8 Dyslexia in modern language learning: A case study on collaborative task-design for inclusive teaching and learning in an online context

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Abstract

In recent years, universities have been involved in developing new strategies to promote widening participation in higher education, and consequently they have been focusing on increasing the variety of support offered to students with disabilities for a more inclusive and widely accessible learning environment. However, there is a common feeling amongst practitioners and learners that learning disabilities are harder to recognise than physical disabilities, and therefore less prioritised. Such is still the case with dyslexia, a learning difference (term chosen here by the authors to describe a difficulty in the cognitive processing of information), which unlike most physical disabilities, is not always identified and therefore addressed with appropriate dyslexia-friendly learning materials and approaches. Furthermore, the staggering growth in the use of Information and Communication Technology (ICT) in education raises questions about how the new technologies can support an inclusive learning approach. This case study provides an outline of the Dyslexia in Modern Language Learning (DMLL) collaborative project, aimed at bridging the gap between language learning and learning differences (specifically dyslexia) in an online distance learning framework.

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1.   Context/rationale

The Open University (OU) provides high-quality distance learning courses on a wide range of subjects to adult (16+) learners. OU courses usually run online and involve, depending on the course, a combination of both synchronous (teleconference, face to face tutorials) and asynchronous (forums, wikis, blogs) activities.

Given the particular nature of these online courses in open learning settings, learners must be able to work autonomously, in a self-paced way and the tutor acts predominantly as a facilitator.

As a result, online courses can be particularly challenging for students with learning differences. According to the British Dyslexia Institute[1], between 4% and 10% of the UK population is affected by dyslexia, a learning difference which affects the cognitive processes in written and spoken language. Furthermore, Higher Education Statistics Agency (HESA) figures for 2005/6 revealed that 2.6% of the total higher education population is dyslexic[2]. In light of this, the OU has put in place a support network to provide standard guidance to students with disabilities and learning difficulties and offers a range of resources such as learning materials in accessible/alternative formats, guidance on how to develop effective study skills and the opportunity for extra one to one tutorials. General guidance for tutors is also available.

The OU's language portfolio includes seven languages, taught at different levels and in a blended context which uses a combination of online and face to face settings. The learning materials are produced in-house and comprise a variety of formats such as print and online interactive materials. Both the production and the presentation of the materials are equally crucial: tutorials are designed and delivered with an inclusive teaching approach, to encompass a variety of learning styles, preferences and differences.

1. http://www.dyslexia-inst.org.uk

2. http://www2.le.ac.uk/offices/ssds/accessability/staff/supporting-students-with-dyslexia/dyslexia_guidelines/dyslexia_he

The Department of Languages is keen to address issues related to disability and learning differences and tutors have been working with disability advisers for years. However, it was felt that tutors needed more specific support and guidance to allow them to provide sensitive and effective assistance to students with learning differences in their subject-areas.

It was in light of this, that in 2013 the OU Department of Languages set up the DMLL project to bridge the gap between language learning and learning difficulties in an online distance learning framework. Twelve language tutors from different regions joined the seven-month project and worked collaboratively to build up a knowledge bank, through the sharing of good practice, reflection and peer feedback.

2.   Aims and objectives

The project's main purposes were to create a repository of knowledge on the topic of dyslexia and language teaching/learning, a set of guidelines for language tutors, academic and advisory staff and produce dyslexia-friendly Open Educational Resources (OERs). In this case study, we (as project participants) would like to illustrate how the group worked collaboratively on planning and implementing new task-design for inclusive teaching and learning in an online context. We have identified and worked through the followings aims and objectives:

Aims:

- to investigate the main pedagogical implications of dyslexics learning a language in an online context;

- to address the current shortage of open access dyslexia-friendly teaching and learning language resources;

- to improve the development of task-design for inclusive teaching and learning in an online context.

Objectives:

- to share findings about the existing relevant literature;

- to provide examples of the use of new technologies to develop inclusive transferable task-design;

- to present examples of an inclusive task-design framework produced collaboratively in light of Open Educational Practices (OEPs).

3.   What we did

The project consisted of three phases:

- phase 1: collaborative creation of a bank of knowledge and a repository for the open educational resources, length: seven weeks;

- phase 2: collaborative creation of the "Guide to Good Practice" toolkit, length: three months;

- phase 3: dissemination: ongoing.

A workspace for the DMLL workgroup was set up, which included a platform (*OU Live*) for synchronous online meeting used for the plenary sessions, a forum tool for asynchronous discussion, and a repository for uploading the work produced.

3.1.   Phase 1

The first phase of the project consisted of four online meetings, the first of which was a briefing. In the briefing, participants were divided into three teams of four and were asked to familiarise themselves with existing OU resources for dyslexic students and to evaluate their usefulness, in order to build up some

background knowledge on the topic of dyslexia and language learning and identify key issues in the literature studied. Teams were encouraged to continue the discussion in the forum. In subsequent meetings, participants were asked to prepare a set of guidelines for lesson planning and delivery based on the key issues identified in their research and ultimately to produce open online teaching resources to upload to the OU's repository: Languages Open Resources Online (LORO[1]).

The collaborative work took place via online meetings held roughly every three weeks on *OU Live*, the OU's teleconference platform and as such an ideal tool for discussion of key issues and immediate sharing of ideas and feedback. Between meetings, communication and collaboration between teams (or team members) took place via email and predominantly via the asynchronous forum specifically set up for the project. Although each team exchanged messages on the forum specific to their work and clearly labelled with the team name, the whole group had access to all posts and this meant that there was maximal sharing of findings and ideas between all participants, including the project leaders. All materials, including academic literature, bibliography, guidelines and newly created resources were stored in the project repository, accessible to all participants.

The structure of each meeting (with the exception of the initial briefing) was similar, including standing items such as presentation of and discussion about key findings on designated areas of work, showcasing of resources, peer feedback, evaluation and next steps.

All tasks were designed by individuals and shared first with the team for initial feedback and revision; they were subsequently showcased to the whole group for further feedback. Tutors tested their resources with both dyslexic and non-dyslexic students, thus creating opportunities for improvement and reflection. Following final feedback, the tasks were polished, converted into whiteboard (wbd) format in order to be viewed on *OU Live* and uploaded to LORO, tagged as 'Dyslexia friendly resources'.

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1. http://loro.open.ac.uk

3.2.   Phase 2

The second phase of the project consisted of two meetings; the main task was contributing to the creation of the 'Guide to Good Practice' toolkit, aimed at language tutors, learning support teams and academic teams. Individual or team's contributions to the guide were posted on a designated wiki arranged by relevant topics. In this phase the emphasis was on reflection and evaluation. Activities also included tandem teaching and peer observations. Online tutorials were recorded with students' permission. Tandem teaching and peer observations were also followed up by 'reflective activity evaluation logs', and stored in the project repository and accessible to all participants.

3.3.   Phase 3

Finally, participants engaged in a programme of dissemination activities, organised both internally, as OU staff development events, and outside the OU, as workshops for teachers in schools in collaboration with the Routes into Languages project[1].

4.   Discussion

4.1.   Key findings and their implications
in task-design in an online classroom

From the project we gained a better understanding of how the dyslexic brain processes information. The right hemisphere, responsible for creativity, is more developed in dyslexic people than the left hemisphere, responsible for acquiring language. The main implications in language teaching and learning are that dyslexic students prefer learning in multidimensional images, have a holistic rather than a sequential approach, and are more creative than analytical thinkers. In language learning, dyslexic students may encounter difficulties in the

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1. www.routesintolanguages.ac.uk

following areas: understanding sounds correctly, retaining vocabulary, spelling and reading, sequencing thoughts and structuring sentences. They often muddle polysyllabic words (Crombie, 2000).

In light of this, the DMLL group felt that the production of learning materials, as an essential aspect of successful teaching in an online environment, should address these differences and that activities should be designed to reflect a variety of learning styles. It also pinpointed the following tenets of inclusive task-design should:

- be based on a Multisensory Structured Language (MSL) approach: a combination of learning tools (such as colour coding, mind-mapping, etc.) and stimuli through two or more sensory channels (hearing, saying, feeling, seeing);

- include clear learning objectives, break activities into scaffolded steps, provide opportunities for active and discovery learning, with some elements of explicit teaching and over-learning;

- make the most of the potential for inclusivity offered by the online tools.

OU Live offers a variety of tools (drag and drop, chat box, multiple speaker, polling options, emoticons and pointers) to facilitate the deployment of kinaesthetic, multisensory and interactive elements in the online classroom, and it therefore appeals to learners with different learning styles. The wbd resources, used during the online tutorials, allow a high degree of interaction and personalisation as users can easily manipulate the style of content (e.g. colour, font, size) according to their individual needs and preferences. Furthermore, the online sessions can be recorded and reach those students who cannot attend live, need repetition for consolidation of learning, or work at a different pace. Besides, students can save the learning materials created for/during the tutorials and reuse them online outside the classroom for further autonomous practice encouraging peer-to-peer collaboration.

4.2.   Mapping our findings to task-design

The following examples illustrate in practice how we used specific technology in inclusive task-design for an online setting; how we addressed student needs and prepared the right learning environment when designing or adapting educational resources.

4.2.1.   Example of an auditory discrimination activity
using visual and oral stimuli

Auditory discrimination problems result in the inability of the brain to organise and make sense of the sounds of a language, which leads to a misinterpretation of sounds. This can be impeding in language learning. However, many people think through images, and teaching can address this by adopting a MSL approach.

The extracts of the example below are part of a whole activity designed for a Level 1 German beginners' course. The activity carried out in an online tutorial can be broken into smaller units according to student needs and was designed to introduce four sounds in German: [ei], [ie], [eu] and [au]. Each sound is colour-coded in order to be recognisable when embedded within other sounds (words) (Figure 1).

Figure 1.   The use of colour-coding aid in sound discrimination

The example below focuses on the sound [ie].

The aim of the activity is for students to learn to distinguish the sound [ie] by linking the sound to images representing that sound in English and the corresponding sound in German. In Figure 2, step 1, the tutor introduces the sound [ie] orally and visually anchoring it to the visual 'Bee' (which is

pronounced as the –ie in German). Subsequently, the phoneme, which was hidden behind the box in the previous step, is shown graphically (grapheme) as the tutor removes the rectangular box as displayed in step 2.

Figure 2.   Anchoring a sound to a visual aid
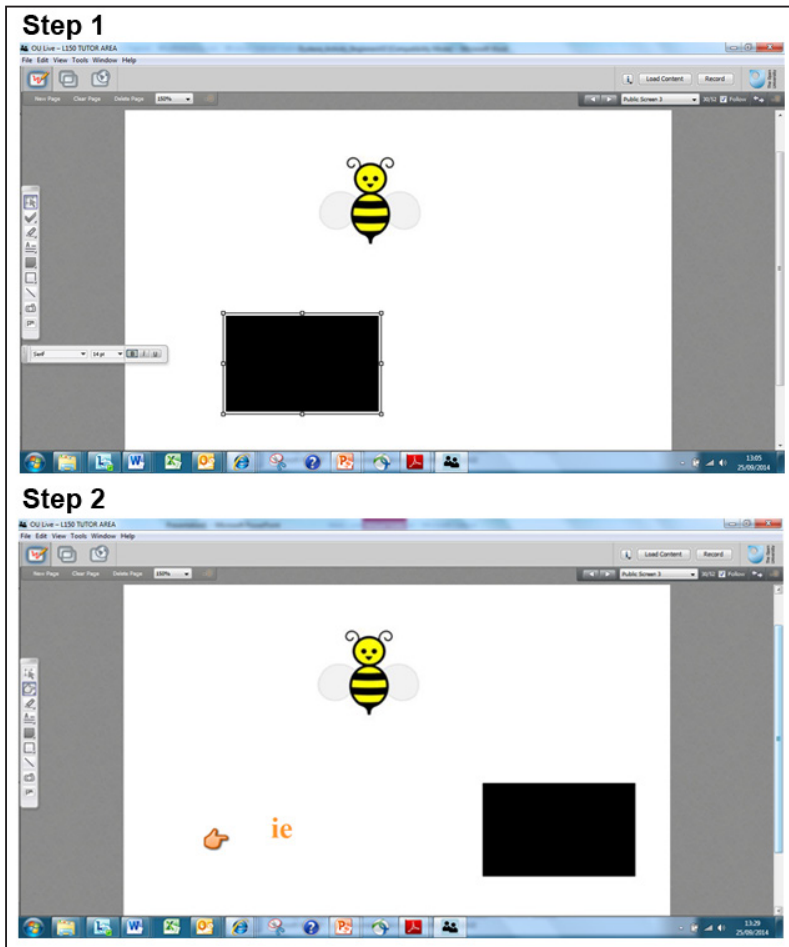
In step 3 of Figure 3, the tutor reinforces the sound recognition by using a mnemonic aid (Chief Bee). This is particularly useful to dyslexic students who

experience poor visual and auditory mnemonic retention and benefit from special strategies to reinforce memory mechanisms. Subsequently in step 4, students are exposed to a range of words containing the same phoneme and are invited to practise both in written form and by saying the listed words.

Figure 3. A mnemonic aid to reinforce sound recognition

The activity develops in further stages in which all the remaining sounds are introduced and eventually students are asked to take part in an interactive activity in which they have to practise sound discrimination by using a polling tool available. The phonemes for the designated sounds are colour coded. As they hear the new word, students are asked to press the corresponding letter link showed on the left side of the screen and here replicated on the whiteboard (Figure 4). Variations to this task can be offered if the tutor perceives that the additional link of pressing letters for specific sounds may be too complicated for certain students and they could advise students to use the pointers to show which sound is being produced.

Figure 4. A polling tool to practise sound recognition
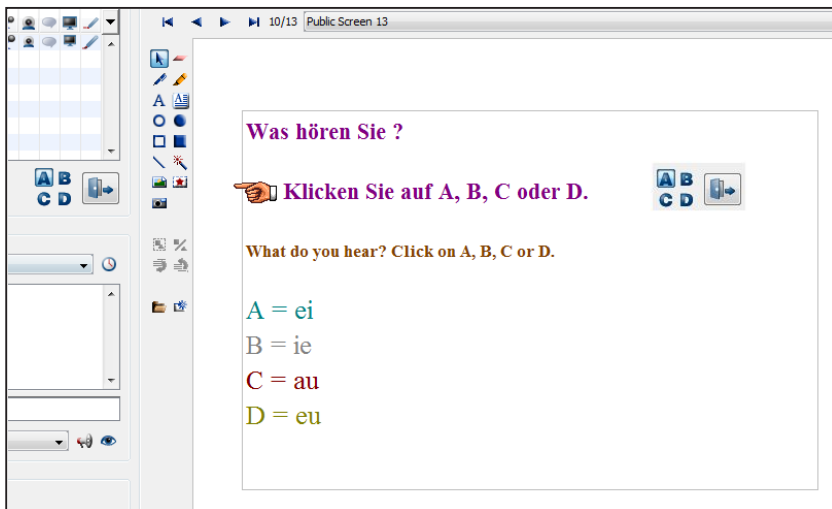
4.2.2. Example of a kinaesthetic multisensory activity

In this second example, the whiteboard slide in Figure 5 is part of a set of slides used in an Italian beginners' course. The slide can be used on its own to prompt students to talk about free time activities or as part of a set of activities on talking about the time and expressing frequency. This is an interactive,

collaborative activity. Students are asked to match the phrases scattered around the whiteboard with the correct image. In turn, students practise their oral skills by producing a sentence using the clues provided and the tutor will check the correct pronunciation.

Figure 5.   Interactive collaborative tools (drag and drop and pointers)
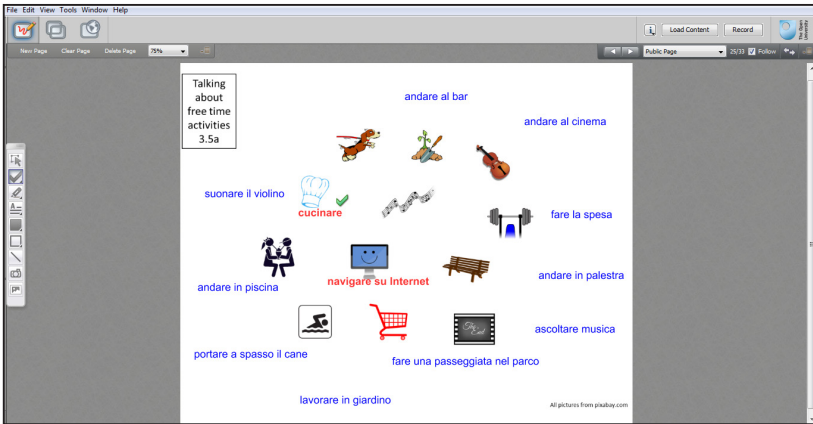
This online activity, due to its versatility in making an image-text association is effective with all types of learners, particularly in a beginners' class. Therefore, it was felt potentially appropriate for dyslexic learners too as they perform well in practical activities and tend to think through images. They also perform better if involved in kinaesthetic multisensory tasks which encourage a holistic rather than sequential approach. Nevertheless, some amendments from the original version were required in order to make it fully dyslexia-friendly. To address the dyslexic learners, we reduced the amount of text and images on each slide, used a sans-serif font and an off-white background. In the online setting, students collaboratively carry out the activity of labelling the images by dragging and dropping the text on the right place and by progressively changing the colour of each correct label from blue to red (or any suitable colour). Pointers can also be used by the tutor to confirm the correctness of the activity (see below the green tick next to the image of a chef hat labelled as '*cucinare*') or by the students to point the activities they want to describe.

Both resources offer an opportunity to see how to use kinaesthetic elements and a variety of stimuli (oral, written, visual) to facilitate different learning styles and how to break down activities into achievable steps to enhance learners' autonomy[1].

5.   Conclusion

The DMLL project set out to provide an opportunity for participants to work collaboratively and identify the main barriers that students with dyslexia (and other learning difficulties) face in language learning. It also aimed to encourage the tutors involved to reflect on their own teaching practice and rethink how inclusivity can be pragmatically addressed in online language teaching. Consequently, it raised questions about how to plan and implement effective task-design for an inclusive online teaching and learning. Finally and most importantly, the project outcomes and the resources (such as teaching guidelines, lesson plans and materials) were shared with other practitioners in a spirit of open educational practice.

The examples presented here provide some useful insights into how to exploit the potential of the online environment to create interactive and engaging resources targeted primarily at dyslexic learners but suitable for all.

Reference

Crombie, M. A. (2000). Dyslexia and the Learning of a foreign language in school: Where are we going? *Dyslexia, 6*(2), 112-123.

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1. Overall, dyslexic students found the MSL and the visual mnemonic aids used in the classroom extremely useful, particularly to disentangle the sound-spelling combination. Non-dyslexic students found the materials engaging and welcomed the stronger connection between images and physical sensory activities.

Further readings

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