Universal Design for Learning - a meta-analytic review of research evidence

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Extended abstract*

Universal Design for Learning (UDL) is a framework mainly focusing on the concept of *variability in learning*. It provides guidelines for content creation, class teaching and assessment based on brain science evidence; it is sensible to the differences characterizing every student (e.g. those with learning disabilities, as well as the very proficient ones). The related literature suggests that there is a lack of evidence about the effectiveness of such a framework. Although the neuroscientific evidence at the base of UDL is not discussed here, an exploratory meta-analysis is presented, quantifying the existing amount of research evidence about the tested effectiveness of UDL.

A collection of abstracts was obtained from the ERIC database by searching for the descriptor "universal design for learning" (quotation marks included). The search yielded a total of 141 records, among which N=80 peer reviewed journal articles were considered. Abstracts were classified by 5 parameters: a) the presence of explicit results in the text; b) the positiveness of results; c) the category who benefited of the results (students, teachers or both), d) the country where the study took place, e) the sample size.

The publication time spanned between 2000 and 2012, and 25% of the abstracts explicitly mentioned research results, while the others were mainly position papers or literature reviews. Three quarters of research papers appeared in the 2007-2012 period, a fact that can be interpreted as an increased attention towards research evidence for the UDL framework. Positive results of UDL interventions were highlighted in 38,75% of the abstracts, while in the others there was no mention of experimental results or other observations. Note that some abstracts reported a positive result without mentioning how it was measured.

The majority of the studies addressed students (45,16%), fewer teachers (25,81%), while some others involved both categories (22,58%). Only 2 abstracts introduced research on best practices. Research was mainly carried out in the US, with the only exceptions of 4 abstracts referring to other countries (Australia, Brunei, Singapore). On the contrary, the sample size was highly varied: it went from three students in one case, to hundreds of them in more recent studies. There was a prevalence of qualitative studies.

This review allowed to clarify some points: a) research evidence about the effectiveness of the UDL framework is confirmed to be limited, but the amount of available information is growing; b) position and communication papers are still the majority, which is probably due to the need of guidelines by school personnel; c) research is mainly going on in the US.

The performed search was designed to be rigorous and easily repeatable, but also has some limitations: it was limited to one database only, and full text articles were not always available. Moreover, considering only abstracts can introduce bias because of the lack of a standardized method to write them.

Future steps in this research will include an extension of the abstracts collection using more databases and an in-depth analysis of UDL research experiences carried on in Europe.