



## Technology and the evolution of clinical methods for stuttering

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### ABSTRACT

The World Wide Web (WWW) was 20 years old last year. Enormous amounts of information about stuttering are now available to anyone who can access the Internet. Compared to 20 years ago, people who stutter and their families can now make more informed choices about speech-language interventions, from a distance. Blogs and chat rooms provide opportunities for people who stutter to share their experiences from a distance and to support one another. New technologies are also being adopted into speech-language pathology practice and service delivery. Telehealth is an exciting development as it means that treatment can now be made available to many rural and remotely located people who previously did not have access to it. Possible future technological developments for speech-language pathology practice include Internet based treatments and the use of Virtual Reality. Having speech and CBT treatments for stuttering available on the Internet would greatly increase their accessibility. Second Life also has exciting possibilities for people who stutter.

**Educational objectives:** The reader will (1) explain how people who stutter and their families can get information about stuttering from the World Wide Web, (2) discuss how new technologies have been applied in speech-language pathology practice, and (3) summarize the principles and practice of telehealth delivery of services for people who stutter and their families.

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### 1. Introduction

We live in a rapidly growing technological age. It is now 40 years since the development of the Internet and 20 years since the conception and invention of the World Wide Web (WWW). The WWW is one of the many services running on the Internet. Access to information and communications technology is now widespread in developed countries and in many developing countries, and we can access and exploit relevant information about almost anything, with resources such as the popular web browser Google and the online peer-fed encyclopedia Wikipedia. We can communicate easily and effectively with friends, family and colleagues around the world with interactive resources such as Skype, both seeing and hearing our distance communication partner in real time. Email allows almost instantaneous text communications and cell phones allow for easy and convenient connections with speech and text, regardless of location. The WWW can be accessed in some fashion by many types of computers, PDAs, laptops, mobile phones and other inexpensive devices. In recent times, the technology for accessing all these advancements has become even cheaper, easier to use, more portable and publicly accepted. As well as increased communications, we now have an array of digital items on hand in everyday use such as cameras, camcorders, audio recorders, DVD players, microwave ovens, electronic games. . . the list goes on and on.

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These technological developments have led to exciting changes in the area of health care. These are of course most notable in the in the area of diagnosis and treatment of disease, such as with body scanning techniques, radiotherapy and sophisticated surgical procedures. One development in the delivery of health care to emerge from the technological age is telemedicine (e.g., Balas et al., 1997).

So, more specifically, what has the technological age delivered for people who stutter (PWS) and their families? Has the increased access to knowledge provided by the Internet empowered PWS and has it enriched their lives? And has the speech-language pathology profession exploited recent technological advances to improve services for PWS and their families?

In this article, we first explore how PWS and their families have benefited from access to and sharing of information on the Internet. We then overview the contribution that advances in technology have made to speech-language pathology practice for stuttering. We conclude by suggesting some ways that clinical services for PWS and their families will change, hopefully for the better, with further technological developments.

The use of technology is not without problems, however, and for this reason we have included caveats in some sections. This has been done to raise awareness of limitations and possible problems associated with the technology discussed.

## **2. The Internet: information and resources about stuttering and its treatment**

The last ten years or so have seen a burgeoning of information about stuttering and its treatment on the Internet. In this section, this is discussed in relation to PWS and their families and to speech-language pathologists.

### *2.1. Resources for people who stutter and their families*

Blogs and chat rooms provide opportunities for PWS to communicate with each other at a distance, allowing easy and free exchange of information and ideas about every aspect of stuttering. This can be done anonymously, which can be liberating for some. There are large and very active forums run and managed by PWS themselves encouraging discussion about treatment, hope and the future. Listservs enable open discussion and debate about the self, identity and experiences of stuttering (Stoudt & Ouellette, 2004). Of course, technology-based text communications such as blogs, chat rooms, email and cell phone texting are a boon for many PWS, and indeed for people with other communication disorders, who do not feel confident about the effectiveness of their verbal communication.

The blogs and chatrooms referred to here are typically intended for adults who stutter. However, some are designed especially for teens and children who stutter. These are typically screened and do not have a chat facility (for example, see the website of the [National Stuttering Association, 2009](#)).

There are also now massive amounts of information about stuttering and its treatment available to anyone who can access the Internet. The websites of universities that conduct speech-language pathology professional preparation programs typically have pages devoted to the nature of stuttering and the treatment programs on offer. Professional organizations such as Speech Pathology Australia (SPA), American Speech and Hearing Association (ASHA) and Canadian Association of Speech Language Pathologists and Audiologists (CASLPA) have websites that provide information about treatment and how to find a speech-language pathologist. These sites are vetted by professionals. The websites of other clinical, research, nonprofessional and self-help organizations and groups are also sources of information, all of which can be accessed with some simple button presses.

What is really empowering about this access to information is that it provides PWS and their families with the knowledge needed to make informed decisions about treatments. Twenty years ago, PWS and parents of young children who started to stutter typically sought advice from their local medical practitioner, and sought professional services from the nearest institution or speech clinic. PWS seeking professional help, then, were liable to accept with little question the views of the professionals they spoke to about the nature, cause and treatment of stuttering. With access to the Internet, however, consumers can now track down just about every existing view on stuttering, whether it is from professionals, or from PWS, or indeed from anyone else with ideas about stuttering that wishes to broadcast them. This means that the consumers of speech-language pathology services can now weigh up the pros and cons of various interventions, professional or otherwise, and make informed enquiries and informed choices. For example, parents around the world who are considering participating with their child in the Lidcombe Program (LP) of Early Stuttering Intervention can visit the website of the Australian Stuttering Research Centre (ASRC) where they will find research articles about the efficacy of the program and also the treatment manual. Parents can access this information on their own terms, in a location that they choose and at a pace they prefer. This means that their decision whether to participate in the program is well informed from a distance. If they decide to participate, they can check that their clinician is in fact following the treatment manual and, if they are not, ask why.

It is important to note that the Internet can also be used to bring about or publicize global movements for change. At the time of writing, there is a move to have unsubstantiated claims of treatment efficacy removed from the Internet (for examples see [British Stammering Association, n.d.](#)).

#### *2.1.1. Caveats*

When surfing the net there is always the problem of how to distinguish between truth and fiction, and evidence and opinion, regardless of topic. For example, the content of blogs can be extremely biased, and false and damaging allegations can be made (for discussion of this see [Levmore & Nussbaum, 2010](#)).

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