D-ESL

Adaptation of learning content for students with SLDs

Educational Needs and Adaptations for students with SLDs

Multisensory learning

Introduction

The world is made up of many objects and things, with which the only interaction we can have is through our multiple senses. We can only acquire knowledge by integrating the sensory information available to us. This observation is the root of the **multisensory** (or **multimodal**) approach to teaching, which aims at going beyond the traditional use of the visual and auditory channels in education. This approach, although beneficial for all learners, is even more essential for students with **specific learning disorders** (henceforth **SLDs**), who may have difficulties with one or more types of sensory information.

The need behind this adaptation

Students with SLDs may really struggle to focus on the learning task and retain the information that is taught to them. Thus, special attention must be given in order to engage these types of learners as much as possible.

One method that is proven to be very effective is learning with multiple senses (sight, hearing, touch, smell, taste, …). This type of learning is referred to as **multisensory learning** or **multimodal learning**.

Though beneficial for all learners, multisensory learning is especially relevant for students with SLDs. Let's take the practical example of dyslexia, an SLD characterized by the brain having trouble with the lexical (visual) channel and/or the phonological (audio) channel. Because of the difficulties with one or more senses, it is obvious that multisensory learning may be essential for these students.

What is this adaptation all about?

What is multisensory learning?

Whereas **traditional methods** of teaching may rely almost exclusively on **sight** (reading) and **hearing** (listening to the teacher), the **multisensory approach** aims at **diversifying the means of learning** by including other senses, or by providing other ways to exploit sight and hearing. Designing a multisensory lesson is, basically, integrating **visual**, **auditory**, as well as **tactile** (touch) and **kinaesthetic** (movement) elements into your teaching. **Smell** and **taste** may, of course, also be integrated, even though they may be more difficult to include. For instance, a lesson on food can be a good opportunity to introduce smell and taste by offering students different flavours.

Multisensory learning brings many benefits:

- A diversity of teaching methods will stimulate different parts of the brain; **more brain connections mean better memorisation**.
- It results in **more intense interaction with the learning material**.

- It helps the learner discover what type of learning methods and what techniques work best for them.
- It allows for **more individualized lesson planning**.
- Multisensory learning addresses students' engagement and achievement; by stimulating several senses, it fosters cognitive engagement.
- As mentioned above, a multisensory approach can be essential for students with SLDs.

Multisensory learning for English as a Foreign Language

Teachers may find very creative ways to embrace the multisensory approach and integrate its principles into their English teaching. Luckily, language learning is a good subject to integrate visual, auditive, tactile and kinaesthetic learning elements.

For instance, when teaching vocabulary you could:

- have a **brainstorming session** and draw mind maps that logically link words together (visual channel),
- use **music, rhymes and other sounds** (auditory channel)
- make your students **manipulate objects**, feel the texture, the weight, the warmth, play with jigsaw puzzles, dominos, Rubik's cubes, etc. (touch)
- include **body movements**, for instance by asking students to use gestures to describe words, or making them move in the classroom to find hidden elements – the use of pedagogical escape rooms may be particularly appropriate – draw words in the air, etc. (kinaesthetic techniques)
- Make your student smell elements, for instance, when learning the vocabulary of fruits, vegetables and spice (smell)
- Add anything that you think will improve and diversify your learning activities

Some learners will be less receptive to some senses. Make sure to alternate between senses, as it will offer different possibilities to your students.

Use games in a multisensory approach to teaching languages

Games as another input for learning

The core idea of multisensory learning is providing multiple means of learning to your students. Using games in the classroom may be a great way to achieve that goal.

The senses in games

With some creativity, **all the senses can be covered in games**. Video games, for instance, traditionally stimulate at least the **visual and auditory channels** and require the player to use game controls, which make video games **kinaesthetic** by nature.

Additionally, senses can be stimulated further in video games. For instance, by using **rumble** in the game controllers, **movement captors or tactile input**. There are also some attempts to exploit senses that are not traditionally stimulated in video games. For instance, the use of **olfactory feedback** with educational games has been explored by researchers and showed improvement in the performance of the learners (Covaci et al., 2018).

Conclusion

Multisensory learning, by providing multiple means of learning, is a rewarding and powerful method for all types of learners. It is even more impactful with students with SLDs, who may struggle with one or several senses and need alternative approaches to acquire knowledge. Fortunately, language learning is very compatible with this approach. Including the use of games in the learning experience is one easy and effective way to bring multisensory learning into the classroom. It will stimulate your students and engage them more.

Resources and references

- Baines, L. (2008). A Teacher's Guide to Multisensory Learning: Improving Literacy by Engaging the Senses. ASCD.

- Covaci, A., Ghinea, G., Lin, C.-H., Huang, S.-H., & Shih, J.-L. (2018). Multisensory games-based learning—Lessons learnt from olfactory enhancement of a digital board game. Multimedia Tools and Applications, 77(16), 21245–21263. https://doi.org/10.1007/s11042-017-5459-2

- García-Redondo, P., García, T., Areces, D., Núñez, J. C., & Rodríguez, C. (2019). Serious Games and Their Effect Improving Attention in Students with Learning Disabilities. International Journal of Environmental Research and Public Health, 16(14), 2480. https://doi.org/10.3390/ijerph16142480

- International Dyslexia Association. (2008, November 21). Accommodating Students with Dyslexia in All Classroom Settings. Reading Rockets. https://www.readingrockets.org/article/accommodating-students-dyslexia-all-classroom-settings

- Rao, A. R. (2018). An oscillatory neural network model that demonstrates the benefits of multisensory learning. Cognitive Neurodynamics, 12(5), 481–499. https://doi.org/10.1007/s11571-018-9489-x

- Risqi, M. (2015). LexiPal: Design, Implementation and Evaluation of Gamification on Learning Application for Dyslexia. International Journal of Computer Applications, 131(7), 37–43. https://doi.org/10.5120/ijca2015907416

- Shams, L., & Seitz, A. R. (2008). Benefits of multisensory learning. Trends in Cognitive Sciences, 12(11), 411–417. https://doi.org/10.1016/j.tics.2008.07.006

- Multisensory Learning and Teaching for Dyslexic Students. (n.d.). Dyslexia Reading Well. Retrieved 7 June 2022, from https://www.dyslexia-reading-well.com/multisensory-learning.html