

Accepted version of:

Hersh, D. and Boud, D. (published online 5 January 2023). Reassessing assessment: what can post stroke aphasia assessment learn from research on assessment in education? *Aphasiology*, DOI: 10.1080/02687038.2022.2163462

## ***Reassessing assessment: what can post stroke aphasia assessment learn from research on assessment in education?***

Hersh, Deborah <sup>a,b,c</sup> and Boud, David <sup>d,e,f</sup>

a Speech Pathology, Curtin School of Allied Health, Curtin University, Perth, Australia

b Speech Pathology, School of Medical and Health Sciences, Edith Cowan University, Perth Australia

c School of Allied Health Science and Practice, Adelaide University, Adelaide, Australia

d Centre for Research in Assessment in Digital Learning, Deakin University, Melbourne, Australia;

e Faculty of Arts and Social Sciences, University of Technology Sydney, Ultimo, Australia;

f Centre for Research on Work and Learning, Middlesex University, London, UK

*Correspondence:* Professor Deborah Hersh, Speech Pathology, Curtin School of Allied Health, Curtin University, Kent Street, Bentley, Perth, Australia.

Email: [deborah.hersh@curtin.edu.au](mailto:deborah.hersh@curtin.edu.au)

*Declaration of interests:* There are no real or potential conflicts of interest related to the manuscript.

*Key words:* aphasia, assessment, higher education, feedback, adult learning theory

ORCID Deborah Hersh: <http://orcid.org/0000-0003-2466-0225>

ORCID David Boud: <http://orcid.org/0000-0002-6883-2722>

### ***Reassessing assessment: what can post stroke aphasia assessment learn from research on assessment in education?***

#### **Abstract**

Background: Assessment is an essential part of aphasia management. There are many tools available for aphasia assessment, but relatively scant attention has been paid to how speech pathologists carry out their assessment sessions, or how these sessions are experienced by people with aphasia and their families. The evidence that is available suggests that people with aphasia do not always understand the purposes of the assessments they undertake or receive much useful feedback on their performance. Connections between adult learning and aphasia therapy are being made more explicit, such as through the Life Participation

Approach to Aphasia, but the potential for a relationship between adult learning and aphasia assessment has not yet been fully recognised.

**Aims:** This paper aims to stimulate thinking to improve current aphasia assessment practices. It uses an adult learning lens and explores theoretical approaches underpinning assessment in adult education contexts.

**Main Contribution:** In this commentary paper, we summarise the current, dominant practices around aphasia assessment and then briefly review evidence-based recommended practice for assessment in higher and professional education. We explore useful parallels between the two fields and discuss how we might reassess assessment in aphasia rehabilitation.

**Conclusions:** Aphasia assessments have greater potential to be therapeutic than we currently assume. Ideas from adult education are useful to challenge clinicians to reconsider aspects of their practice. Assessments can be a powerful motivator for learning and engagement in therapy. Through a greater focus on formative and sustainable assessment, and changed feedback practices, there are opportunities to capitalise more fully on the potential for learning during these sessions. Attention to the rich development of ideas about assessment in education is a useful way to challenge our assumptions and perhaps prepare our clients with aphasia for a more productive and sustainable learning journey to support their recovery.

## **Introduction**

It is 15 years since Kimbarow (2007) suggested that a Life Participation Approach to Aphasia (LPAA) (Chapey et al., 2008) should be integrated with adult learning theory:

*Clinical success may be enhanced when practice is based on the assumption that at the core of every adult client with aphasia, there is an adult learner; someone who, for the time leading up to the onset of aphasia, led a successful, meaningful and productive life – and can again.*  
(p.318)

Kimbarow noted that clinical practice has traditionally been based on pedagogical learning theories where the responsibility for directing the learning sits with the teacher, or in this context, the clinician. This approach, he argued, risks increasing dependency and disempowerment in clients. In contrast, adult learning involves adults as self-directed problem-solvers, with life experience which is itself a rich resource for learning, and motivation to learn when they understand why something is worth learning and can see application of that learning to their lives (Hopper & Holland, 2005).

Such notions of adult learning are reflected in the values of the LPAA. Chapey et al., (2008) wrote:

*LPAA places the life concerns of those affected by aphasia at the center of all decision making. It empowers the consumer to select and participate in the recovery process and to collaborate on the design of interventions that aim for a more rapid return to active life.* (p.279)

The move to involve people with aphasia in choices about their rehabilitation, to engage with them and their families as partners in the process of living successfully with aphasia, is now recognised as good practice, and is reflected in clinical texts (for example, Elman, 2007; Hallowell, 2022; Holland & Elman, 2021; Papathanasiou & Coppens, 2017) and best practice statements (Simmons-Mackie et al., 2017). Simmons-Mackie and King (2013) wrote: “For

people with aphasia, rehabilitation is a specific example of being involved in the process of new learning and applying that knowledge” (p. 234).

While connections between adult learning and aphasia therapy are being made more explicit, we suggest that more work is needed to increase recognition of the relationship between adult learning and aphasia assessment. There is a rich literature on assessment in adult and higher education and we see useful parallels between the adult education and rehabilitation contexts. As we discuss later in this paper, one reason for making this link is the prime position of assessment as a driver for learning, as Boud and Falchikov (2007) emphasise: “Assessment, rather than teaching, has a major influence on students’ learning” (p.3). It is through assessment that students understand what is important to learn, and what they are expected to achieve. Moreover, the influence of assessment is not limited to the course of study in which it sits because the experience of it may have long term impacts on a person’s future choices and decisions and perhaps even about how they see themselves and their potential (Falchikov & Boud, 2007). Clearly, initial assessment in aphasia rehabilitation is not about what has been learned in a course of study but, at least after stroke or brain injury, is focused on the sudden change of status of a person’s language and communication. However, the assessment often frames the therapy that follows (Hersh et al., 2012a). It may influence how the person engages in their treatment, and the experience of initial and review assessments may affect how people with aphasia feel about themselves and their recovery in the longer term. Just as Boud and Falchikov (2007) highlight the role of assessments in framing learning, so Hersh et al. (2013), note that assessment sessions should be tapped for their learning potential particularly considering the large amount of time spent on assessing patients in rehabilitation. Hersh and colleagues (2013) introduced the concept of *Therapeutic Assessment* in aphasia, a way of assessing that can be experienced as beneficial and with therapeutic value for the person with aphasia rather than simply as a data gathering exercise for the clinician. Therapeutic Assessment is built on three ideas: that assessment needs to be viewed as an intervention with therapeutic potential; that it treats the person as an adult learner; and that it is relevant to real contexts and considers the person’s fit with their environment. Since this work was published, Therapeutic Assessment has started to shift thinking about what speech pathologists might be able to achieve within their assessment sessions (see the Australian Aphasia Rehabilitation Pathway <http://www.aphasiapathway.com.au/?name=Therapeutic-assessment>; Coppens & Simmons-Mackie, 2018; Hallowell, 2022; Hersh et al., 2018; O’Halloran, et al., 2020; Thomson et al., 2018). However, what is known about clients’ experiences of assessment suggests that this shift in thinking is still in its early stages and that more needs to be done to maximise the potential benefit from these sessions.

### **What are the experiences of assessment?**

There is little published information about what happens in practice within aphasia assessments or indeed on the experiences of being assessed for people with aphasia post stroke (Hersh et al., 2018), but what there is suggests a need for change. In a British study, Tyson et al. (2014) interviewed 17 people (three with aphasia), who had experienced a stroke within the previous year, about their assessment experiences. All participants appreciated the need to be assessed for diagnosis, treatment, and discharge planning. However, most did not understand the purpose of particular assessments, especially psychological and cognitive tests. Many were irritated by the unexplained repetition of tests and assumed that the staff should have communicated with each other more effectively to avoid this. Half spoke positively of the information they were given, but the others received little or no feedback which they reported was “dehumanising” (p. 827) and demotivating. They wanted results that were clear, without jargon, and in both verbal and written formats. They also talked about

barriers to information provision such as staff not being willing to share results with relatives on the grounds of confidentiality, or just being slow and inconsistent in the delivery of feedback. Lack of information or feedback about assessment is also noted in a study by Rose et al. (2019) but from the perspective of family members of people with aphasia. Looking at experiences and preferences for receiving aphasia information in the early period post stroke, the authors found that families stated they would have valued information on the purpose of aphasia assessment but did not recall receiving it. Both these studies suggest that patients and families want more information and education at the time of assessment than they perceive they are currently offered. Moreover, this situation is reflected in the results of an online survey about aphasia education practices completed by 130 Australian speech pathologists (Rose et al., 2018). These participants reported providing information both to people with aphasia and their families about aphasia itself (definition, cause, recovery), communication and coping strategies, but there was no mention of information related to aphasia assessment purposes, implications, results, or feedback. Participants did not report evaluating the impact of their education and information provision but, overall, indicated that they felt it was not optimal. Only half the respondents *always* provided written information, not all information was felt to be aphasia friendly, and most gave out pre-prepared generic brochures or fact sheets. Not only is this not in line with best practice recommendations which call for tailored, accessible information to be provided over time and in different formats (Simmons-Mackie et al., 2017), but it also suggests that individualised assessment explanations and feedback are not standard practice.

The lack of attention as to how information is or is not conveyed during assessment is in stark contrast to the calls for clinicians to effectively support people with aphasia to be engaged in goal setting discussions towards therapy (Barnard et al., 2010; Berg et al., 2016; Berg et al., 2017; Elston et al., 2022; Haley et al., 2019; Hersh et al., 2012a; 2012b; Leach et al., 2010; Sherratt et al., 2011). These discussions build on formal and informal assessment findings, are often strengths-focused and important to therapy planning. Assessment usually underpins much of what follows in rehabilitation such as decisions and goals for treatment, a baseline from which to measure change, and evidence for team members, patients, and families, referring agents, discharge planners and health funds. Whalley Hammell (2015), writing from experience in occupational therapy, likened the rehabilitation assessment “to a map for a navigator” (p. 53). She wrote:

*It explicates “where we are now” and, because therapists treat what they measure, it provides the basis not only for “where we are going” (goals and objectives) but “how we plan to get there” (selected interventions).*  
(Whalley Hammell, 2015, p.53)

We know less about what assessment sessions provide for patients and their families although assessments are likely to be associated with a range of reactions – curiosity, relief, concern, grief. They may be deeply intertwined with emotion and have far reaching implications. An example of this comes from Christopher Green, an Australian paediatrician and author of several successful books on parenting toddlers (for example: Green, 2006). He wrote about his experience of assessment following stroke and aphasia:

*Two weeks after my stroke, I was sent to rehab... I was then given an occupational therapy assessment. I had to find a square and a circle and fit them into a puzzle. Two weeks earlier, as a developmental doctor, I had worked with 2-year-olds with low IQs. Now they were doing the same tests on me, Dr Christopher Green, specialist doctor! Later, I met a neuropsychologist. I know they are lovely people but it seemed that they*

*were only interested in what I had lost, not what I still had. I did a test, and my score quickly showed that I was really stuffed!* (Green & Waks, 2008, p.128)

For Green, the outcome of this assessment was an awareness of his suddenly acquired limitations and that only this aspect was of professional interest. This was not simply an assessment of what he could or could not do, but of who he now was. It took Green several years to overcome thoughts of suicide and after his stroke move his life forward (Green & Waks, 2008).

The emphasis on what assessment results yield for clinicians' planning, with less consideration of what they mean for people with aphasia and the impact that they have on them, appears to be at odds with an LPAA philosophy encompassing adult learning. Involvement of the client in ascertaining what they want, and information sharing for learning and engagement through the process of assessment, do not seem to feature highly. One of the ways to address this may be to re-visit the wider domain of learning in adults and explore the parallels and differences between the two perspectives of assessment in aphasia rehabilitation and assessment in higher education. The relationship between these contexts has not been previously presented in this way but we suggest there are important lessons to be learned from this exercise.

In this paper, we argue that aphasia assessments have greater potential to be therapeutic than we currently assume and that ideas from adult learning may be useful to challenge clinicians to reconsider aspects of their practice. The aims of this paper are to: summarise the current, dominant practices around aphasia assessment; describe and apply theoretical and practical work from the well-developed field of assessment and feedback in higher education; and highlight what might be gained by examining these two seemingly unrelated fields concurrently. We argue that this exercise paves the way to *reassess* assessment, not only for people with aphasia but perhaps also for others after stroke.

### **Current practice and conceptualisation of assessment in aphasia rehabilitation after stroke**

Aphasia is a highly complex disorder reflecting the fact that language is a highly complex aspect of human functioning. It is an acquired neurological disorder characterised by language breakdown across speaking, understanding, reading, and writing. A recent UK study estimated the prevalence of aphasia in inpatient stroke survivors to be 40% (Mitchell et al., 2021), with earlier studies finding 30% with aphasia on admission with first-ever ischaemic stroke (Engelter et al., 2006) and 35% with aphasia at the time of hospital discharge (Dickey et al., 2010). These studies also note aphasia to be associated with increasing age and more severe strokes. Patterns of breakdown, levels of severity and recovery trajectories are very individual which adds to the need for comprehensive assessment, coordinated delivery of care for the healthcare team (Carragher et al., 2021) and evaluation of the disorder over time.

Assessment is fundamental to aphasia rehabilitation as it is in other areas within speech pathology (see sections 3.2 and 3.3 of the *Professional Standards for Speech Pathologists in Australia*; Speech Pathology Australia, 2020). Guidelines for practice highlight its importance (Power et al., 2015; Simmons-Mackie et al., 2017), emphasising the need to screen and then comprehensively assess for nature and type of aphasia in the acute period post stroke (Stroke Foundation, 2021). Assessment provides clinicians with background, case history, medical, diagnostic, prognostic and social information about a

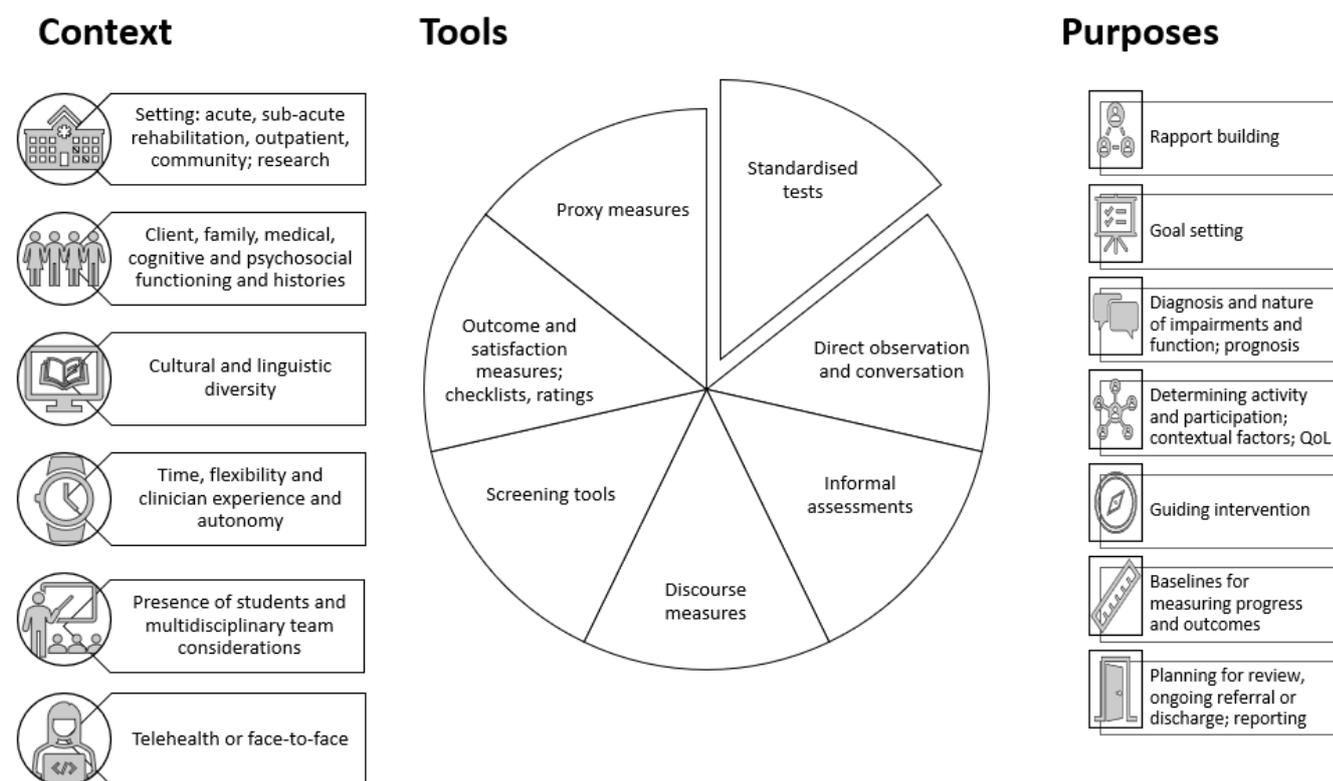
patient and their family context. As conceptualised by the International Classification of Functioning, Disability and Health (ICF; World Health Organisation, 2001) assessment may quantify or describe impairment, function, activity, participation, and contextual factors relevant to the patient. Patterson and Chapey (2008, p.66) defined assessment as:

*...an organized, goal-directed evaluation of the interrelated, integrated components of communication: cognitive, linguistic and pragmatic. It also includes evaluation of an individual's quality of life, communicative interactions within the family or social unit, and role in the larger unit of society. An evaluation is carried out to determine a patient's language strengths and weaknesses and the degree to which language strengths can be fortified and language weaknesses modified.*

Figure 1 provides a summary of the contexts, tools, and purposes of aphasia assessment to capture this complexity, and structure this section.

**Figure 1.** Summary of aphasia assessment.

## Summary of aphasia assessment



### Context and tools of aphasia assessment

Figure 1 captures the diverse contexts that have the potential to impact on assessment of aphasia. It considers the settings (acute ward, sub-acute rehabilitation, outpatient, community, research) and their respective expectations for practice; the personal and social context for patients; cultural and linguistic considerations (Armstrong et al., 2017; Huang et al., 2019;

Mellahn et al., 2021); factors related to the clinician's job and experience; the team context; and mode of contact (Guo et al., 2017; Hill et al., 2009).

Aphasia assessment during the early days in acute settings may be challenging because of lack of time and busy environment, patient illness and fatigue, and dominant focus on dysphagia management as opposed to communication (Hersh, 2016; Vogel et al., 2010; Foster et al., 2016; O'Halloran et al., 2020; Rose et al., 2014). The language impairment is typically most severe in the early stage but also unstable, often changing rapidly with spontaneous recovery. Healthcare providers across the stroke team are reported to find communication with patients with aphasia difficult in this early period (Carragher et al., 2021). Studies have highlighted how assessment practices change according to setting and context (Kiran et al., 2018; Vogel et al., 2010). Vogel et al. (2010) surveyed 174 speech pathologists from across Australia and New Zealand. Respondents reported changes in assessment approach along the referral pathway with their most popular choices being individualised in-house assessments in acute settings, the Mount Wilga High Level Language Test (Christie et al., 1986) and PALPA subtests (Kay et al., 1997) in inpatient rehabilitation, and the Mount Wilga, Boston Naming Test (BNT; Kaplan et al., 2001) and informal interaction and observational assessments in outpatient rehabilitation. Kiran et al. (2018) found a variety of assessments used across settings, but also some consistency of choice of measures (popular choices being the Western Aphasia Battery-R (WAB-R; Kertesz, 2007), BNT, Cognitive Linguistic Quick Test (CLQT; Helm-Estabrooks, 2001) and the Communicative Effectiveness Index (CETI; Lomas et al., 1989). Other studies have noted how the support and information needs change for patients and families as they move through acute and rehabilitation stages to a chronic phase (Avent et al., 2005; Hilton et al., 2014; Rose et al., 2019). As people with aphasia move from the acute and subacute stages to outpatient and community rehabilitation, there is often a shift of focus from assessing impairment to more functional assessments of activity, participation, and quality of life (such as the Scenario Test (van der Meulen et al., 2010) and the Assessment for Living with Aphasia (ALA – Kagan et al., 2011)). Reviews, quality of life assessments, and measures of intervention outcomes are more prominent. In research settings, a consensus has been built to standardise aphasia assessments used to measure outcomes in treatment studies (Wallace et al., 2019) and this work has included consideration of those outcomes reported to be most important by people with aphasia and their families (Wallace et al., 2017).

The pie chart in Figure 1 captures the main tools used to gather assessment information. These are numerous. A recent scoping review (Wallace et al., 2022) identified 143 measurement instruments for aphasia across 284 references. Classifying these instruments across the International Classification of Functioning, Disability and Health (ICF; World Health Organisation, 2001), the majority (94) measured Body Function (impairment), 23 measured Activity/Participation, 5 measured Environmental factors and 16 measured quality of life or constructs not specified within the ICF. Verna et al. (2009) surveyed Australian speech pathologists about their aphasia services. Their 70 respondents reported using 180 different measures, with 65 of them assessing language impairment and 54 of them used for screening language. Far fewer assessments were listed that examined aspects such as functional communication, quality of life or client satisfaction. Doedens and Meteyard (2020) reviewed functional communication measures of real-world communication within the Activity/Participation domains of the ICF. Their study identified 19 measures of functional communication (3 standardised tests, 2 non-standardised tests, 4 clinician-rated and 6 client or proxy-rated observational profiles, 3 instruments to linguistically analyse connected speech, and one approach using conversation analysis). Doedens and Meteyard (2022) argued that clinicians tend to rely on assessing impairment rather than functional

communication because of the lack of a definition of what it actually is. To address this, they borrowed the framework of “situated language use” (Clark, 1996) which sees functional communication as built on interactivity (the collaboration of two or more people), multimodality (vocal and visual), and context (including the common ground between two interactants of shared knowledge and assumptions). Therefore, they suggest: “Assessment of functional communication should explicitly measure the interactive, multimodal, and contextual aspects of a person’s communicative abilities” (Doedens and Meteyard, 2022, p.959).

Despite the large number of possible assessments, relatively little has been written about them as compared to treatment. In another scoping review of the management of communication disorders in the first 90 days after stroke (Baker et al., 2021), where management included assessment, only 6 of 45 studies addressing the communication impairment focused on assessment. Five of those reported on the psychometric properties of those tools and only one (Vogel et al., 2010) explored assessment practices. The study by Vogel and colleagues, mentioned earlier, found that over 70% of respondents assessed aphasia using subjective or un-standardised (informal) assessments because standardised assessments were viewed as too time consuming, could not be repeated frequently enough and were not sensitive to the rapid changes in language function in that early period after stroke. This reliance on unstandardised assessments, despite the large numbers of available standardised tests, has been found in other studies. Morris and Webster (2018) carried out a survey of 243 speech pathologists and reported that it was very common for people to use both formal and informal assessments and that a combination was felt to give the best information.

The distinction between formal assessment and informal assessment is an important one in aphasia rehabilitation, and more attention is now being paid to the nature of informal assessment (Hersh et al., 2018; Thomson et al., 2018). Murray and Coppens (2017) view the former as “any published quantification tool” (p.82), a broader definition than the common limitation to standardised and norm-referenced tests with fixed administration protocols and norms. Formal assessment is useful for differential diagnosis, measuring and quantifying behaviours. Informal assessment is “the process of creating and manipulating stimuli for the purpose of making clinical decisions” (p.82) and “a fluid exercise in critical thinking” (p.92) where the clinician is generating hypotheses and designing tasks and probes to address their questions. Informal approaches involve broad questions about quality of life, and well-being, as well as caregiver evaluations, and ongoing assessment. Murray and Coppens also include the concept of *dynamic assessment* within informal assessment, an iterative process of testing and treating, in order to probe for ways to improve a response. In relation to this last point, they recommended: “repeatedly assessing individuals with aphasia” (p.97) to determine “sufficient stamina and stability to begin regular treatment sessions” (p.97); continued response to treatment; whether they might be reaching a *plateau* (a contentious term – see Hersh, 1998) requiring a change of treatment or discharge; and maintenance of gains. These recommendations, with a focus on repetition of assessment and clinician judgement about readiness for treatment, could be experienced as onerous for people with aphasia unless the rationale of testing and treating is carefully explained, and linked to a negotiated therapy direction.

Figure 1 also includes screening tests (El Hachioui et al., 2017) and discourse measures. A recent study (Cruice et al., 2020), involving 211 UK speech and language therapists, surveyed the reported practices around assessing and treating naturalistic discourse (language building beyond the word and sentence level to enable a range of communication functions). They found that 30% of clinicians analysed the discourse of their patients with

aphasia, but they tended to be more experienced, part-time and community based. Discourse was most often collected during initial assessment through picture descriptions and recounts. This study reinforces that assessment practice is not uniform and that time constraints, level of training and confidence influence choice and type of assessments. Despite the traditional reliance on formal testing, there is agreement that it does not necessarily reflect real world language capabilities. Myrberg et al. (2018) demonstrated that the interactions of people with aphasia during formal assessment, involving testing on language processing at sound, word, and sentence level, are not representative of language in more conversational interactions giving little information on abilities with connected speech and discourse. In sum, while there are many tools available for assessment of aphasia, the value of their findings may not be immediately clear to people with aphasia or their families and may not easily translate into clear goals for treatment.

### *Purposes of aphasia assessment*

Figure 1 summarises the purposes of assessment, from the rapport building of the first meeting, through goal setting, and then on to determining the level of impairment and function, treatment planning, reviewing outcomes, demonstrating change, and planning onwards. These purposes are complex. For example, developing rapport or getting to know a patient is often described as an essential precursor to aphasia practice, but it has been shown to happen within assessment rather than simply before it. Hersh et al. (2018) argued that an under-recognised purpose of informal assessment is to strengthen the therapeutic relationship, achieved through incorporating informal interactions, putting the patient at ease, and relieving the awkwardness of more formal question-answer-evaluation interactions typical of assessments (Horton, 2006; Simmons-Mackie & Damico, 1999).

Another example of this complexity is the relationship of assessment to goal setting. A traditional assumption is that assessment is required for therapy planning (Galletta & Schaeffer, 2012; Patterson & Chapey, 2008) and is the first step to exploring both strengths and deficits in language processing (Whitworth, Webster & Howard, 2014). However, Worrall (2019) stated:

*Goal setting usually occurs after language testing. An unintended consequence of this sequence can be that the therapist will work on the language weaknesses of the test rather than treating for the patient's life... In the Australian Aphasia Rehabilitation Pathway, assessment for therapy is placed after goal setting... this prioritises the client's goals before the assessment results. It is also easier to ask the client about their life goals before the focus on the language testing process. (p.443)*

Worrall challenges this traditional assumption, suggesting that, if therapy is to be functionally tailored to each individual, then goal setting should precede assessment. Worrall's suggestion offers an alternative to the common tendency for assessment to be impairment based, potentially disconnected from client concerns, or deficit focused. Detailed language testing is clearly a priority for hypothesis testing, establishing baselines, therapy planning and so on but if it is perceived as removed, or opaque then clients may not fully understand its value or relevance. By setting goals first through conversation, there is a greater opportunity to get to know the person and what they want to achieve. In reality, it may be useful to consider elements of assessment and goal setting as merged. For example, Murray and Coppens (2017) highlighted goal setting as one of their five purposes of assessment: to establish diagnosis and prognosis; to describe and understand the language, cognitive and emotional functioning; to gather background and case history; find out people's goals; and support the person with their interactions and through information on their strength and weaknesses. In

relation to informal assessment, Coppens and Simmons-Mackie (2018) developed a framework of objectives, components and procedures which involves clinicians having pre-requisite skills to help support their ability to test hypotheses and ask goal-oriented questions building on background knowledge about the patient, critical thinking, good observation skills and interactive skills. They noted that such interactive skills include “the ability to engage the client in the assessment process and collaborate with the client as a partner... teamwork between two adults... who share the ultimate goal of improving the communicative life of the person with aphasia” (p. 445). Equally, Haley et al. (2019) discussed the close relationship between the meaningful, collaborative goal setting process of their FOURC model and assessment in outpatient rehabilitation settings. They highlighted the value of using the ALA (Kagan et al., 2011) or the Life, Interests and Values or LIV Cards (Haley et al., 2013) to promote goal setting: “We routinely identify a robust communication goal during the initial session despite dedicating a good portion of that session to preliminary evaluation of the impairment and strength profile through speech and language testing” (p.4).

These examples and the discussion of the context, tools and purposes of assessment give some insight into existing work exploring the nature of how this is approached in aphasia. However, consideration of the potential for assessment as a learning opportunity for people with aphasia and their family members has not yet been fully realised. In their introduction to *Therapeutic Assessment*, Hersh et al. (2013) noted the threefold layering of assessment *of* support (where speech pathologists assess to understand what the person with aphasia might need), assessment *with* support (such as through dynamic assessment, incorporating opportunities to demonstrate and scaffold strengths), and assessment *as* support (the notion that the assessment itself is a supportive, therapeutic, and educational experience). While relatively novel in aphasia rehabilitation, the idea of assessment for learning is more established in education as considered in the next section.

### **Applying theoretical and practical contributions from assessment in education**

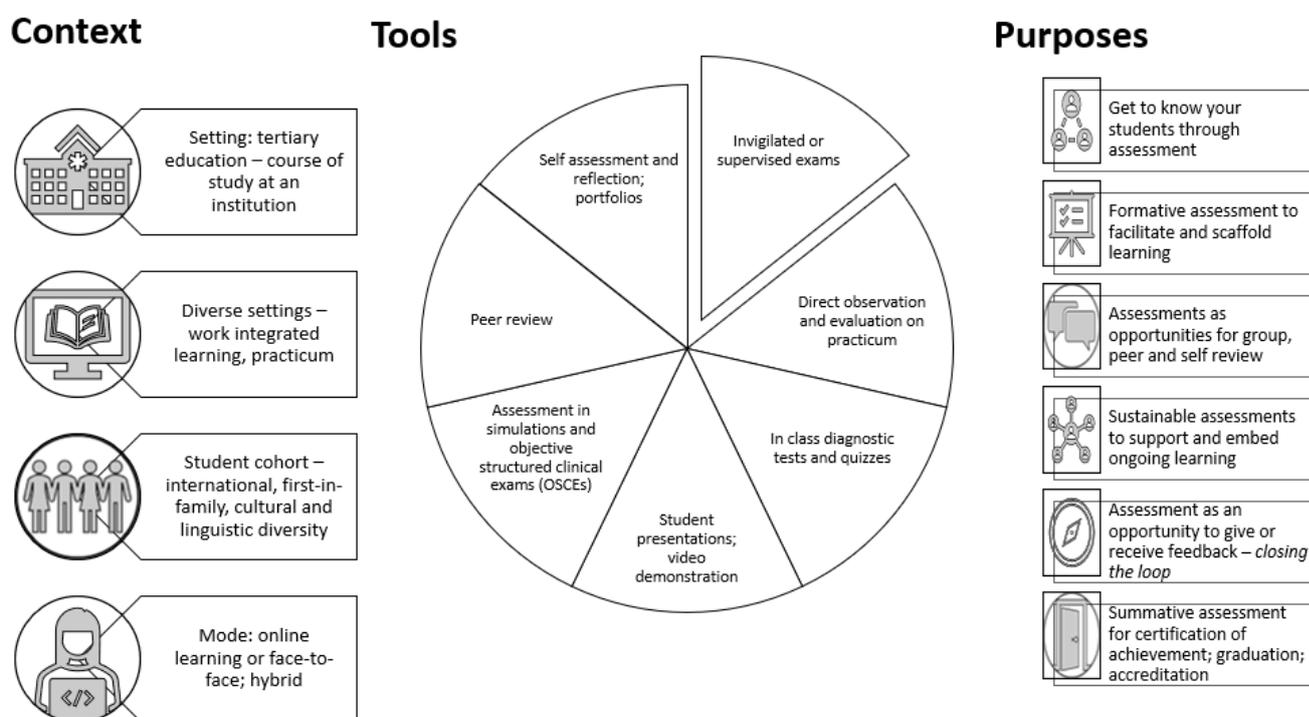
In Figure 2, we have briefly summarised the context, tools, and purposes of assessment in education. Institutional settings, such as universities, can commonly be associated with undertaking tests or exams. Typically, these are held at the end of a course of study resulting in a grade or a score to capture what the teacher or lecturer believes represents the level of learning attained. However, formal examinations are not so prominent as they once were, and assessment now takes place in a wide variety of ways including through work integrated learning, simulations and competency assessments which are closely related to the learning outcomes desired. Just as assessment through telepractice is increasingly mainstream in health, so online assessment is more common in education, and additionally, the choices and types of assessment need to be adjusted and tailored to be relevant and accessible to diverse groups of students, just as for diverse groups of patients.

A key lesson to take from educational assessment is that there are many purposes of assessment. They each have their own logic and often one purpose is in tension with another. For example, a *diagnostic* educational assessment, perhaps where one might look first for parallels with rehabilitation, would occur at the start of a period of learning to check the level of knowledge of the students as they come into a course, and is very specific to what is going to be learned. Diagnostic assessment has had limited uptake in educational settings, mostly at the instigation of individual teachers. More prominent in the field is *summative* assessment which focuses on assuring the outcome of a course of learning, the final determination, or the test “commonly dominated by the needs of certification” (Boud & Falchikov, p.4). It is the end of a particular sequence of learning. However, it can provide a goal to work towards and

it is not uncommon for students to focus on *working to the test*, which is particularly problematic when the test is a limited one. Too great an emphasis on summative assessment can sometimes detract from the process of achieving the very outcomes it is designed to judge because breadth of learning becomes secondary to a limited focus on what is assumed to be in the exam. In practice, summative tasks are not only exams and tests, but could be other forms of assessment that demonstrate achievement such as a presentation, written report or a portfolio. Arguably, in the context of aphasia rehabilitation, the summative assessment reflects an evaluation of the outcomes of a therapy program as assessed through a standardised examination or battery of tests, or some other outcome measure. Summative assessment alone might help judge progress, but more is needed to guide interventions.

**Figure 2.** Summary of education assessment.

## Summary of education assessment



In contrast to a summative assessment being used to judge learning at the end of a course of study, or indeed to help determine whether someone can move on to another phase of learning beyond that, *formative* assessment is used during a course to assist students to develop what is needed to meet the learning outcomes of that course. Formative assessment has parallels in a functional, non-standardised or dynamic aphasia assessment as it includes opportunities to trial and test, to use stimulability testing, or interweave a cue or strategy to gauge if it might assist performance. A third purpose of educational assessment has been termed *sustainable* assessment. It focuses on promoting ways in which the learner can take responsibility for judging for themselves whether they have met their goals. Sustainable assessment enables students to reflect on and evaluate their own learning and not be dependent on teachers to know when they have performed well (Boud, 2000; Boud &

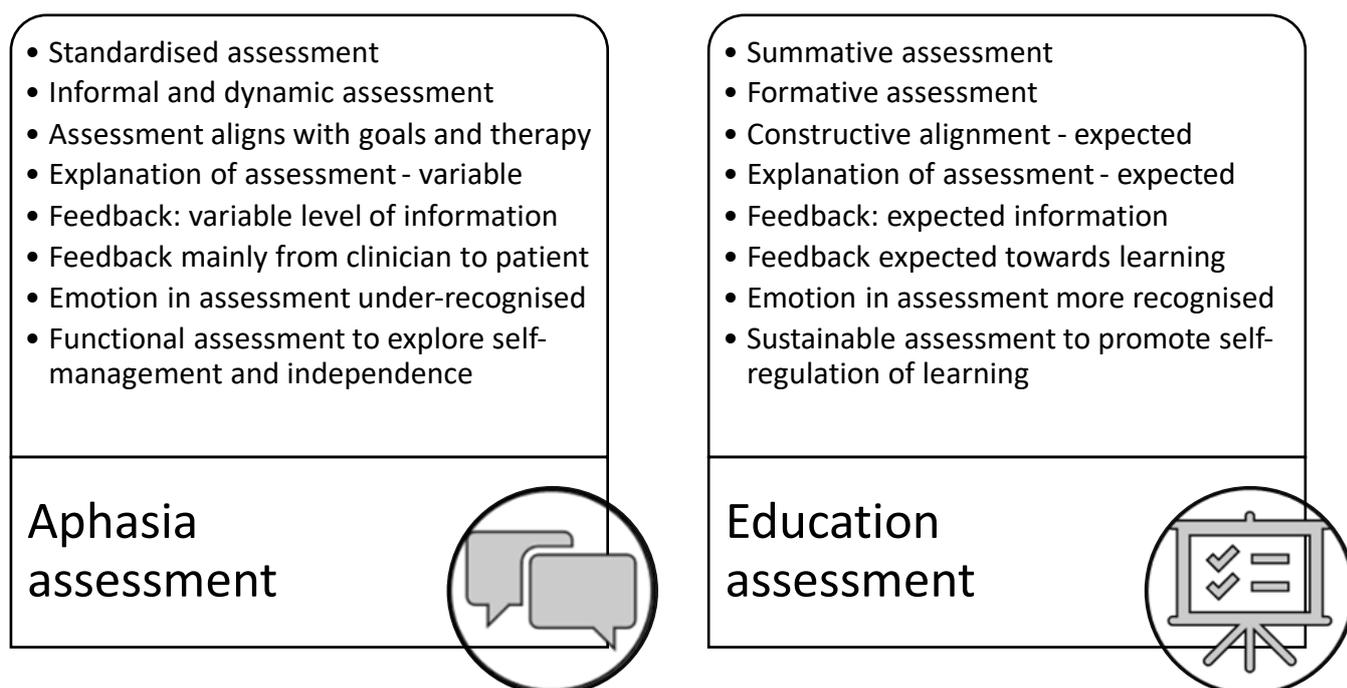
Falchikov, 2006; Boud & Soler, 2016; Soledad Ibarra-Sáiz, Rodríguez-Gómez, & Boud, 2021). The notion of sustainable assessment shares similarities with the promotion of self-evaluation and self-management within chronic conditions but this approach can be limited for people with aphasia perhaps because of the nature of the communication disorder (Nichol et al., 2017).

An important point of commonality between assessments in educational and rehabilitation contexts is that to be successful, the learner (student or patient) and the helper (teacher or clinician) have to identify and agree on the same goals and be committed to their pursuit. Without this, frustration results and optimal learning does not occur. Students or patients can become irritated by assessments when they do not see why they are needed.

Of key importance to both fields is giving genuine and useful *feedback* as distinguished from *information* about an assessment result. Information received by a learner from an assessment result simply judges the level reached at that point and, often, this information is given after a course or phase of learning is complete. It is difficult to know how useful this information is and whether it has any positive effect. Feedback, on the other hand, focuses on ways forward to meet goals, what learners need to do to move from their current level of performance to an improved level and where they want to be. Boud and Molloy (2013a,b) highlight the importance of moving away from feedback as a one-way process of giving information about an assessment to “a model of learning where the learner takes agency to solicit opinion to self-evaluate and to co-construct strategies for improvement” (2013a, p.7). They note the need to “close the loop” (p.8) where feedback leads to action and change. If the provision of feedback after an assessment can have a positive effect on further attempts at a skill or activity, and also enable the learner to be able to self-evaluate, then the effect is not only productive but also more sustainable. Through effective feedback, learners should be able to identify errors or points for improvement for themselves and ideally be able to reach a point where they can develop strategies to avoid making the same errors in the future.

### **Parallels and distinctions between assessments in rehabilitation and education**

We have started to look at the relationship between assessment in rehabilitation and education contexts and this is noted in Figure 3, viewing the two contexts side by side.

**Figure 3.** Comparing assessment contexts in practice.

As suggested above, standardised assessments share aspects with summative assessments such as formal tests or exams, for example, in their focus on quantifying or judging the level a person has reached without prompting or interruption. Informal and dynamic assessments in rehabilitation are more like formative assessment with its focus on scaffolding how the learner can move forward. However, there are also differences raised by this exercise. In education settings, students are usually aware of the nature of their assessments in advance. They may have a rubric with a clear idea of what they are expected to know and how marks will be allocated to a particular task. In outpatient or community settings, people with aphasia may know when an assessment is booked but may not have a clear sense of what it might entail (unless they have undergone such an assessment before such as in university clinic contexts, where they might be very familiar with such tests as each group of students comes to work with them (Hersh et al., 2022)). When one considers experiences of assessment more broadly by different members of the multidisciplinary team, patients on a stroke ward may be asked to undertake many assessments on the spur of the moment. They may be assessed within a conversation, a therapy activity, or through being observed without realising the significance of the information being gained and recorded. They may be asked the same questions many times. Unlike students, who are focused on learning for a chosen course, people after a stroke, including those with aphasia, are concerned for their health and functioning, and in acute settings are likely to be in shock, feeling unwell and disorientated. Assessments may be raw and intrusive. People may be assessed in their hospital gown, in their bed, in the shower. Assessments may be administered by health professionals they have not met before and may never meet again. Unlike for students, they may never be told their results or fully understand the implications of their scores or the observations that are recorded (Lynch et al., 2015; Tyson et al., 2014). In some cases, patients are not assessed when they should be (Australian Stroke Coalition, 2012), for example, when rehabilitation teams decide whether or not to assess suitability for further stroke rehabilitation.

In hospital and inpatient rehabilitation settings, when aphasic communication difficulties and other consequences of stroke or brain injury are most acute, people may have very little idea about their assessments, their purpose, how performance is judged and even

what the consequences might be of what they regard as succeeding or failing on the test. In their detailed analysis of practice in 25 videos of usual care aphasia therapy sessions early after stroke, Brogan et al., (2020, p.1307) wrote:

*Task explanations were frequently surface level and the majority of the time, there was no mention of the rationale behind the chosen tasks or a discussion of possible mechanisms of action in the brain. This is not in line with adult learning principles that suggest tasks should be relevancy orientated and adults need to be sufficiently informed to see the reason for learning to increase their motivation and learning capacity.*

While this study was not specifically on assessment, it suggests that lack of explanation is not uncommon in this early phase and helps to contextualise comments about assessment from people with aphasia. An example is from a participant, Betty, in the seminal study “Talking about Aphasia” (Parr et al., 1997): “The speech therapist came once or twice and gave me one of those tests, you know, with the spelling and everything and I couldn’t make head nor tail of it...” (p. 77). Moreover, Brogan et al. (2020) also noted that clinician feedback on tasks was mainly characterised by “whether their answer was correct or incorrect” and that supportive feedback (praise) was “not necessarily related to the accuracy of the response” (p. 1308). This kind of practice may provide general encouragement, which people with aphasia may well appreciate, but does not promote problem-solving or self-awareness, and reinforces the accepted position that assessment is an opportunity for clinicians to learn about clients but less so for clients to learn about their own condition. While Murray and Coppens (2017) write that during testing, clinicians should describe “how or why a particular response was or was not successful” (p. 99), they say that “during most of the assessment process, feedback and specific reinforcement should not be used at all” (p.99). This, they argue, is because the assessment stimuli might be used again in the future as a measure against a baseline (and similar arguments are often given by educators as to why students cannot take away exam papers of multiple-choice questions). They do, however, encourage clinicians to discuss results and feedback at the end of the exercise, but not during the task. This is an understandable and accepted approach when doing formal assessment with standardised administration procedures, but opportunities to provide feedback for learning are secondary, and perhaps less effective by being delayed and less contextualised.

The role of feedback in assessment appears to have been quite different between rehabilitation and education contexts, which perhaps is unsurprising considering the primacy of *learning* as opposed to *treatment*. Feedback is part of the assessment process but a crucial and distinct element (Boud & Dawson, 2021; Winstone & Boud, 2022). Of course, rehabilitation is also about learning, but we argue that this aspect has been less prominent within assessment sessions and interactions, perhaps traditionally viewed as separate from, and preceding, therapy. Feedback during therapy tasks is also valued highly but if a person with aphasia has not received feedback that allows them to connect their performance in assessment and their subsequent treatment, they will be less able to follow the rationale for it and less likely to engage with therapy. In rehabilitation, verbal feedback from assessments, if provided, may not necessarily also be offered in an accessible written format. This is problematic as people with aphasia may not easily comprehend or remember the details of verbal feedback alone, and this means its potential for learning is lost. Moreover, as patients move from acute, to sub-acute and community services, there may be a change of clinician at each phase. For this reason, assessment feedback (rather than simply results) should be

recorded in an accessible way and have therapeutic value, thereby allowing the patient to be active and engaged in their learning over time and across sites.

In education contexts, the notion of constructive alignment is important, the idea that what you take from a course is represented by the desired learning outcomes. The assessments that judge how one meets those learning outcomes also need to be part of that process of alignment. In aphasia rehabilitation, it may be that the dislocation of assessments from a shared plan for therapy is one reason for the recommendation to do collaborative goal setting for therapy prior to the assessment.

Effectively, we suggest that notions of assessment can move from being a clinician-centred activity for data gathering to a time for information sharing, recognising agency, and client learning. Of course, people with aphasia would need to be well enough, medically stable, and able to engage in order to benefit, but assessment is a feature of practice that is part of the full journey of language recovery. It takes up a significant proportion of time with a therapist and therefore is worth reconsidering to fully tap its potential for benefit to clients with aphasia. Figure 3 also acknowledges emotions as important in assessment. In education contexts, there is increasing recognition of the impact of assessment on emotions (Falchikov & Boud, 2007) and of emotions in feedback (Molloy, Borrell-Carrio & Epstein, 2013). While emotions around assessment may be experienced positively or negatively, negative or critical feedback can have a considerable impact on confidence and self-worth, particularly where a trusting and productive relationship with the teacher is lacking. As noted above by Christopher Green, in rehabilitation contexts, there is a tendency for assessments to focus on deficits, and on what a person has lost. This is important because the sense of failure or inadequacy is not only about one's level of knowledge or ability, but fundamentally about one's sense of self post stroke. For this reason, it is essential to build opportunities for genuine, positive feedback around the assessments and indeed, *two-way* feedback where an engaged patient can respond to and question the clinician through supported conversations, or aphasia-friendly written explanations. In practice, effective clinicians are aware of the emotional impact of assessment, but we have little evidence about how people with aphasia feel about being assessed, what it means for them to get a low score on a test, or how frustration, fatigue, or anxiety influence assessment performance or engagement. We also need to better understand the relationship of assessment to self-management and how the experiences of assessment sessions might contribute to patient motivation and self-efficacy.

Our consideration of the parallels and differences between these two contexts may help prompt the following points for reflection:

- Speech pathologists need to consider the purpose of assessment at different stages and in different contexts and the role of the person with aphasia as an active, adult learner.
- Assessment is a necessary but potentially confronting experience in the context of sudden and ongoing adjustment to illness and disability, and the influence of aphasia on the person's ability to ask questions or process information about their performance.
- Verbal feedback from assessments should also be offered in an accessible format, such as through a visual summary for the person to take with them, to support learning, self-evaluation, and a chance to revisit the information.
- Assessments involving scores need to be shared sensitively; results should be formulated in terms of meeting desired outcomes rather than reporting scores which could indicate a sense of failure, particularly damaging at such a vulnerable time. The relationship between assessment, emotions, and potential impact on motivation needs greater

acknowledgment. This is not only about assessment for learning but also about assessment for ongoing motivation in rehabilitation.

- Assessment which seeks to be a learning opportunity should be essentially formative and sustainable to produce outcomes valued by the client. However, with appropriate supports for engagement and feedback after standardised administration, formal assessments can also be opportunities for learning, particularly if clients understand the rationale and value of them.
- There should be an alignment of the goals of the client and the clinician, and the choice of assessments should be relevant to those goals, ongoing intervention, and measures of outcome.
- Repetition of the same assessment may be experienced as burdensome. There should be an accessible explanation as to why a repeated assessment may be useful – for example, for judging spontaneous change, outcomes of treatment or to support action plans.
- Through the rehabilitation journey, assessment experiences, not just in speech pathology but across the multidisciplinary team, should contribute to the shift over time to develop self-confidence, agency, and sustainable learning by the client.

## Conclusions

In this paper, we have explored assessment from the perspective of two distinct disciplines to draw out parallels and reflect on practice. Aphasia rehabilitation has much to learn from education about the power of assessment as a driver for learning, and about the importance of adult learning theory in engaging clients more effectively, not just in therapy, but also during assessment. This perspective may be useful for other rehabilitation disciplines beyond speech pathology. The traditional view that assessments are mainly for data gathering to enable clinicians to provide therapy, has meant that explanations about the purpose of assessment and feedback on performance have been limited, and aphasia therapists may be missing opportunities to capitalise fully on the time that they spend with clients with aphasia in assessment. Attention to the rich development of ideas about learning through assessment in education is useful to challenge our assumptions and perhaps prepare our clients with aphasia for a more productive and sustainable learning journey to support their recovery.

## References:

- Armstrong, E. M., Ciccone, N., Hersh, D., Katzenellenbogen, J., Coffin, J., Thompson, S., Flicker, L., Hayward, C., Woods, D., & McAllister, M. (2017). Development of the Aboriginal Communication Assessment After Brain Injury (ACAABI): A screening tool for identifying acquired communication disorders in Aboriginal Australians. *International Journal of Speech-Language Pathology*, *19*(3), 297–308. <https://doi.org/10.1080/17549507.2017.1290136>
- Australian Stroke Coalition Rehabilitation Working Group. (2012). *Assessment for Rehabilitation: Pathway and Decision-Making Tool*. Melbourne, Australia.
- Avent, J., Glista, S., Wallace, S., Jackson, J., Nishioka, J., & Yip, W. (2005). Family information needs about aphasia. *Aphasiology*, *19*(3-5), 365-375. DOI: [10.1080/02687030444000813](https://doi.org/10.1080/02687030444000813)
- Baker, C., Foster, A. M., D'Souza, S., Godecke, E., Shiggins, C., Lamborn, E., Lanyon, L., Kneebone, I., & Rose, M. L. (2021). Management of communication disability in the first 90 days after stroke: a scoping review. *Disability and Rehabilitation*, 1–15. Advance online publication. <https://doi.org/10.1080/09638288.2021.2012843>

- Barnard, R.A., Cruice, M., & Playford, E.D. (2010). Strategies used in the pursuit of achievability during goal setting in rehabilitation. *Qualitative Health Research*, 20(2), 239-250. doi: 10.1177/1049732309358327.
- Berg, K., Rise, M.B., Balandin, S., Armstrong, E., Askim, T. (2016). Speech pathologists' experience of involving people with stroke-induced aphasia in clinical decision making during rehabilitation. *Disability and Rehabilitation*, 38(9), 870-878. doi:10.3109/09638288.2015.1066453
- Berg, K., Askim, T., Balandin, S., Armstrong, E., Rise, M.B. (2017). Experiences of participation in goal setting for people with stroke-induced aphasia in Norway. A qualitative study. *Disability and Rehabilitation*, 39(11), 1122-1130. doi:10.1080/09638288.2016.1185167
- Boud, D. (2000). Sustainable assessment: rethinking assessment for the learning society. *Studies in Continuing Education*, 22, 2, 151-167. DOI: 10.1080/713695728.
- Boud, D. and Dawson, P. (early online, 2021). What feedback literate teachers do: an empirically derived competency framework. *Assessment and Evaluation in Higher Education*, DOI:10.1080/02602938.2021.1910928
- Boud, D. and Falchikov, N. (2006). Aligning assessment with long-term learning. *Assessment and Evaluation in Higher Education*, 31(4), 399-413. <https://doi.org/10.1080/02602930600679050>
- Boud, D. & Falchikov, N. (2007). *Rethinking Assessment in Higher Education*. Abingdon, Oxon: Routledge.
- Boud, D. & Molloy, E. (2013a). *Feedback in Higher and Professional Education: Understanding it and doing it well*. Abingdon, Oxon: Routledge.
- Boud, D. and Molloy, E. (2013b). Rethinking models of feedback for learning: the challenge of design. *Assessment and Evaluation in Higher Education*, 38(6), 698-712. DOI: 10.1080/02602938.2012.691462
- Boud, D. and Soler, R. (2016). Sustainable assessment revisited. *Assessment and Evaluation in Higher Education*, 41(3), 400-413. DOI: 10.1080/02602938.2015.1018133.
- Brogan, E., Godecke, E., & Ciccone, N. (2020). Behind the therapy door: what is “usual care” in aphasia therapy in acute stroke management? *Aphasiology*, 34(10), 1291-1313. <https://doi.org/10.1080/02687038.2020.1759268>
- Carragher, M., Steel, G., O'Halloran, R., Torabi, T., Johnson, H., Taylor, N. F., & Rose, M. (2021). Aphasia disrupts usual care: the stroke team's perceptions of delivering healthcare to patients with aphasia. *Disability and Rehabilitation*, 43(21), 3003–3014. <https://doi.org/10.1080/09638288.2020.1722264>
- Christie, J., Clark, W. & Mortensen, L. (1986) *Mount Wilga High Level Language Test*, (1st ed). Sydney: Mt Wilga Rehabilitation Centre.
- Clark, H. (1996). *Using Language*. Cambridge: Cambridge University Press.
- Coppens, P. & Simmons-Mackie, N. (2018). Operationalizing Informal Assessment. In: P.Coppens & J. Patterson (Eds). *Aphasia Rehabilitation: Clinical Challenges*. Burlington, MA: Jones & Bartlett Learning. (pp.437-460).
- Cruice, M., Botting, N., Marshall, J., Boyle, M., Hersh, D., Pritchard, M. and Dipper, L. (2020). UK speech and language therapists' views and reported practices of discourse analysis in aphasia rehabilitation. *International Journal of Language &*

*Communication Disorders*, 55(3), 417-442. <https://doi.org/10.1111/1460-6984.12528>

- Dickey, L., Kagan, A., Lindsay, M. P., Fang, J., Rowland, A., & Black, S. (2010). Incidence and profile of inpatient stroke-induced aphasia in Ontario, Canada. *Archives of Physical Medicine and Rehabilitation*, 91(2), 196–202. <https://doi.org/10.1016/j.apmr.2009.09.020>
- Doedens, W.J., & Meteyard, L. (2020). Measures of functional, real-world communication for aphasia: a critical review. *Aphasiology*, 34(4), 492-514. DOI:10.1080/02687038.2019.1702848
- Doedens, W. J., & Meteyard, L. (2022). What is Functional Communication? A Theoretical Framework for Real-World Communication Applied to Aphasia Rehabilitation. *Neuropsychology Review*, 32(4), 937–973. DOI:10.1007/s11065-021-09531-2
- El Hachoui, H., Visch-Brink, E. G., de Lau, L. M., van de Sandt-Koenderman, M. W., Nouwens, F., Koudstaal, P. J., & Dippel, D. W. (2017). Screening tests for aphasia in patients with stroke: a systematic review. *Journal of Neurology*, 264(2), 211–220. <https://doi.org/10.1007/s00415-016-8170-8>
- Elman, R. J. (2007). *Group Treatment of Neurogenic Communication Disorders: The Expert Clinician’s Approach* (2nd ed.). Plural Publishing.
- Elston, A., Barnden, R., Hersh, D., Godecke, E., Cadilhac, D., Lannin, N., Kneebone, I., & Andrew, N. (2022). Developing person-centred goal setting resources with and for people with aphasia: A multi-phase qualitative study. *Aphasiology*, 36(7), 761-780. <https://doi.org/10.1080/02687038.2021.1907294>
- Engelter, S. T., Gostynski, M., Papa, S., Frei, M., Born, C., Ajdacic-Gross, V., Gutzwiller, F., & Lyrer, P. A. (2006). Epidemiology of aphasia attributable to first ischemic stroke: incidence, severity, fluency, etiology, and thrombolysis. *Stroke*, 37(6), 1379–1384. <https://doi.org/10.1161/01.STR.0000221815.64093.8c>
- Falchikov, N. & Boud, D. (2007). Assessment and emotion: The impact of being assessed. In: Boud, D. & Falchikov, N. (2007). *Rethinking Assessment in Higher Education*. Abingdon, Oxon: Routledge. (pp.144-155)
- Foster, A. M., Worrall, L. E., Rose, M. L., & O'Halloran, R. (2016). 'I do the best I can': an in-depth exploration of the aphasia management pathway in the acute hospital setting. *Disability and rehabilitation*, 38(18), 1765–1779. <https://doi.org/10.3109/09638288.2015.1107766>
- Galletta, E. E. & Schaeffer, N. (2012). Assessment of aphasia. In: C. Stein-Rubin, & R. Fabus (Eds). *A Guide to Clinical Assessment and Professional Report Writing in Speech-Language Pathology*. Clifton Park, NY: Cengage Learning. (pp. 282-304).
- Green, Christopher (2006). *Toddler Taming: The guide to your child from one to four* (Revised). London: Transworld Publishers.
- Green, C., & Waks, L. (2008). A second chance: Recovering language with aphasia. *International Journal of Speech-Language Pathology*, 10(3), 127–131. <https://doi.org/10.1080/17549500801971517>
- Guo, Y. E., Togher, L., Power, E., Hutomo, E., Yang, Y. F., Tay, A., Yen, S. C., & Koh, G. C. (2017). Assessment of Aphasia Across the International Classification of

- Functioning, Disability and Health Using an iPad-Based Application. *Telemedicine journal and e-health: the official journal of the American Telemedicine Association*, 23(4), 313–326. <https://doi.org/10.1089/tmj.2016.0072>
- Haley, K.L., Cunningham, K.T., Barry, J., & de Riesthal, M. (2019). Collaborative goals for communicative life participation in aphasia: The FOURC Model. *American Journal of Speech-Language Pathology*, 28(1), 1-13. [https://doi.org/10.1044/2018\\_AJSLP-18-0163](https://doi.org/10.1044/2018_AJSLP-18-0163)
- Haley, K. L., Womack, J., Helm-Estabrooks, N., Lovette, B., & Goff, R. (2013). Supporting autonomy for people with aphasia: Use of the Life Interests and Values (LIV) Cards. *Topics in Stroke Rehabilitation*, 20(1), 22–35. doi: 10.1310/tsr2001-22
- Hallowell, B. (2022). *Aphasia and Other Acquired Neurogenic Language Disorders: A Guide for Clinical Excellence* (2<sup>nd</sup> Ed). San Diego: Plural Publishing.
- Helm-Estabrooks, N. (2001). *Cognitive Linguistic Quick Test*. San Antonio, TX: Psychological Corporation.
- Hersh, D. (1998). Beyond the ‘plateau’: Discharge dilemmas in chronic aphasia. *Aphasiology*, 12(3), 207-218. DOI: [10.1080/02687039808249447](https://doi.org/10.1080/02687039808249447)
- Hersh, D. (2016). Therapy in transit: managing aphasia in the early period post stroke. *Aphasiology*, 30(5), 509-516. DOI: [10.1080/02687038.2015.1137555](https://doi.org/10.1080/02687038.2015.1137555)
- Hersh, D., Agresta, M., Dichiera, D., & Wood, T. (2022). “I just wanting talking to get better”: Real world perspectives on goal setting for aphasia rehabilitation. (pp. 1-19). In: D. Webster (Ed). *Aphasia in Clinical Practice*. J&R Press.
- Hersh, D., Sherratt, S., Howe, T., Worrall, L., Davidson, B. & Ferguson, A. (2012b). An analysis of the “goal” in aphasia rehabilitation. *Aphasiology*, 26(8), 971-984. <http://dx.doi.org/10.1080/02687038.2012.684339>
- Hersh, D., Wood, P., & Armstrong, E. (2018). Informal aphasia assessment, interaction, and the development of the therapeutic relationship in the early period after stroke. *Aphasiology*, 32(8), 876-901. <https://doi.org/10.1080/02687038.2017.1381878>
- Hersh, D., Worrall, L., Howe, T., Sherratt, S. & Davidson, B. (2012a). SMARTER goal setting in aphasia rehabilitation. *Aphasiology*, 26(2), 220-233. <http://dx.doi.org/10.1080/02687038.2011.640392>
- Hersh, D., Worrall, L., O’Halloran, R., Brown, K., Grohn, B. & Rodriguez, A. (2013). Assess for Success: Evidence for therapeutic assessment. In: N. Simmons-Mackie, J. King & D. Beukelman (Eds.) *Supporting Communication for Adults with Acute and Chronic Aphasia*. Brookes Publishing. (pp. 145-164).
- Hill, A.J., Theodoros, D.G., Russell, T.G, Ward, E.C., & Wootton, R. (2009). The effects of aphasia severity on the ability to assess language disorders via telerehabilitation. *Aphasiology*, 23(5), 627-642. DOI: [10.1080/02687030801909659](https://doi.org/10.1080/02687030801909659)
- Hilton, R., Leenhouts, S., Webster, J., & Morris, J. (2014). Information, support and training needs of relatives of people with aphasia: Evidence from the literature. *Aphasiology*, 28(7), 797- 822. DOI: [10.1080/02687038.2014.906562](https://doi.org/10.1080/02687038.2014.906562)
- Holland, A., & Elman, R. J. (2021). *Neurogenic communication disorders and the life participation approach: The Social Imperative in supporting individuals and families*. Plural Publishing Inc.

- Hopper, T., & Holland, A. L. (2005). Aphasia and learning in adults: Key concepts and clinical considerations. *Topics in Geriatric Rehabilitation, 21*(4), 315-322.
- Horton, S. (2006). A framework for description and analysis of therapy for language impairment in aphasia. *Aphasiology, 20*(6), 528-564.  
DOI:10.1080/02687030600590130
- Huang, A.J.R., Siyambalapitiya, S. and Cornwell, P. (2019). Speech pathologists and professional interpreters managing culturally and linguistically diverse adults with communication disorders: a systematic review. *International Journal of Language & Communication Disorders, 54*, 689-704. <https://doi.org/10.1111/1460-6984.12475>
- Kagan, A., Simmons-Mackie, N., Victor, J. C., Carling-Rowland, A., Hoch, J., Huijbregts, M., & Mok, A. (2014). *Assessment for Living with Aphasia (ALA)–Revised*. Toronto, ON: Aphasia Institute.
- Kaplan, E., Goodglass, H., & Weintraub, S. (2001). *Boston Naming Test* (2<sup>nd</sup> Ed.). Philadelphia: Lippincott Williams & Wilkins.
- Kay, J., Lesser, R., & Coltheart, M. (1997). *Psycholinguistic assessments of language processing in aphasia*. Hove, England: Psychology Press.
- Kertesz, A. (2007). *Western Aphasia Battery-Revised*. San Antonio, TX: Psychological Corporation.
- Kimbarow, M.L. (2007). Integrating life participation approaches to aphasia treatment with adult learning theory: a synergistic approach. *Topics in Language Disorders, 27*(4), 318-323.
- Kiran, S., Cherney, L.R., Kagan, A., Haley, K.L., Antonucci, S.M., Schwartz, M., Holland, A.L., & Simmons-Mackie, N. (2018). Aphasia assessments: a survey of clinical and research settings. *Aphasiology, 32*:sup1, 47-49.  
DOI: 10.1080/02687038.2018.1487923
- Knowles, M.S., Holton, E.F., & Swanson, R.A. (2012). *The adult learner: the definitive classic in adult education and human resource development* (7<sup>th</sup> Ed.) Abingdon, Oxon: Routledge.
- Leach, E., Cornwell, P., Fleming, J. & Haines, T. (2010). Patient centered goal-setting in a subacute rehabilitation setting. *Disability and Rehabilitation, 32*(2), 159-172. doi: 10.3109/09638280903036605.
- Lomas, J., Pickard, L., Bester, S., Elbard, H., Finlayson, A., & Zoghaib, C. (1989). The communicative effectiveness index: development and psychometric evaluation of a functional communication measure for adult aphasia. *The Journal of Speech and Hearing Disorders, 54*(1), 113–124. <https://doi.org/10.1044/jshd.5401.113>
- Lynch, E. A., Luker, J. A., Cadilhac, D. A., & Hillier, S. L. (2015). Rehabilitation assessments for patients with stroke in Australian hospitals do not always reflect the patients' rehabilitation requirements. *Archives of Physical Medicine and Rehabilitation, 96*(5), 782–789. <https://doi.org/10.1016/j.apmr.2014.12.009>
- Mellahn, K., Larkman, C., Lakhani, A., Siyambalapitiya, S., & Rose, M. L. (2021). The nature of inpatient rehabilitation for people with aphasia from culturally and linguistically diverse backgrounds: a scoping review. *Topics in stroke rehabilitation, 1–11*. Advance online publication. <https://doi.org/10.1080/10749357.2021.2008599>

- Mitchell, C., Gittins, M., Tyson, S., Vail, A., Conroy, P., Paley, L. & Bowen, A. (2021). Prevalence of aphasia and dysarthria among inpatient stroke survivors: describing the population, therapy provision and outcomes on discharge. *Aphasiology*, 35(7), 950-960. DOI: 10.1080/02687038.2020.1759772
- Morris, J. & Webster, J. (2018). Language assessment in aphasia: an international survey of practice, *Aphasiology*, 32:sup1, 149-151, DOI: 10.1080/02687038.2018.1485846
- Murray, L. & Coppens, P. (2017). Formal and informal assessment of aphasia. In: I. Papathanasiou & P. Coppens (Eds). *Aphasia and Related Neurogenic Communication Disorders* (2<sup>nd</sup> ed). Burlington, MA: Jones and Bartlett Learning. (pp. 81-108)
- Myrberg, K., Hydén, L-C., & Samuelsson, C. (2018). Different approaches in aphasia assessments: a comparison between test and everyday conversations. *Aphasiology*, 32(4), 417-435. DOI: [10.1080/02687038.2017.1366416](https://doi.org/10.1080/02687038.2017.1366416)
- Nichol, L., Hill, A.J., Wallace, S.J., Pitt, R., Baker, C., & Rodriguez, A.D. (2019). Self-management of aphasia: a scoping review. *Aphasiology*, 33(8), 903-942. DOI: 10.1080/02687038.2019.1575065
- O'Halloran, R., Worrall, L., Toffolo, D., & Code, C. (2020). *Inpatient Functional Communication Interview: Screening, Assessment, and Intervention*. San Diego, CA: Plural Publishing.
- Papathanasiou, I. & Coppens, P. (2017). *Aphasia and Related Neurogenic Communication Disorders* (2<sup>nd</sup> Ed). Burlington, MA: Jones & Bartlett Learning.
- Patterson, J.P. & Chapey, R. (2008). Assessment of Language Disorders in Adults. In: R. Chapey (Ed.) *Language Intervention Strategies in Aphasia and Related Neurogenic Communication Disorders*. (pp. 64-160). Wolters Kluwer/Lippincott Williams & Wilkins, NY.
- Power, E., Thomas, E., Worrall, L., et al. (2015). Development and validation of Australian aphasia rehabilitation best practice statements using the RAND/UCLA appropriateness method. *BMJ Open* 5: e007641. doi:10.1136/bmjopen-2015-007641
- Rose, T.A., Balse, A., Osmond, S., Poon, A., Simons, N. & Wallace, S.J. (2018). Aphasia education: speech-language pathologists' perspectives regarding current and optimal practice. *Aphasiology*, 32(8), 967-988. DOI: 10.1080/02687038.2018.1472366
- Rose, M., Ferguson, A., Power, E., Togher, L., & Worrall, L. (2014). Aphasia rehabilitation in Australia: Current practices, challenges and future directions. *International Journal of Speech-Language Pathology*, 16(2), 169–180. <https://doi.org/10.3109/17549507.2013.794474>
- Rose, T., Wallace, S., & Leow, S. (2019). Family members' experiences and preferences for receiving aphasia information during early phases in the continuum of care. *International Journal of Speech-Language Pathology*, 21, 470-482. DOI: 10.1080/17549507.2019.1651396
- Sherratt, S., Worrall, L., Pearson, C., Howe, T., Hersh, D., Davidson, B. (2011). "Well it has to be language-related": speech-language pathologists' goals for people with aphasia and their families. *International Journal of Speech-Language Pathology*, 13(4):317-328. doi:10.3109/17549507.2011.584632

- Shrubsole, K., Worrall, L., Power, E., & O'Connor, D.A. (2017). Recommendations for post-stroke aphasia rehabilitation: an updated systematic review and evaluation of clinical practice guidelines. *Aphasiology*, 31(1), 1-24, DOI: [10.1080/02687038.2016.1143083](https://doi.org/10.1080/02687038.2016.1143083)
- Simmons-Mackie, N. & Damico, J. (1999). Social role negotiation in aphasia therapy: Competence, incompetence, and conflict. In: D. Kovarsky, J.F. Duchan, & M. Maxwell (Eds.) *Constructing (In)Competence: Disabling Evaluations in Clinical and Social Interaction*. (p. 313-341). Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.
- Simmons-Mackie, N. & King, J.M. (2013). Communication support for everyday life situations. In N. Simmons-Mackie, J.M. King, & D.R. Beukelman. (Eds). (2013). *Supporting communication for adults with acute and chronic aphasia*. (pp. 221-244). Baltimore, MD: Paul H. Brookes.
- Simmons-Mackie, N., Worrall, L., Murray, L., Enderby, P., Rose, M.L., Jin Paek, E., & Klippi, A. (2017). The top ten: best practice recommendations for aphasia. *Aphasiology*, 31(2), 131-151. DOI: [10.1080/02687038.2016.1180662](https://doi.org/10.1080/02687038.2016.1180662)
- Soledad Ibarra-Sáiz, M., Rodríguez-Gómez, G. & Boud, D. (2021). The quality of assessment tasks as a determinant of learning. *Assessment & Evaluation in Higher Education*, 46(6), 943-955, DOI: [10.1080/02602938.2020.1828268](https://doi.org/10.1080/02602938.2020.1828268)
- Speech Pathology Australia (2020). Professional Standards for Speech Pathologists in Australia. The Speech Pathology Association of Australia Limited.
- Stroke Foundation (2021). Clinical Guidelines for Stroke Management. Melbourne, Australia.
- Thomson, J., Gee, M., Sage, K., & Walker, T. (2018). What 'form' does informal assessment take? A scoping review of the informal assessment literature for aphasia. *International Journal of Language & Communication Disorders*, 53(4), 659–674. <https://doi.org/10.1111/1460-6984.12382>
- Tyson, S. F., Burton, L. J., McGovern, A., & Sharifi, S. (2014). Service users' views of the assessment process in stroke rehabilitation. *Clinical Rehabilitation*, 28(8), 824–831. <https://doi.org/10.1177/0269215514523300>
- van der Meulen, I., van de Sandt-Koenderman, W. M., Duivenvoorden, H. J., & Ribbers, G. M. (2010). Measuring verbal and non-verbal communication in aphasia: reliability, validity, and sensitivity to change of the scenario test. *International Journal of Language and Communication Disorders*, 45(4), 424–35. doi: [10.3109/13682820903111952](https://doi.org/10.3109/13682820903111952)
- Verna, A., Davidson, B., & Rose, T. (2009). Speech-language pathology services for people with aphasia: A survey of current practice in Australia. *International Journal of Speech-Language Pathology*, 11(3), 191-205. <https://doi.org/10.1080/17549500902726059>
- Vogel, A., Maruff, P., & Morgan, A. (2010). Evaluation of communication assessment practices during the acute stage post stroke. *Journal of Evaluation in Clinical Practice*, 16(6), 1183-1188. DOI: [10.1111/j.1365-2753.2009.01291.x](https://doi.org/10.1111/j.1365-2753.2009.01291.x)
- Wallace, S.J. Worrall, L. Le Dorze, G., Brandenburg, C., Foulkes, J. & Rose, T.A. (2022). Many ways of measuring: a scoping review of measurement instruments for use with

people with aphasia. *Aphasiology*, 36(40), 401-466.  
DOI:[10.1080/02687038.2020.1836318](https://doi.org/10.1080/02687038.2020.1836318)

- Wallace, S. J., Worrall, L., Rose, T., Le Dorze, G., Breitenstein, C., Hilari, K., ... Webster, J. (2019). A core outcome set for aphasia treatment research: The ROMA consensus statement. *International Journal of Stroke: Official Journal of the International Stroke Society*, 14(2), 180–185. <https://doi.org/10.1177/1747493018806200>
- Wallace, S. J., Worrall, L., Rose, T., Le Dorze, G., Cruice, M., Isaksen, J., Kong, A., Simmons-Mackie, N., Scarinci, N., & Gauvreau, C. A. (2017). Which outcomes are most important to people with aphasia and their families? an international nominal group technique study framed within the ICF. *Disability and Rehabilitation*, 39(14), 1364–1379. <https://doi.org/10.1080/09638288.2016.1194899>
- Whalley Hammell, K. (2015). Rethinking rehabilitation’s assumptions: Challenging “Thinking-as-Usual” and envisioning a relevant future. In: K. McPherson, B. Gibson, & A. Leplège. (Eds.) *Rethinking Rehabilitation: Theory and Practice*. Boca Raton, FL: CRC Press. (pp. 45-67)
- Whitworth, A., Webster, J. & Howard, D. (2014). A Cognitive Neuropsychological Approach to *Assessment and Intervention in Aphasia: A clinician’s guide*. (2<sup>nd</sup> Ed) Hove, Psychology Press.
- Winstone, N.E. & Boud, D. (2022). The need to disentangle assessment and feedback in higher education. *Studies in Higher Education*, 47(3), 656-667. DOI: [10.1080/03075079.2020.1779687](https://doi.org/10.1080/03075079.2020.1779687)
- World Health Organization. (2001). World Health Organization: International classification of functioning, disability and health (ICF). Geneva, Switzerland.
- Worrall L. (2019). The seven habits of highly effective aphasia therapists: The perspective of people living with aphasia. *International Journal of Speech-Language Pathology*, 21(5), 438–447. <https://doi.org/10.1080/17549507.2019.1660804>