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Universal design

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Universal design is for everyone. It has nothing to do with intelligent design, creationism or creation science, and everything to do with the intelligent use of creativity. As a philosophy, it embraces the ideal of designing products, buildings and environments that are not only aesthetically appealing but also usable, as far as is possible, by all individuals irrespective of age, ability, or life status. For designers, architects, builders, manufacturers and end users it takes the design discussion beyond codes, standards and specifications into the realm of equal opportunity of access to our worlds as a basic human right.

All of us experience changing needs and capabilities as life unfolds, and as participants in society, we derive benefits from having good and comfortable access to products and places. By planning considerately, flexibly and universally, for children, adults young and old, and people of all ages with disabling conditions, designers and those who advise them do not have to confine themselves to thinking about separate groups. Instead their palette is the broad, ever-changing spectrum of human engagement with the environment.

The process called "design thinking" has seven dynamic stages: define, research, ideate, prototype, choose, implement, and learn (Simon, 1969), displayed in the box.

The stages are non-linear and each may be repeated as often as necessary. Design thinking can be applied or adapted in the pursuit of any universal design solution including attractive, comfortable apparel that is easy to put on and take off, bright and appropriate lighting including task lighting, ramp access to swimming pools, smooth ground surfaces in entranceways without stairs, wide interior doors and hallways, closed captioning on TV networks, readily recognisable icons as well as text labels, and appropriate signage.

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Labels, signage and participation

A disability is any condition that restricts a person's mental, sensory or mobility functions. One in five Australians (nearly 4 million people) has such a condition. Disabilities can be due to accidents, disease, heredity or trauma, and may be transient or permanent, complete or partial, lifelong or acquired, obvious or subtle. Among Australians who are of working age (15 to 64 year olds), 2.2 million have a disability;

The seven stages of design thinking (Simon, 1969, p. 55)

Define	Research	Ideate	Prototype	Choose	Implement	Learn
Decide on the issue you are trying to resolve.	Review the history of the issue, remembering any existing obstacles.	Identify the needs and motivations of the end-users of the design.	Combine, expand and refine ideas.	Review the objective.	Make task descriptions.	Gather feedback from the consumer.
Agree on who the target audience is.	Collect examples of other attempts to solve the same design issue.	Generate as many ideas as possible to serve these identified needs.	Create multiple drafts.	Set aside emotion and ownership of ideas.	Plan tasks.	Determine whether the "solution" met its goals.
Prioritise this project in terms of urgency.	Note the project supporters, investors and critics.	Log your brainstorming session.	Seek feedback from a diverse group of people, including the end users.	Avoid consensus thinking.	Determine resources.	Discuss what could be improved.
Determine what will make this project successful.	Talk to the end-users (potentially the source of the most fruitful ideas for later design).	Do not judge or debate ideas.	Present to the client a selection of ideas.	Remember, the most practical solution is not always the best.	Assign tasks.	Measure success; collect data.
Establish a glossary of terms.	Take into account the opinions of leading thinkers and "thought leaders.	In brainstorming sessions have one conversation at a time.	Reserve judgement and maintain neutrality.	Select the powerful ideas.	Execute.	Document.
					Deliver to client.	

while around 50% of people over 55 years have problems with mobility, hearing or vision. The effects of disability impinge on the one-in-five and also on their families, friends, colleagues, the wider community and ultimately society.

Viewed through lenses that are socially and culturally constructed, the labels "disability", "impairment" and "special needs" connote images of clunky grab rails, unsightly ramped entries tacked on and inconveniently tucked away at the rear of buildings, and oversized and ugly plumbing. The accompanying signage amounts to unintentional symbols of separateness: the semiotics and markers of lives that are considered to be out of the ordinary and less competent.

While assistive technology and safe access solutions are essential components of universal design, it comes to us with a deliberate shying away from the concept of *removing* barriers and providing special concessions for certain populations. Instead, its objective is to find practical ways to meet the environmental needs of all people. In that sense, universal design is not a synonym for "accessibility" with its air of catering to the needs of someone special; someone who fits in a category of difference. The emphasis is on lifespan design for children and adults who may or may not be cast as "different" or "disabled" at any point in the journey from birth to death. The overriding message from universal design enthusiasts is one of "we *all* should be able to access this or that product or building or environment" as opposed to "*they* should be able to access them".

Information technology

From the time of the inception of the **world wide web**, the **web accessibility initiative**[1] and universal design on the Internet2 have been constant preoccupations for those involved in information and communication technology, and resources are plentiful. For one excellent example, there are the **DO-IT**[3] pages from the University of Washington with its many universal design resources. Adobe and Apple offer straightforward accessibility tutorials and Windows makes it easy to master the accessibility settings for 7, Vista and XP step-by-step. In each instance the accessibility settings are particularly helpful to people with visual difficulties, hearing loss, discomfort in their hands or arms, or reasoning and cognitive issues. Features include speech recognition, screen magnifiers, text-to-speech narrators, captions, on-screen keyboards, mouse keys, shortcuts, sticky keys (e.g. one key stroke for Ctrl, Alt, Delete), filter keys and visual notifications instead of sounds.

One priority of the Education Services section of the National Library of Australia is its commitment to formulating and reviewing policies that advocate for, and ensure the best and most equitable possible access to, library services for people with disabilities. In keeping with this goal the **Disability Awareness Kit**[4] provided by the State Library of Victoria is a training resource for public library customer service staff. It covers a range of topics including print disability, hearing impairment, physical disability, intellectual disability and psychiatric disability. Each section of this well organised site contains core information and handouts, training activities, and resources. Similarly, the **Australian Library and Information Association**[5] has guidelines on library standards for people with disabilities, that make for interesting and informative reading.

Bête noire

Unsurprisingly, the topics of libraries and access bring us the Webwords' *bête noire* of the poor access to professional literature that is the lot of many a speech-language pathologist. It is true that members of the speech-language pathology professional associations in Australia, Canada, the UK, the US and elsewhere receive their associations' publications, as hard copies or electronic copies, or both, as a member benefit. Speech Pathology Australia members receive the *International Journal of Speech-Language Pathology* and *ACQ*, RCSLT members receive the *International Journal of Language and Communication Disorders* and the *Bulletin*, ASHA members receive four journals and the *ASHA Leader*, CASLPA members receive the *Canadian Journal of Speech-Language Pathology and Audiology*, SASHLA members get the *South African Journal of Communication Disorders*, and so forth. It is also the case that **International Affiliate**[6] members of ASHA have access to electronic copies of every issue of all the **ASHA journals**[7] and other publications for a reasonable annual fee.

These member and affiliate member benefits are worthwhile and value for money, but they provide an incomplete solution for the SLP engaged in any form of research, such as the individual clinician seeking in-depth and current information about syndromes and conditions that affect people on his or her caseload. It is tantalising to know, from freely available journal abstracts and alerts, that the information exists. Frustration mounts with the realisation that it is in one or more of the 24 journals for the speech pathology discipline listed in the **ERA 2010 Ranked Journal List**[8] or in the journals of early childhood, education, evidence based practice, genetics, health, hearing, linguistics, medicine and psychology that abound. But unless we are affiliated, personally or through work, with an institutional library these essential resources are out of reach for most of us.

Access to journals

The **phonologicaltherapy**[9] discussions hold many examples of frustrated speech pathologists desiring access to journals such as *Aphasiology*, the *British Medical Journal*, *Child Language Teaching and Therapy*, *Clinical Linguistics and Phonetics, Evidence-Based Communication Assessment and Intervention*, *Folia Phoniatrics et Paedia*, the *Journal of Child Language*, the *Journal of Medical Speech-Language Pathology*, *Seminars in Speech and Language*, *Topics in Language Disorders*, and others. Quite rightly, copyright restrictions prevent the sharing of wanted articles by members who do have access to them so many one-off requests for papers are unfulfilled.

The members of the discussion group who are employed by the New Zealand Ministry of Education and in special schools are more fortunate in this respect than most speech-language practitioners in public service and in private practice worldwide. Speech-language therapists working for the ministry Specialist Education Services (SES), and before that the NZ Department of Education, have always had library access. In the early 1990s SES created its own library, and the comprehensive services now provided by the **Ministry of Education Library**[10] (established in 2006) were built on this foundation. They were, and continue to be, further developed and moved wherever possible into an online environment.

ACQuiring knowledge in speech, language and hearing

Today, the ministry's three hundred or so speech-language therapists and special education SLTs have free access to the key journals for our discipline. The library services the entire ministry, with loans and document delivery; new resources alerts comprising two online monthly bulletins of new journal articles and new catalogue additions; literature searches by expert reference librarians; access to online resources and reference tools; and effective searching workshops (e.g. for newly employed NZMINEDU SLTs). The library has twelve journal subscriptions specifically for SLTs, and the SLTs also have online access to other publications in special and general education.

Sounding justifiably proud of this valuable service, Ministry of Education Library Manager Hilary Rendell writes,

The nature of our service makes for a very busy and interesting time for the library staff. We cover a wide range of disciplines and subject matter and this can be a challenge for us in terms of collection development. We have separate ways of delivering our services within the Ministry of Education and to our external library users, launching online services internally via the Ministry's intranet, and using our Education Library web platform for external clients.

It all sounds like a dream come true and there should be more of it! We cannot do our jobs without legal, inexpensive, uncomplicated, electronic access to research evidence, and we need to say so. It is time for employers to be pressed to organise privileges with institutional libraries, and employees to agitate to ensure journal access as a condition of employment.

Reference

Simon, H.A. (1969). *The sciences of the artificial*. Cambridge: MIT Press.

Links

1. http://www.w3.org/WAI
2. http://www.isoc.org/briefings/002
3. http://www.washington.edu/doit
4. http://www.openroad.net.au/access/dakit/welcome.htm
5. http://www.alia.org.au/policies/disability.standards.html
6. http://www.asha.org/members/international/affiliate.htm
7. http://journals.asha.org
8. http://www.arc.gov.au/era/era_journal_list.htm
9. http://health.groups.yahoo.com/group/phonologicaltherapy
10. http://library.education.govt.nz

Webwords 38 is at http://speech-language-therapy.com/webwords38.htm with live links to featured and additional resources.