



Self-managed design of multisensory/ multimodal material for subjects of the Psychology Career

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Abstract

This paper presents the experience of designing and using multisensory/multimodal material in the university classroom in four compulsory subjects of a psychology degree. This initiative sought to respond to student diversity in the classroom and, from an inclusive perspective, sought the participation in learning of all students with and without visual impairment. Materials such as thermoform, microencapsulated paper, 3D printing, EVA foam, liquid silicone, fabric, cardboard, etc., were used for the design. A qualitative methodology was chosen to know the students perception of the new material, incorporating semi-structured interviews, questionnaires, and focus groups. Qualitative content analysis was used to systematize the information produced. The results show that the students valued incorporating this type of material very positively, reporting contributions not only in learning and motivation but also in their vision of the importance of inclusion in the training and professional practice of psychology. The lack of economic resources stands out as a limitation, as well as the lack of knowledge on the part of authorities on the subject, which can translate into little support for the development of inclusive actions in the classroom.

KEYWORDS: MULTISENSORY, MULTIMODAL, HIGHER EDUCATION

Introduction

In a public University in Chile, to respond to student diversity in the classroom, university actors works team has been formed (academics, civil servants, English teachers, students, graduates, and students) that contributes to pedagogical innovation in teaching practices in the Psychology career of that University, from a Universal Design for Learning (UDL) approach. In addition, since 2021, a collaborative alliance has been established with a Tactile Mapping Center belonging to another university in Chile, allowing progress in developing the adapted material.

The question that guided this research was from the perspective of inclusive education: What contributions does incorporating multisensory/multimodal material in the classroom have for psychology training? The objective of this research was to understand the contribution of the incorporation of multimodal/multisensory material at the school for the training in Psychology of all students, including people with visual impairment or low vision, so that they access the knowledge taught in three compulsory subjects of the Psychology career of a Public University.

Literature Review

The University in which this work is developed, in 2018 through the approval in the University Senate, assumes the commitment to allow access to Higher Education in all its careers to students with some disability, whether physical, hearing or visual. The Admission for Students with Disabilities (SIEDS) (UCH, 2023) began to be implemented last year. However, the Psychology career has advanced in the incorporation of visually impaired students since 2017, with a special entrance to the career. Seven students have participated, and they are pioneers in the Faculty of Social Sciences for opening this quota.

The University's Educational Model states that students who enter any of its careers should enhance their abilities through full and creative inclusion in the university culture that welcomes them. It is essential that they achieve the expected learning and that they can participate in the educational community of the Faculty (DeTorres et al, 2021).

Therefore, it is relevant to provide guidelines and standards that allow all actors to carry out educational practices based on the postulates of inclusive education, to be able to count on innovations and curricular adaptations to which students opt because of their disability, promoting the use of Universal Design for Learning (UDL), as an educational strategy for the achievement of effective inclusion (UCH, 2019).

Method

Some materials were designed and adapted for different subjects, developed through university actors works team has been formed collaboration (academics, officials, students, graduates), and worked in institutional networks between the Psychology Career and the Center for Tactile Cartography, as already mentioned.

The work was self-managed, reinforcing the autonomy of each subject and sharing with the whole team. Although there was no direct support from the career, in the development of the proposal, there was the active participation of a professional from the Faculty in charge of educational inclusion.

In the subject of Neurophysiology and Cognitive Neuroscience, brains were adapted with 3D printing for tactile exploration, "sensory boxes" were made to support the learning of sensory systems, and "brain caps" to learn the location and identification of brain structures, as well as models of large neurons to explain the process of synaptic transmission.

In the Introduction to Psychological Assessment course, some items of the Wechsler Intelligence Scale for Children (WISC-V) and adults (WAIS-IV), audible description of the slides of the Thematic Apperception Test for children (CAT-A), Object Relations Test (TRO), as well as tactile adaptation of drawings from the Family and Person in the Rain Drawing Test were adapted tactilely.

In the case of the subject of Educational Psychology, four slides of varying complexity from the Raven Test were tactilely adapted.

Various materials were used: thermoform, microencapsulated paper, 3D printing, EVA foam, liquid-silicone, fabric, etc.

These materials were presented in each of the subjects during the year 2023. A qualitative methodology was used, preferably through a qualitative content analysis, applying semi-structured interviews, questionnaires, and focus groups, which focused on the perceptions of the students and the academics in charge of these subjects.

Results

In adapting the Introduction to Psychological Evaluation and Educational Psychology materials, some difficulties were found in designing the WISC and WAIS, CAT-A, TRO, and RAVEN items. For example, in the case of WAIS and WISC, a higher elevation in the post-forming of some boxes that did not correspond to each other; in the audification of the description of the CAT-A and TRO plates, sometimes somewhat confusing, making the mental representation of the plate difficult; and in the RAVEN it was difficult to distinguish details and edges in those plates that presented the most significant amount of information.

The results obtained indicate that in all subjects, the incorporation of the new materials was perceived as a beneficial strategy for all students; their need and usefulness to facilitate active learning is highlighted, promoting practical aspects and a participatory space thanks to their playful properties, which could be of particular importance for students with visual disabilities. Effects on student awareness about inclusion in psychology are also highlighted. For people with visual impairment or low vision, incorporating this material was essential to access the discipline's scientific knowledge.

Discussion and Conclusions

Implementing low-cost multisensory pedagogical material is beneficial in overcoming barriers to inclusion and improving accessibility in Higher Education. The contribution of this type of material is highlighted not only for the learning of students with disabilities but also for all students as it works from the perspective of educational inclusion.

Limitations and Projections

The resources necessary to carry out the innovations associated with inclusive teaching are restricted in higher education.

Under the regulatory frameworks of the universities, progress must be made in implementing these guidelines. Need to sensitize authorities to support the development of inclusion in higher education.

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