Accessibility

Learning resources that can be accessed through sight, hearing or touch maximise learner participation, particularly for learners with sensory impairments. Learners without sensory impairments also benefit, as they can mix and match the channels through which they access the material, making learning richer and more varied.

Auditory elements

- Discussions
- Peer explaining
- Reading aloud
- Internal dialogue
- Audio recording and playback
- Using the phone
- Mnemonics
- Music

Multimedia

Well-designed multimedia resources can lead to more effective learning than traditional verbal-only messages. But care should be taken not to overload a learner's visual channel, and extraneous material should be removed. Learners who produce their own work as multimedia products can develop a good understanding of how pictures, text and sound can work together to present an idea. This deepens their understanding of the topic and exercises their thinking skills.

Kinaesthetic elements

- Moving around, changing seating positions
- Touching and handling things
- Sequences of movements
- Practical tasks
- Acting out processes and concepts
- Role play

Visual elements

- Colour coding
- Visual organisers
- Learners drawing to explain ideas
- Image recording and playback
- Mental images and visualisation
- Displays of posters, key words and learners' work

A kit of useful items

Teachers who embrace multi-sensory learning often have a kit of useful items such as:

- realia from the area of learning
- sticky notes and pens in bright colours
- solid numbers, letters and symbols
- audio recorder
- digital camera and/or video camera.

Quick start guide

Multi-sensory learning

Expert learners

Expert learners are aware of which senses they need to engage in order to master something new. They appreciate, for instance, that learning to ski requires kinaesthetic learning, while learning a language requires a strong focus on auditory learning. Even if they prefer to use one of their senses more than others, they know that they have to work at engaging the senses that suit a particular situation. They refuse to be stereotyped as a kinaesthetic, auditory or visual learner. You can help learners gain these insights by encouraging them to reflect on how they use their senses during various kinds of learning.

Multi-sensory learning

The idea that learning experienced through all the senses is helpful in reinforcing memory has a long history in pedagogy. From the earliest teaching guides (Montessori 1912), educators have embraced a range of multi-sensory techniques in order to make learning richer and more motivating for learners. The term is used to refer to any learning activity that combines two or more sensory strategies to take in or express information. Multi-sensory approaches have been particularly valuable in literacy and language learning, for example, in relationships between sound and symbol, word recognition, and the use of tactile methods such as tracing on rough or soft surfaces.

The Department for Education and Skills (DfES) (2004) defines multi-sensory as: 'using visual, auditory and kinaesthetic modalities, sometimes at the same time'. Kinaesthetic refers to perceiving through touch and an awareness of body movements. Teachers* working with dyslexic learners have found multi-sensory approaches particularly valuable, as they help learners to make sense of information in a range of ways. Activities that harness all the senses are also an excellent way to include learners with disabilities.

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* We use 'teaching and learning' and 'teacher' as generic terms to include:

- teaching, training and learning
- teachers, tutors, trainers, lecturers and instructors in the further education (FE) system.

But we stray into a minefield if we try to classify learners into fixed visual, auditory or kinaesthetic stereotypes and teach them accordingly. As Coffield et al (2004) point out in a critical review of learning styles, there is insufficient evidence that such an approach is effective. Indeed, work with learners with learning disabilities focuses on developing all the senses as fully as possible, using techniques such as multi-sensory environments. Case studies in this area can be found on the website of the British Educational Communications and Technology Agency (BECTA).

Effective teachers select and use the most appropriate approach for the learning task and the learners' situation. In particular, multimedia resources can promote inclusive learning if accessibility features are built in. This can enable learners with hearing or visual impairments to use the same resources as others.

The work of Sweller (1999) and Mayer (2001) is of particular interest to those developing multimedia resources. Sweller's findings are relevant to those designing learning resources about technically challenging material. He advocates using worked examples, avoiding redundant information (to reduce cognitive load) and using auditory as well as visual information.

Mayer concludes that there is growing evidence that well designed multimedia resources lead to deeper learning than traditional verbal-only messages. He offers the following guidance on what constitutes good design:

- Words and pictures work better than words alone.
- Words and pictures need to be integrated, so that they work together.
- An informal style works better than a formal style.
- Extraneous material should be removed.
- Care should be taken not to overload learners' visual channel, for example, with rapidly changing graphics.

References

Coffield, F., Moseley, D., Hall, E. and Ecclestone K. (2004) *Learning styles and pedagogy in post-16 learning. A systematic and critical review,* London: Learning and Skills Research Centre.

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Mayer, R. E. (2001) *Multimedia Learning,* Cambridge University Press, New York.

Montessori, M. (1912) *The Montessori Method. ,* New York.

Sweller, J. (1999) *Instructional Design in Technical Areas,* Australian Council for Educational Research, Victoria.

You will find links that exemplify multi-sensory learning in the Teaching and Learning Programme resources.