How to overcome communication barriers in nature experience

Annex 4: Usage of 3D/Braille materials for education purposes

For many blind people, Braille is the only reliable source of information. In the project, we thus explored the options to include information in Braille into the tools and other material.

This document shows examples of the universal leaflets focused on the visually impaired and blind people developed by project partners and others which worked very well and were accepted very positively by the target group.

However, according to the opinions of our blind experts, the high cost of production and the relative small percentage of people able to read Braille, such type of material does not represent the first option to reach blind and visually impaired people. 3D graphics of this size and technically available quality often provides only very basic information. Moreover, because Braille uses a standard font size, usually requires more surface than most of the printed texts, which makes it difficult to combine on the same page both approaches and restricts the level of information to some very basic.

We thus recommend to use Braille where short information is given, and focus on audible media for more comprehensive educational material.
Example 1. Braille leaflet with images with raised contours (in Polish)

Original page from the booklet

Layer with the elevated elements. It illustrates what information a blind person gets from the leaflet.

Visualisation of the final product. The dots and contours do not distract the vision too much. The real effect would depend on the applied technology but could be even much less visible.

Example 2. Leaflet with images with elevated print (in Hungarian)

A leaflet on the wildlife of Lake Balaton (for the Lake Balaton Uplands National Park). At first glance, the leaflet looks like a traditional information material for sighted people.

Elevated elements synchronized with the text and illustration. It shows differences in space demand of the two types of print. Contours of the front birds on the picture would conflict with the Braille text.
Leaflet with some of the information printed, in 3D, including captions with pictures of the animals and their names.
Example 3 Leaflets with images, text and Braille

The first leaflet “Seen mit allen Sinnen” am Bodensee presents Lake Konstanz through a short text, a real picture and a map. The map presents elevated borders on the contour of the lake.

The short text is translated into Braille directly on the leaflet itself through the use of “glue dots” printed on it.
The second leaflet, “Seen mit allen Sinnen” am Schweriner See uses the same method, but presents a different lake.

![Schweriner See Map](image)

### Datos
- Länge: 21 km
- Breite: 3.5 km
- Max. Tiefe: 52.4 m
- Umfang: 70 km

### Schweriner See

#### Legende:
- Naturschutzgebiet
- Städte
- Angebote für Blinde/Sehbehinderte

#### Typische Tiere & Pflanzen
- Schilf
- Schleierente

#### Map:
- Bad Kleinen
- Lübstorf
- Schwerin
- Insel Lieps
- Insel Ziegelwerder
- Dobin am See
- Leezen
- Kaninchenwerder
- Störkanal