and the development of expertise. Documenting the intricacies of S-LP practice is essential to make professional practice knowledge available for further practice development, professional education, and research. Further research into the S-LP's use of reflection in clinical practice is required to advance our understanding of the development of professional expertise. Because of the many challenges and complications in this clinical population, head and neck cancer rehabilitation offers an ideal environment in which to study reflective practice and the way in which it informs the development of professional expertise in speech-language pathology.

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Author Notes

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Correspondence concerning this article should be addressed to: Marie-Ève Caty, Health and Rehabilitation Sciences Graduate Program, Health Professional Education Field, The University of Western Ontario, Elborn College, 1201 Western Road, London, Ontario, N6G 1H1 Email address: mcaty2@uwo.ca.

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