

## Online Dictionary User Interfaces and Web Design

Today's podcast centres around online dictionaries and basic web design issues. Many of these that can be found online had beginnings many decades before the internet became widely used. For example, Merriam Webster issued their first dictionary in 1847 – obviously in printed form.

There are of course many other dictionaries e.g. MacMillan and the Cambridge Dictionaries are also well-known.

Then as the internet became widely used, most of these well-known dictionaries placed themselves online, e.g. the Macmillan Dictionary went online in 2009 and the Cambridge Dictionary Online was available in 1999.

Dictionary.com went online in 1995.

Nowadays, many of these dictionaries also have a thesaurus and some in addition have English to other languages – and other things. So, the online world has converged several sources into one stop web sites – which is really useful. Before the internet, many of us bought separate volumes for an English Dictionary, a Thesaurus and other volumes if we were learning other languages. And before we knew it, we had a whole shelf that was straining under the weight of several volumes.

However, dictionary web sites are still web sites at the basic level and therefore should be well designed, usable and accessible web sources. This is important not just from a professional and design point of view, but it's important from a user point of view. For example, at the time of recording this podcast, Dictionary.com reports that in 2014 it had more than 70 million users per month accessing their dictionary. And in Norway, the online dictionary approved by the Language Council of Norway saw in 2020 around 37 million searches.

What does 70 million look like? Well, one way of thinking about it is that it is the size of some countries and even more than many countries. To put it into perspective, Norway's population is a bit over 5 million.

Clearly then how such web sites are designed is very important with such a large use of online dictionaries. At Oslo Metropolitan university in Norway, we did some automated testing of some of the well-known dictionary web sites and found that they all had usability and accessibility faults.

With expert examining of the faults in more detail, we felt that the majority of usability and accessibility issues were resolvable by deploying better designs and more careful development practices when implementing the web sites.

Concerning the design issues, we set about testing this by creating a redesigned version of the user interface of the Norwegian Online Dictionary. This was in 2019, so we used the 2019 version. The actual content of the dictionary was not altered. This gave us the possibility to directly compare what was being used and what could be used.

So we set up an experiment and were able to recruit a number of participants to use the versions of the user interface. We managed to get both native and non-native Norwegian speakers.

We were interested in finding out if the 2 user interfaces had any differences in the amount of errors users would make in using the user interfaces. We also wanted to know what users thought about each user interface design. What their experience was in using the different user interfaces.

The participants were given some typical tasks to carry out of the kind involving finding the meanings and different grammatical forms of a series of Norwegian words.

So what were the results? Well, interestingly our redesign across the board incurred significantly fewer errors. And the user experience was considered significantly better with the redesigned user interface. The original user interface, we can essentially say failed in usability.

Now web sites change all the time. For example, the Norwegian Online Dictionary has changed its user interface so that in 2022 it looks quite different to the 2019 version. However, the results suggest some things that move well beyond the Norwegian Online Dictionary and even other dictionaries in general.

The first issue is that how we design user interface elements on a web site and how we organize any content on a web site is crucial and sometimes changes for improvement in usability need not be so radical. It clearly depends on the web site, but in our dictionary example the redesigns we made were not so extreme. But, the changes in user experience were extreme, in a positive sense.

The second issue is that designers in general should try to follow more closely already well-established guidelines and principles for user interface design. For example, there are many relevant ISO standards that would help. The Web Content Accessibility Guidelines (WCAG) are also helpful. There are many other guidelines too that would be helpful. And finally, it would further help if designers would keep themselves more updated with the research that is continually being done in the user interface context.

So whether it is an online dictionary or some other web site that one uses, it is suggested that all web sites should be well designed, usable and accessible first. This may sound so ridiculously obvious, but I mention it because in our research we are finding too many basic failings in designs out there.

If you are a web designer who is not following well established principles, guidelines and research, I urge you to begin now. If instead you are a consumer using web sites for various reasons, I urge you to be involved too. For example, many web sites these days send out surveys to their customers specifically asking customers about their experiences with their web sites. If you are one of those who does not complete such surveys, I urge you to begin completing these now.

Hopefully, in time web sites can be all well designed, usable and accessible. You have been listening to Pietro Murano's podcast.