

# Universal Design and Language Teaching: Disrupting the Pedagogies of Realistic Mixed-Ability Teaching

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**Abstract:** Although computer-assisted language learning and computer-assisted learning can be seen to be the precursors of if not simply the very backbone of E-learning, it is still rare to connect E-learning with special education needs (SEN) pedagogy. The full potential of cross-breeding computer-assisted language learning and Universal Design for Learning has been experimentally investigated by this author, but apparently not by others. Findings in the above-mentioned studies point to augmented learning opportunities for the whole classroom by aiming to offer comprehensive scaffolds design reaching out to SEN learners. The comprehensive SEN-compatible design, though, can be used, as the author has documented (Kasch 2019, 2020) by non-struggling average and above-average learners as well so as to virtually disrupt the classical language pedagogical ideas of having to face the limits of "realistic mixed-ability teaching". Rather, as a few studies also point to - e.g. , E-Learning pedagogy can be enlightened by Universal Design for Learning (UDL) and thus offer learners what they need, being offered scaffolds and support they did not think belonged in language learning materials. This presentation will look at struggling and non-struggling learners' experiences of using assistive universally designed E-learning materials in interview responses (n = 32) in English language learning and come up with a proposal for how UDL can inspire language learning in E-learning designs and pedagogy in general so as to disrupt pedagogical thinking underlying contemporary E-learning designs in language teaching.

**Keywords:** universal design for learning, computer-assisted language learning (CALL), special education needs (SEN), computer-assisted learning (CAL), innovation

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## 1. Background

Computer-assisted language learning and computer-assisted learning can be considered precursors of – if not very backbone of E-learning. In both paradigms and in E-learning as well, it is still rare to connect E-learning with special needs education (SEN) pedagogy. In this paper, the author will present a case for disrupting “realistic mixed ability teaching” (Harmer, 2007, p. 131), which is an inscribed idea in foreign language and other non-SEN pedagogies – that there are indeed limits to differentiated teaching in the classroom and certain levels of proficiency gaps that the pedagogies cannot accommodate. A wholly other train of thought is presented in Universal Design and Universal Design for Learning (Story et al., 1998; Rose & Strangman, 2007). In both Universal Design (in architecture and product design) as well Universal Design for Learning, the pivotal ideas is that diversity and variability in users and learners are always the point of departure. According to this train of thought, therefore, teaching and learning designs should strive to accommodate cognitive and social diversity and variability at the outset, rather than come up with a retro-fit solution. This idea of embracing diversity and variability also appears to be reflected in the foundational ideas of open education in E-learning, namely with the 4 A’s (“availability”, “accessibility”, “acceptability” and “adaptability”) - cf. e.g. Benlamri et al. (2016, p. 3). On this note, the paper will closely examine whether the widely held belief of “realistic mixed-ability teaching” in foreign language pedagogy is justifiable vis-à-vis empirical research in E-learning and the underlying beliefs in foreign language pedagogies used in English Language Teaching.

## 2. Contents and method

In the case study, the author will first examine state-of-the art of SEN-pedagogy including Universal Design (for Learning) in E-learning research in a literature review and then confront the findings of this state-of-the-art of research with the current pedagogies in language teaching. Then two cases will be presented. In the first case, the findings of literature studies will be used to confront the current SEN-pedagogical practice of co-teaching and how co-teaching could work out in a classroom aiming to disrupt the pedagogical idea of “realistic mixed ability teaching”. Here, data from the author’s empirical studies will be presented for further illustration and inspection. Then, a rival case of “co-teaching”, which has of late enjoyed a renaissance in Nordic countries, is analyzed and discussed. Eventually, a conclusion is presented summing up the main findings and road-mapping for future research.

### 3. Literature review and state of the art

SEN pedagogy in E-learning is apparently understudied, as is indeed suggested if one searches the ProQuest database using the truncated search string in ProQuest, ab(E-learning) AND ab(“special needs education”). The author conducted this search which returned only 3 non-duplicate hits, of which 2 were especially relevant. One study was the study by (Fukushima and Masataka, 2010) providing a discussion of existing research and pointing to potentials of integrating SEN in E-Learning. In an empirical study, Levensen (2008), showed how remedial general-purpose compensatory/assistive literacy aids can be used by dyslectic and non-dyslectic students in the classroom alike to teach to boost writing proficiency. Eventually, Benlamri et al. 's (2016) editorial from a journal issue on E-learning and Management Information does define open access as having to do with the 4 A's (Benlamri et al., 2016, p. 3) of being “available” to all users, of being “accessible” to and “acceptable” to all users as well as “adaptable” to unique needs of and cultures of constituents including inter alia minorities, indigenous people and people with disabilities.

Broadening the literature search, the author conducted an additional literature search looking into Universal Design and E-learning using the truncated search string, ab(“Universal Design”) AND ab(“E-learning”), was used, which returned 4 genuine hits. Of these, an article by De Angelis (2020) argues that a deeper understanding of the inclusive potentials is needed with a view furthering accessibility, usability and sustainability for Italian higher-education sectors to be up to international standards of inclusive practice in E-learning. In a study Universal Design and E-learning designs and analytics, Buenaño-Fernández & Luján-Mora (2019) proposed that educational tools for data-mining and process mining be used to identify the dangerous points of learning routes for visually impaired learners in MOOCs. A further conceptual study of Universal Design for Learning in Italian Schools and E-learning is provided in (Aiello et al., 2018) of how the nuances of planning teaching can be enlightened using UDL. Eventually, Al-Azawei et al. (2017) using a mixed method of survey and action in a study of E-learning acceptance found that educational technologies can be used to tackle curricula limitations guided by UDL principles and act as a bridge to enhance E-learning acceptance.

As can be seen from the sources of the above literature review, a rich potential in having E-learning reach out to learners outside the perimeters of more or less idealized average learners and users is hinted at in E-learning literature. However, deeming from the above searches appears, Universal Design and SEN-pedagogy appears to be largely understudied. Further, although the literature seems to be keenly aware that there are potentials of E-learning and Universal Design and adaptable accessibility, very few empirical studies appear to address Universal Design in E-learning (Kasch, 2019, 2020). In computer-assisted language learning, studies by Kasch (2021; 2018, 2019) are thus found which test the viability of Universal Design and computer-assisted language learning. When searching ProQuest using the search string, “ab(“Universal Design for Learning”) AND ab(“Computer-assisted Language Learning”) AND ab(“empiric\*”). Similar searches in Scopus yield the same result. Kasch (2021; 2018, 2019) appears to have conducted the only studies of the viability of special education needs oriented E-learning in foreign language classrooms. A near-exception, though, is an empirical study of Universal Design being used in literacy and second-language teaching in a US classroom featuring English-as-a-second-language (ESL) learners and struggling readers (Proctor, Dalton and Grisham, 2007). All studies (Proctor, Dalton and Grisham, 2007; Kasch, 2019; H. Kasch, 2021) though point to the pedagogical viability of integrating Universal Design for Learning into language classrooms.

### 4. The case for a disruption of “realistic mixed-ability teaching” in the light of empirical research and e-learning research literature

In classical or standard textbooks on (the practice of) English language teaching like (Harmer, 2007, p. 131) it is customary to speak of “realistic mixed-ability teaching” and not to see language teaching from a Universal Design or SEN-pedagogical perspective. Likewise, standard textbooks on “how languages are learned” i.e. on foreign language acquisition theory and research (Lightbown and Spada, 2013) and pedagogy/teaching practice do not address special education needs. Neither when explaining language learning do Lightbown & Spada (2013, pp. 103–120) address SEN or UDL issues; nor do they do so when presenting pedagogical approaches to language teaching (Lightbown and Spada, 2013, pp. 153–198). Further examples of textbook classics failing to address SEN pedagogy or UDL are the classic by Hedge (2001) on teaching and learning in the language classroom failing to incorporate UDL or SEN pedagogy. Yet another classic that does not provide any illustration of SEN learners and SEN-oriented pedagogies is the otherwise very scaffolding-aware textbook on language teaching by Gibbons (2015).

Apparently, the pedagogical philosophy inscribed in language learning and pedagogy is that certain learners are not relevant regarding / worthy of having their language learning studied and that language teaching is most appropriately studied as an abstract or general (non-SEN) phenomenon. The apparent upshot of this is that whatever SEN-oriented differentiation measure the teacher might want to apply in their teaching will be pedagogically extraneous both in terms of SEN and of foreign language pedagogy applied. In other words, SEN measures will be extraneous add-ons to the general pedagogies and theories used to inform and provide the reasoning and arguments behind their (language) teaching (proper), that is the planning, implementation, assessment and development of teaching. In a nutshell, whatever SEN-pedagogical measures that teacher integrates in their teaching, they will be informed by SEN pedagogy only and in not aligned with the theories otherwise informing language teaching (Quuvang *et al.*, 2016).

Ron Mace, the founding father of Universal Design in architecture and design, found that for people with reduced mobility like himself, cityscapes and rural landscapes alike were hostile or at least not very accommodating to him. Today, in a very similar way, SEN-learners still find themselves in language classrooms, whose pedagogical reasoning and theory do not accommodate them or consider them worthy of study. Conversely, SEN-pedagogical practice is, on the other hand, typically uninterested in embracing the pedagogies of individual disciplines, such as e.g. foreign language pedagogy – see e.g. (Quuvang *et al.*, 2016). This pedagogical illogical and hardly very practical dichotomy is even found at teacher education departments. As a result, foreign language educators and researchers specialize in their subjects and pedagogies and SEN educators and researchers specialize in SEN. In a similar fashion, SEN pedagogy or UDL only exceptionally makes it into computer-assisted language learning cf. above or into (post-secondary) STEM teaching (Schreffler, Vasquez III, Chini and James, 2019).

At the teacher education department, then, the SEN educator may appear in one corner and enlighten the preservice teacher on the merits and necessity of SEN pedagogy. However, they will do so out of alignment with the language teaching educator in much the same way that Computer-assisted Language Learning and Universal Design (for Learning) had not been crosspollinated prior to Kasch (2021; 2018, 2019). However, as pointed out in Kasch (2018) a universal design can be used to expand teacherly contingencies and also call for a complete disruption of instructional materials design. Kasch (2021; 2018, 2019) tried out Ebook prototypes in serial experimental studies with subsequent semi-structured interviews (n = 32) in Danish year-seven English as a Foreign-Language classrooms. In these studies, SEN-pedagogical E-learning components were studied. The Ebook prototypes thus comprised assistive learning-design components, amongst them:

1. 1. A comprehensive non-lemmatical (glosses given in the form in which they appeared in the text and not in their base form as is customary) contiguous (glosses glossed together in context) multimodal (text, sound and image) and bilingual (English and Danish) glossing functionality
2. 2. A bilingual (Danish and English) retelling functionalit re-telling the contents of every paragraph or page in the Ebook prototype
3. 3. A text-to-speech (TTS) functionality with synchronous highlighting.

These components with a clear SEN-pedagogical and UDL leaning were found not only to enhance access to participation and meaning comprehension for the strugglers in the classroom, but also stimulate engagement and learning in the whole classroom (Kasch, 2021; 2018, 2019). As for 1, glossing formats were found to reach out to and be used by all struggling learners and found to scaffold lexical comprehension as well as scaffold self-regulated learning by the multimodal and SEN-oriented glossing format, but also average and above-average learners found the glossing formats a way to increase engagement in terms of eased access to glossing, giving them a way apparently of understanding the text for the first time and have a meaningful learning process. As for 2, the bilingual retelling functionality offered an opportunity often together with the TTS functionality to find a way into the meaning content of the text for the very strugglers, whereas other non-struggling learners used it for testing a hypothesis of the meaning content of the text and still others would use for sheer enjoyment listening to natural English rather than the mechanic-sound TTS. As for 3, the TTS functionality, struggling learners would use it for practicing reading e.g. together with the Retelling functionality in English and in Danish, whereas others would use it for listening to the pronunciation of a given phrase or even for practicing the pronunciation of a given phrase. Many more uses were found, though, by Kasch (2019, 2021), and the reader is referred to Kasch (2019, 2021) for further details. Suffice it here to say that both self-regulated learning and increased learning engagement arose from the affordances as expounded by the informants in their interviews. Overall, interview responses suggested that moving barriers

to learning and embracing variability in the classroom led to improved inclusive practice in the language classrooms.

Findings in Kasch (2021; 2018, 2019) and (Levinsen, 2008) thus all support the idea that SEN-pedagogical assistive technology can increase participation and engagement in the whole classroom. This presents us with a two-fold argument for Universal Design in the classroom and for allowing all learners access to all (even remedial) resources. Not only does it make sense to integrate language pedagogy and SEN-pedagogy to include struggling learners in the language classroom and make them have access to learning and engagement, as suggested by (Kasch, 2021), non-struggling learners are also afforded new accesses to learning and engagement. In other words, time may seem to be ripe for a disruption of instructional materials, naturally integrating SEN-pedagogies and foreign language pedagogies, doing away with the axiomacy of “realistic mixed ability teaching”. Likewise, post-secondary STEM teaching corroborate the viability of UDL at higher levels of education (Schreffler, Vasquez III, Chini and Westley, 2019).

More succinctly perhaps, from Universal Design point of view, it is hard to defend foreign language pedagogies if their learning designs are only for the able or non-SEN students. With non-SEN pedagogies insisting that SEN pedagogy is not part of language or general pedagogy proper (whatever that would be), we are left with the dilemma of trusting a non-SEN-pedagogical understanding of scaffolding, resources and barriers to learning. As a consequence, then the very understanding of “realistic” or “realism” is ungrounded in SEN research which, contrary to non-SEN pedagogies, specializes in finding learner resources and barriers to learning (Norwich & Lewis, 2007; Quvang et al., 2016; Rose & Strangman, 2007). However, of late, an approach has been launched to alleviate SEN-pedagogical exigencies in normal mixed-ability classrooms, the idea being a pooling of SEN expertise and teacher expertise so that the classroom can be offered resources from both SEN and non-SEN pedagogies and teaching, namely co-teaching. In many ways, the method seems to live up to the 4 A’s and also principles of universal design in trying to embrace learner diversity and variability. The author therefore now turns to a discussion of this rival case, which is now enjoying a heyday in Denmark and other Nordic countries as SEN-pedagogy-compatible approach to cater to mixed-ability classrooms (see e.g. *Co-Teaching | Emu Danmarks Læringsportal*).

## **5. The rival case of co-teaching in mixed-ability classrooms: Is disruption really needed?**

Perhaps disruption is not needed, as the current trend of co-teaching could perhaps supply the resources needed in the mixed-ability classroom. Co-teaching (Cook and Friend, 1995) can be understood as and is also offered as a solution to inclusive practice, embracing SEN pedagogy with the co-teacher as an additional resource with a meaningful pedagogical role to play in classrooms with a number of SEN learners. As Cook & Friend (1995) suggest, co-teaching is especially efficient when there are no or few problems of collaboration between teacher and co-teacher and if the task of the co-teacher has no or little bearing on the pedagogy offered by the teacher. Even so, on the face of it, co-teaching appears to function like a retro-fit solution to a dysfunctional pedagogical design, just the way, adding a ramp to a school building may help students with reduced mobility to enter the classroom. This notwithstanding, SEN-pedagogical co-teaching still aspires to embrace variability and diversity in the mixed-ability classroom. The problem, though, is that it does not consider and embrace diversity at the outset of the overall teaching design or follow from an overall pedagogically integrated methodology or plan (see e.g. Story et al., 1998). Co-teaching rather leaves it to the SEN specialist tackle SEN problems in their stride or according to a planned division of labour in the classroom such that the teacher does and assumes responsibility for the (non-SEN) teaching proper (Dederling and Lindacher, 2018).

Therefore, albeit that it may always be nice to have more resources in the classroom, co-teaching is still subject to an understanding of pedagogy such that SEN pedagogy and teaching (pedagogy) are segregated with the teacher teaching and the (SEN specialist/teacher) assistant assisting - cf. e.g. (Cook & Friend, 1995; Dederling & Lindacher, 2018). In this way, co-teaching is considered not just something that should be dealt with in segregation but also as SEN pedagogy being subservient to teaching. In contrast, a Universal Design perspective presents a proposal to sublimate this dichotomy of pedagogies by combining them to construct new meaningful pedagogies by integrating UDL principles into the pedagogy in general and the pedagogies of individual disciplines (Gordon, Meyer and Rose, 2010). Such integrated pedagogies, which are however yet to be constructed, are not bounded by imagined perimeters of “realistic mixed-ability teaching” or the prevalent pedagogy in language teaching and acquisition research that does not address or embrace SEN pedagogy.

As pointed out in meta-studies on co-teaching, substantial learning effects are yet to be documented (Murawski and Swanson, 2001; Dederling and Lindacher, 2018). However, many studies in co-teaching do report successful and meaningful cooperation - see e.g. Murawski & Swanson (2001). Rather than throwing the baby out with bathwater, a Universal Design-inspired approach could be proposed for and used in co-teaching disrupt or inform existing co-teaching ideas. This would call for a pooling of resources to have SEN pedagogy inform the pedagogy of disciplines and vice versa on all levels from research to teacher education to practitioner, i.e. SEN and non-SEN teacher level, and be embodied by instructional materials and pedagogies. On the basis of such a disruption, the illogical dichotomy of SEN pedagogy and other pedagogies could be resolved or even synthesized/sublated into a meaningful and inclusive understanding of pedagogy. In this understanding, teaching and education are indeed for the whole classroom and for all. Teaching and education could then be genuinely inclusive rather than just for the able non-SEN learners inside the perimeters of "realistic mixed ability teaching". In other words, the pedagogies of teaching "proper" could really become pedagogical rather than leave learners off by the wayside. A caveat is in order here, though, namely that the integration suggested is by no means proffered as a vehicle to lower costs; nor does it proffer to abandon the pools of knowledge gleaned by SEN and non-SEN pedagogies – rather, it wants to bolster all pedagogies by having them enter into a meaningful dialogue and exchange of knowledge to tackle the admittedly wicked problem of inclusion.

## **6. In conclusion**

In this case study, I have used a literature review and my own research on E-learning and Universal Design for Learning and SEN-pedagogy to tell a story of the strange - and to me – illogical dichotomy of SEN pedagogy and other pedagogies – be they general or be they the pedagogy of specific disciplines. In E-learning research, though, the tenets of a disrupting pedagogy doing away with or challenging this dichotomy can already be seen to emerge. A case in point are the "4 A's" used to guide open education E-learning designs (Benlamri, Klett and Wang, 2016), but also by findings in UDL and SEN studies in E-learning point to solutions integrating SEN-pedagogy with pedagogies from individual subjects. Thus, the literature review of the case study as well as the author's own empirical research pointed to theoretical as well as practical viability of integrating UDL and SEN-pedagogy in language learning and other area such as literacy teaching. This research appeared to be in marked contrast to classical foreign language pedagogies, in which inclusive UDL-inspired pedagogies were seen not to be given lip service, nor were SEN learners and SEN pedagogy. Conversely, as suggested by the rival case study presented, current SEN-pedagogical solutions like co-teaching also segregate SEN pedagogy from teaching, with the teacher teaching and the SEN co-teacher co-teaching. In order to solve the apparent wicked problem of inclusion, a sustainable solution, it would stand to reason, is in need of a bird's eye view of the multi-faceted pedagogical landscape. This could be constructed by disrupting "realistic mixed-ability teaching" and substitute it for collaboration and integration of SEN and Non-SEN pedagogies of the individual disciplines.

Such a solution could be imagined to embrace the three blocks of UDL of learner diversity and variability in ("affective", "cognitive" and "strategic" networks) and take the 4 "A's" of open education, namely "Availability", "Acceptability", "Accessibility" and "Adaptability", very seriously (Benlamri, Klett and Wang, 2016, p. 3). In doing so, educational, psychological and pedagogical sciences and areas of expertise could team to up and strive to provide solutions with a sustainable universal design rather than the retrofit and segregated ones researchers and educators as well as teachers may be only too familiar with. On this note, future research into Universal Design-inspired disruptive pedagogies could be envisaged for many levels - all the way from huge research programmes to practitioner collaboration research and so that SEN-pedagogy would become part of all pedagogies, and co-teaching and teaching could be synthesized into meaningful and inclusive teaching.

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