

Research and Analysis of Design Education on Equality, Diversity and Inclusion in Slovakia

Zuzana Čerešňová ^{a *} | Natália Bošková Filová ^a | Klára Macháčová ^a | Lenka Suláková ^a

^a Slovak University of Technology, Faculty of Architecture and Design, Bratislava, Slovakia

* Corresponding author: zuzana.ceresnova@stuba.sk

ABSTRACT

This article presents research findings from the EDIDesK project: Open Access Contents on Design for Equality, Diversity, and Inclusion (EDI) for Higher Education Programs. The initial phase of the research involved researching the best practices that incorporate EDI contents and methodologies within design-related study programs in Slovakia. In the second phase, the best practices were selected and proceeded for more detailed investigation in interviews with selected groups of academics who coordinate and teach modules on Design for EDI. The Faculty of Architecture and Design at the Slovak University of Technology (FAD STU) in Bratislava has the longest and most extensive coverage of the topic of EDI in Slovakia among the higher education institutions. Most of the courses teach students how to create inclusive environments, services, and products for diverse people. Exercises and on-site surveys help students understand the different needs and requirements of people. The courses aim to teach students more about human-centered design and social sustainability.

Keywords: Body Conscious Design, Inclusion, Humanity, Universal Design.

INTRODUCTION

It is imperative to acknowledge the diversity of individuals to ensure equal opportunities for all people to use the built environment, products, services and information, and to actively engage in society, including education. According to Ostroff (2011) 'Design education must be more inclusive and more diverse, reflecting the range of people who design affects'. Inclusive environments can be achieved by implementing human-centered methods, such as Design for All, Inclusive Design, and Universal Design (Meyerson, Lee, 2011; Vavik, 2011; Froyen, 2012).

The European Union adopted several policy documents concerning the implementation of Universal Design (UD), such as Resolution ResAP(2001)1 on the introduction of the principles of universal design into the curricula of all occupations working on the built environment. The importance of UD is also emphasized in the UN Convention on the Rights of Persons with Disabilities (UNCRPD), ratified worldwide and in the Slovak Republic in 2010.

This research was conducted within the EDIDesK project: Open Access Contents on Design for Equality, Diversity, and Inclusion (EDI) for Higher Education Programs. The primary objective of Work Package 2 (WP2) from January to July 2024 was the investigation and examination of study programs and contents on Design for EDI in the participating countries. The Faculty of Architecture and Design STU is one of the partners involved in this project. The objective of this research was to map and analyze courses and modules offering the most comprehensive teaching content, methodologies and tools on Design for EDI within undergraduate (UG) and

postgraduate (PG) design-related study programs in Slovakia. This objective was achieved by conducting a desk-based research study and conducting interviews with members of academic staff, the results of which are outlined in this paper.

1. METHODOLOGY

The initial phase involved researching the best practices that incorporate Equality, Diversity, and Inclusion (EDI) contents and teaching methodologies within study programs in design-related disciplines, such as architecture, urban planning, product design, service design, etc. This entailed an analysis of the available contents of study programs and courses or modules on the websites of higher education institutions in Slovakia.

Each course or module was gathered and described using various types of information, then an evaluation was performed on each module, scaling the number of EDI-related contents and methods. This process facilitated the selection of modules for further investigation.

In the second phase, based on collected and analyzed data, best practices were selected and proceeded for more detailed investigation in interviews with academics who coordinate and teach modules on Design for EDI. The module coordinators were also engaged to gather syllabuses and extract teaching materials such as themed content on Design for EDI, reference lists, and details on teaching approaches, experience, and evaluation tools.

Before the interview, participants were provided with a document containing EDI definitions prepared by project staff to provide a common ground of information on which to discuss the topics of the interview. Participants were also asked to prepare a list of recommended literature on EDI, extracted from their modules, and used to teach different subjects. These steps ensured clarity and preparedness, facilitating more productive discussions during the interviews.

After the interview, a collection of examples of student work was initiated. Teachers were requested to send selected projects showcasing the most significant impact of EDI on education (i.e., best projects made by students in a recent academic year).

2. OVERVIEW OF DATA GATHERED IN SLOVAKIA

In Slovakia, there are four higher education institutions that are offering design-related study programmes, including design, interior and furniture design, architecture and urban design (Table 1). One of them is Academy of Fine Arts and Design (VŠVU) in Bratislava and three of them are technical universities: 1) Slovak University of Technology (STU) in Bratislava, 2) Technical University of Košice (TUKE), and 3) Technical University in Zvolen (TUZVO). These universities are situated in different parts of Slovakia – STU in the capital city Bratislava in western part of Slovakia, TUKE in the eastern part, and TUZVO in central part of Slovakia. All of them are offering study programmes in undergraduate bachelor level (UG) and postgraduate master level (PG).

Čerešňová, Z.; Filová, N. B.;
Macháčová, K.; Suláková, L. (2024).
Research and Analysis of Design
Education on Equality, Diversity and
Inclusion in Slovakia. *Strategic
Design Research Journal*. Volume
17, number 01, January - April 2024.
58-70. DOI:
10.4013/sdrj.2024.171.05

Table 1: Design-related study programs in higher education in Slovakia

Academic institution	Study program	Degree	Duration (years)
Academy of Fine Arts and Design in Bratislava	Architecture	UG - Bachelor's Degree	4
Academy of Fine Arts and Design in Bratislava	Architecture	PG - Master's Degree	2
Academy of Fine Arts and Design in Bratislava	Design	UG - Bachelor's Degree	4
Academy of Fine Arts and Design in Bratislava	Design	PG - Master's Degree	2
Faculty of Architecture and Design, STU in Bratislava	Architecture and Urban Design	UG - Bachelor's Degree	4
Faculty of Architecture and Design, STU in Bratislava	Architecture	PG - Master's Degree	2
Faculty of Architecture and Design STU in Bratislava	Design	UG - Bachelor's Degree	4
Faculty of Architecture and Design, STU in Bratislava	Design	PG - Master's Degree	2
Faculty of Arts, Technical University of Košice	Architecture and Urbanism	UG - Bachelor's Degree	4
Faculty of Arts, Technical University of Košice	Architecture and Urbanism	PG - Master's Degree	2
Faculty of Arts, Technical University of Košice	Design	UG - Bachelor's Degree	4
Faculty of Arts, Technical University of Košice	Design	PG - Master's Degree	2
Faculty of Wood Sciences and Technology, Technical University in Zvolen	Design of Furniture and Interior	UG - Bachelor's Degree	4
Faculty of Wood Sciences and Technology, Technical University in Zvolen	Design of Furniture and Interior	PG - Master's Degree	2

Based on the desk research and evaluation of design-related study programs and courses on websites of higher education institutions in Slovakia, the courses or modules with the highest potential on Design for EDI were selected for interviews with the university teachers – coordinators of selected modules (Table 2).

Table 2: List of selected courses/modules on Design for EDI in Slovakia for the interviews

Academic institution	Study program	Module/course	Coordinator of the module/course
Faculty of Architecture and Design, STU in Bratislava	Architecture and Urban Design	Universal Design	Zuzana Čerešňová
Faculty of Architecture and Design, STU in Bratislava	Architecture	Humanization of Microenvironment	Veronika Kotradyová
Faculty of Architecture and Design, STU in Bratislava	Design	Body Conscious Design	Veronika Kotradyová
Faculty of Architecture and Design, STU in Bratislava	Design	Interdisciplinary Contexts of Design II - Ergonomics and Universal Design	Mária Šimková
Faculty of Arts, Technical University of Košice	Architecture and Urbanism	Ergonomic design	Peter Wohlfahrt
Faculty of Wood Sciences and Technology, Technical University in Zvolen	Design of Furniture and Interior	Humanity in design	René Baďura

Čerešňová, Z.; Filová, N. B.; Macháčková, K.; Suláková, L. (2024). Research and Analysis of Design Education on Equality, Diversity and Inclusion in Slovakia. *Strategic Design Research Journal*. Volume 17, number 01, January - April 2024. 58-70. DOI: 10.4013/sdrj.2024.171.05

Among the higher education institutions contacted, some of them did not respond. The most detailed information received was primarily from colleagues with whom previous collaborative experience was already established. The Faculty of Architecture and Design STU has the longest and most extensive coverage of the EDI topic among the higher education institutions in Slovakia. The Centre of Design for All (CEDA) at this institution also makes a major contribution to human-centred design research and teaching, as well as collaborating

with practice in creating inclusive environments. It is thus evident that the subsequent chapters primarily encompass subjects from FAD STU and TUZVO that have been identified as being of significant EDI potential.

3. UNIVERSAL DESIGN COURSE

3.1. Overview of the course

Compulsory course on Universal Design (UD) has been implemented in the bachelor's degree program Architecture and Urban Design at the Faculty of Architecture and Design STU since 1995. The concept of integrating UD principles into architectural education was initially proposed by Mária Samová. The UD course is currently coordinated by Zuzana Čerešňová, based on many years of research experience at CEDA, complemented by a research stay at the Institute for Human Centered Design in Boston.

The UD course interprets the EDI approach as a human-centered approach to creating an inclusive environment including social sustainability, respect for human rights, and public interest. Students in this course see and examine examples of how all people are equal and that people with disabilities can participate fully in society. The course begins with empathic exercises, to simulate the movement and wayfinding of people with various disabilities or limitations. All students can try to move in a wheelchair and navigate themselves with dark glasses in the built environment. Based on experience from empathic exercises, students elaborate different tasks focused on the implementation of Seven principles of universal design (UD) formulated by Ronald L. Mace and his colleagues (Story et al. 1998). The choice of student assignments is often related to the current research projects of the CEDA. Students solve various tasks, such as: (1) audits of accessibility of public buildings based on cooperation with Slovak cities and regions, (2) analyses and proposals of adaptable housing, (3) proposal of inclusive exhibition spaces, or (4) research on wayfinding in public space based on multisensory perception of the environment.

Teaching of UD course is in accordance with the Universal Design for Learning (UDL) method developed by Rose et al. (2006). This method takes into accounts various learning and communication styles, abilities and needs of students by using multisensory ways of presentation, expression, and active engagement of students. The students are actively involved in on-surveys by assessing accessibility of the built environment, including also cognitive accessibility (wayfinding, accessible information, etc.). Great emphasis is also placed on participatory processes with users (Czafik et al., 2019). Students can use questionnaires or interviews with the users to better assess their real needs. Within some tasks, students can use new technological tools, such as virtual glasses, multidimensional model (Hain et al., 2024) and eye-tracker (Kacej, 2019), that measures subconscious eye movement in relation with the inputs. These technologies help to record human responses as people experience their surroundings, as well as to monitor effectiveness of the wayfinding system.

3.2. Critical discussion of findings

The methodology of teaching UD is gradually changing and being improved; it becomes more interesting and stimulating for students. Dujardin (2009) proposes four interactive teaching tools to engage students in UD training courses: (1) awareness training, (2) subjective experiencing of the built environment through simulation exercises, (3) learning from practice

Čerešňová, Z.; Filová, N. B.; Macháčová, K.; Suláková, L. (2024). Research and Analysis of Design Education on Equality, Diversity and Inclusion in Slovakia. *Strategic Design Research Journal*. Volume 17, number 01, January - April 2024. 58-70. DOI: 10.4013/sdrj.2024.171.05

through Post-Occupancy Evaluation (POE) case studies, and (4) research by Design studio work. The methodology of the UD course at the FAD STU is currently formulated in such a manner that students are involved in the creative and educational process, as well as in research activities (Ceresnova, Rollova, 2015).

The UD course should be taught earlier than in the fourth year of bachelor's studies in the Architecture and Urbanism study program. Before this course, students must complete five Atelier Studio projects of various buildings. It would be great if students could apply the knowledge of Universal Design to the subject Atelier Studio from the second year of study, so that Universal Design is encoded in the thinking of students from the beginning of their creative activity (Ceresnova et al., 2023).

3.3. Discussion on EDI potential

The UD course applies inclusive methods for heterogeneous group of students with diverse skills and capabilities, which consider different learning styles and forms of communication by using multiple means of presentation and elaboration of student works, as well as by active engagement of students, for example in the form of empathic exercises, on-site surveys, and discussions. Possibility to choose the type of task and the form of processing (individually or in groups), as well as the form of final elaboration and presentation (written, audio-visual, graphical...) provides students with the opportunity to actively express their interests and preferred learning style, leading to more effective teaching and learning. At the same time, it is necessary to increase the attractiveness of assignments by connecting to the real needs and requirements of various users of the environment and products (Ceresnova et al., 2017). The outputs of semester work, which are of practical significance, help students respond to problems occurring in practice.

The UD course equips students with the knowledge and skills to create inclusive environments for individuals with diverse abilities, including those with physical, sensory, intellectual and other impairments. The course syllabus aims to deepen the knowledge in the field of human-centered design of the built environment and social sustainability.

4. HUMANIZATION OF MICROENVIRONMENT AND BODY CONSCIOUS DESIGN

4.1. Overview of the course

At the Faculty of Architecture and Design STU, two analogous courses are taught with a focus on well-being and environmental comfort of people, coordinated and guaranteed by Veronika Kotradyová. These are modules Body Conscious Design aimed at designers and Humanization of Microenvironment dedicated also to students of architecture and urban planning. The courses are taught primarily in master's degree program, but possibly also in bachelor program. The design field of both these modules consists of service design, interior design and research. Body Conscious Design module features product design and visual communication in addition, whereas Humanization of Microenvironment module includes also public space and buildings. However, they are generally closely related in terms of content, which was also emphasised in the interview response by the course guarantor herself, so these modules will often be analysed together in the following text. They are supporting or supplementary subjects, for students of design, the Body Conscious Design module is compulsory, however

Čerešňová, Z.; Filová, N. B.; Macháčová, K.; Suláková, L. (2024). Research and Analysis of Design Education on Equality, Diversity and Inclusion in Slovakia. *Strategic Design Research Journal*. Volume 17, number 01, January - April 2024. 58-70. DOI: 10.4013/sdrj.2024.171.05

the Humanization of Microenvironment is an optional course mainly for students of architecture.

The key themes of the modules are primarily universal design and accessibility which help overcome barriers to achieving functional comfort. Furthermore, the modules are strongly linked to social inclusion and anthropology. To enhance social interactions among people, sociopetal and sociofugal space arrangements are explained, as well as mixing functions in spaces to attract more diverse social groups of people to share spaces together.

The themes are related to interaction between people and spaces, arising from anthropology, sociology, environmental psychology and physiology. There are 11 characteristics of a comfortable environment formulated by Kotradyová (2019): 1. sense of security, 2. view and shelter, 3. contact with the outdoors, 4. personal space, 5. intimacy vs. socialization, 6. appropriate proportions and scale, 7. fit, 8. local identity, 9. according to the human body, 10. fewer stimuli, 11. more natural materials. Every year, at least one guest lecture related to solved themes is included, for example from the Metropolitan Institute of Bratislava, or from various civic associations.

Frequent topics and assignments are related to healthcare design. Students elaborate a research study or research-by-design proposals for e.g. interior of hospital spaces; redesign of a product for healthcare; research of people's behaviour in public interior or exterior space, humanisation of midwifery (ideal layout and design of a room for childbirth with various aids, such as exercise, hang out), etc. Methods used to acquire knowledge and specialist skills include on-site surveys; intervention in a space; testing simulation and observing results, material, ergonomics. The students' results are evaluation of information from field study and application of knowledge gained in a project.

4.2. Critical discussion of findings

The course was established with innovative scientific approach containing inputs from an internship of the professor Kotradyová at the University of California in Berkley, afterwards grant participation in Central European University in Budapest. Solved tasks are strongly connected to actual research and work of the course guarantor and her colleagues. Kotradyová et al. (2016, 623) state: "Environmental simulations are a perspective tool for testing human responses to different environmental settings." Consequently, not only professor and her collaborators implement research testing, but also regular students are involved in related methods. Another topic connecting research and education in these modules are natural materials, especially wood (Kotradyová et al., 2019).

4.3. Discussion on EDI potential

The module focuses on social inclusion, emphasizing the creation of spaces conducive to social interaction, better communication, including sociopetal and sociofugal space arrangements. To deepen their understanding, students analyse human interaction with space, drawing on knowledge from interdisciplinary areas. In the modules, students gain competencies by redesigning product or interior. Many of the students, especially the most involved ones, continue their research activities with studies in the doctoral level. Therefore, scientific potential of students is deeply developed by these modules. On the other hand, when students continue to work in practice, they become capable of preparing better projects for realisation, because they gain better understanding and empathy towards people's needs.

Courses not only educate about inclusion, but also seek to bring inclusion into the classroom, e.g. a student with hearing impairment took one of the modules with translators to sign language assisting her. The student participated also in a workshop and fully cooperated with other students. The modules' guarantor plans to implement even deeper inclusion and discussion methods and less lecturing in the future, so that the courses engage students more actively. The reason for this possible innovation is that nowadays, lectures still constitute a significant part of the courses. To achieve more effective discussions, smaller groups of students are needed, so students could be divided into smaller groups.

Students' assignments are often connected with aging, hospitals, and other vulnerable groups. In this way, the modules support raising awareness of these important issues among young people, who are likely to become more receptive to them in their future careers.

5. INTERDISCIPLINARY CONTEXTS OF DESIGN II – ERGONOMICS AND UNIVERSAL DESIGN

5.1. Overview of the course

At the Institute of Design of the Faculty of Architecture and Design STU, the course "Interdisciplinary Contexts of Design II – Ergonomics and Universal Design" is led by Mária Šimková. This course is positioned within a broader curriculum that spans product design, service design, interior design, digital products, and visual communication. Its primary focus is on ergonomics and universal design, targeting students in the first cycle (bachelor's degree) and delivered as a full-time, on-campus course. The module is classified as a theoretical, supporting subject and is compulsory for students in the design program.

The objective of the course is to foster an understanding of Equality, Diversity, and Inclusion (EDI) in the context of design, with a guiding philosophy: "Design solutions that enable, not disable" (EIDD, 2004). This approach is woven throughout the syllabus, emphasizing the creation of products and environments that accommodate the full spectrum of human diversity.

The curriculum introduces students to key EDI concepts through lectures on human variability, anthropometry, somatotypes, personality psychology, ergonomics, movement and handling space, working positions, lighting, and visual conditions. Central to the course are the principles of Universal Design, Design for All, and Inclusive Design, with dedicated sessions on designing for older people and persons with visual impairments.

A distinguishing feature of the module is its use of simulation exercises, enabling students to experience the challenges faced by people with various impairments. Tools such as simulation glasses, white canes, and tremor simulators are employed to replicate visual and motor difficulties. These empathic experiences are instrumental in shifting students' perspectives and informing their design decisions.

Student assignments typically involve designing products for wide range of needs, from toys for children with visual impairment to ergonomic tools for older people. The process often involves field research, interviews, and the application of simulation insights to refine design outcomes.

Students are encouraged to critically assess their own biases and assumptions, leading to more thoughtful and user-centred design solutions. Competence verification is multifaceted. The

VARK questionnaire is used to assess students' learning styles, while the Empathic Experience Design (EED) framework guides students through simulation-based exercises. After these exercises, students are prompted to redesign their products, often reporting increased empathy and a deeper understanding of user needs-a finding supported by research (Šimková, 2018).

5.2. Critical discussion of findings

The module's EDI approach is grounded in practical and theoretical expertise. Theoretical contributions include simulation methods in design and a range of articles addressing topics such as "Design for All," ergonomics in product design, and the impact of simulation tools.

The "Interdisciplinary Contexts of Design II" module exemplifies an innovative, research-driven approach to EDI education in design. By combining theoretical instruction with hands-on simulation and real-world projects, the course cultivates both technical skills and social awareness. Students not only learn to recognize and accommodate human diversity but also develop the empathy and critical thinking required to address complex design challenges.

The integration of simulation tools is particularly effective, as it transforms abstract concepts into tangible experiences. This method has been shown to significantly enhance students' understanding of user needs and drive meaningful improvements in their design work.

Moreover, the module's emphasis on universal and inclusive design principles prepares students to contribute positively to society, whether through further academic research or professional practice. Graduates are equipped to design products and environments that are accessible, functional, and responsive to the needs of all users.

5.3. Discussion on EDI potential

The module's approach aligns with broader national and European efforts to promote EDI in higher education and professional practice. By embedding EDI principles in the curriculum and fostering partnerships with external stakeholders, the Institute of Design demonstrates a commitment to advancing social inclusion and accessibility.

The course's impact extends beyond the classroom, as students carry their knowledge and values into their future careers. Many students continue to engage with EDI-related topics in subsequent projects and research, contributing to a culture of inclusion within the design profession.

The module benefits from partnerships with invited speakers and experts who enriching the learning experience with diverse perspectives. These collaborations help bridge the gap between academic theory and professional practice, exposing students to current trends and challenges in EDI.

"Interdisciplinary Contexts of Design II – Ergonomic and Universal Design" stands as a model for integrating EDI into design education. Through a blend of theory, simulation, and practical application, the module equips students with the knowledge, skills, and empathy needed to create inclusive and enabling design solutions. Its ongoing evolution, informed by student feedback and emerging research, ensures that it remains relevant and impactful in addressing the challenges of contemporary design.

Čerešňová, Z.; Filová, N. B.; Macháčová, K.; Suláková, L. (2024). Research and Analysis of Design Education on Equality, Diversity and Inclusion in Slovakia. *Strategic Design Research Journal*. Volume 17, number 01, January - April 2024. 58-70. DOI: 10.4013/sdrj.2024.171.05

6. HUMANITY IN DESIGN

6.1. Overview of the course

The course Humanity in Design is a part of the study program Furniture and Interior Design at the Faculty of Wood Technology, University of Technology in Zvolen (TUZVO). It is coordinated by René Baďura, an academic sculptor and designer (Baďura & Farkašová, 2021). The course focuses on various areas of design, including product and interior design, design for public space, and partly on architecture and visual communication.

The course coordinator approaches the topic of equality, diversity and inclusion (EDI) based on the practical experience he gained even before he began his pedagogical activity in the 1990s. Since 2004, when the course was included in the curriculum, he has regularly been organizing student projects focused on design for people with disabilities. These projects cover the spectrum from theoretical considerations to practical designs and allow students to better understand the needs of diverse groups of people. The publication Design and Ethics is the basis for professional and pedagogical reflection on the course content (Baďura & Baďurová, 2016).

The course Humanity in Design is a compulsory elective and provides an opportunity for a deeper exploration of the topic. The aim of the course is that the results are not only formal or superficial, but that the students approach the topic on a personal and emotional level. The approach to EDI in the course is integrated into the very essence of design, which must be human-centered and respect diversity. EDI is understood as an inseparable part of design, similar to ecological aspects (Baďura & Farkašová, 2021). Within the course, cases of students with disabilities are not common, but there was an instance of a student with color blindness studying interior design, which required adjustments to the teaching process.

The course provides students with a comprehensive view of design, considering ethics, inclusion, and diversity. The course begins with a general lecture, followed by a deeper understanding of the topic and the definition of methods used throughout the semester. These methods cover the entire design process, from small models to more advanced forms, including virtual design.

6.2. Critical discussion of findings

The course combines theoretical and practical education, which includes understanding the issues, team communication, practical applications, and role-playing activities (Humanity in Design, n.d.). These activities allow students to immerse themselves in different roles, thereby developing empathy and gaining a real perspective on problems from various viewpoints. Mutual observation, analysis of real situations and problems are part of the process, where students explore different perspectives, such as how a nurse, teacher, or psychologist perceives a problem. Additionally, simulation methods focusing on limitations, such as immobilizing parts of the body using clothing or inserted elements, are also used, with students working with these limitations during the course to better understand the daily challenges faced by different groups of people.

Students work on a wide range of projects, from product design to spatial elements. Examples of student works include a cane for people with visual impairments, walking aids focusing on safety and comfort, projects supporting memory and orientation, or the design of a colour

structure in the hallways of residential homes for the older people to improve orientation for people with Alzheimer's disease. Students have also worked on designing furniture for kindergartens, as well as chair for older people that makes it easier to get up safely. The projects do not focus on changing the basic structure of the environment but rather on improving its facilities.

Literature plays a key role as the foundation of the theoretical and methodological framework. Students work with publications such as *Design (Furniture) for All* (Bad'ura, 2010), and international standards, which provide them with both practical and global contexts for inclusive design. Knowledge from literature is tested through projects in which students demonstrate the ability to apply theoretical insights to specific problems, with an emphasis on practical application and depth of understanding. The methods used in the course lead to a final project that reflects the students' ability to identify and apply EDI principles.

Effectiveness is assessed based on how well students are able to transform their initial simplified ideas into a deeper understanding of the problem. Throughout the course, their analytical skills and sensitivity to EDI topics clearly develop, confirming the value of the methods used and their impact on the ability to address social and design challenges. The outcomes of the course depend on the students' ambition and is often driven by personal motivation. Typical outcomes include design solutions focused on helping people with limitations, such as seating furniture that facilitates standing up, a cradle that grows with the user, or upholstered furniture combining aesthetics, technology, and safety. A common feature is the human-centred dimension and adaptation to the needs of people with limitations.

6.3. Discussion on EDI potential

Placing the course in the master's program has the advantage that students already have basic experience and can focus on more complex issues. The disadvantage is that the topic is introduced too late, as they could have integrated it into their solutions earlier. Although the topic is not always attractive, it is important and requires attention in the later years, when students are ready to engage with it more seriously. This course is closely linked to other subjects, building on previous skills and enabling students to continue developing their abilities in broader contexts. By focusing on the human dimension of design and inclusion, it influences other projects and research, helping to integrate new perspectives and apply them in various contexts. Feedback is gathered through evaluation forms and activities in which students experience design in real conditions, leaving a strong emotional impression that fosters empathy and sensitivity, which is reflected in the assessments.

Professional partnerships play an important role in supporting the course, contacts are maintained with institutions focused on equality and inclusion. Most of the collaboration takes place outside the academic environment, such as with the company Myotis and the National Rehabilitation Center in Kováčová, which served as a testing ground for student projects. Students also carry out projects in social care homes and kindergartens. Occasionally, the collaboration extends to regional and local government institutions. The students' competencies within EDI education focus on developing empathy and a sensitive understanding of the social dimension of design. Instead of emphasizing technical skills, the course fosters an awareness of the importance of humanizing design, even though it may not be a commercially attractive topic.

7. CONCLUSION

As determinants of the quality of education, it is important to develop empathic thinking, analytical skills and competences of students, to enable students to be proactive, to support and implement innovative outputs that can improve the quality of the built environment for diverse user groups. According to Leurs et al. (2011), it is important in design education to develop designer's attitude to be more sensitive and empathic towards the diversity of human beings. The selected courses prioritize the development of competencies essential for EDI-oriented design: understanding universal design/design for all principles, cultivating empathy, and applying inclusive methodologies. It should be emphasized that a more systematic integration of EDI principles across all design programs is needed. Particularly in core subjects such as studio work, greater attention should be paid to creating an inclusive environment for all.

Interactive methods, such as games and simulations, deepen student engagement and connect theory with practice, reinforcing the perception of design as a tool for improving life. Empathic simulation exercises and on-site surveys help students experience the perception and use of space from the position of diverse users. One of the positive effects of simulation exercises is that students' attention is shifted from visual perception to a more multisensory experience of the environment, including hearing, touching, and smelling (Ceresnova, Rollova, 2015).

Students learn to perceive the needs of vulnerable groups and their surroundings, preparing them to create design solutions that reflect the principles of equality, diversity, and inclusion. The key is to connect theory, personal experience, and practical skills gained in other courses in a broader social context. The aim of the courses is to lead students to awareness of the issue and the ability to implement EDI principles in practice. Design is a human-centered discipline, adapting to different groups of people, and therefore, EDI education should be part of the curriculum so that students view design as an inclusive discipline focused on the needs of various groups (Baďura & Farkašová, 2021).

Understanding the status quo of EDI teaching in Slovakia is very beneficial for the entire academic community, as it will enable the improvement of the curriculum to be proposed in the next phase of the EDIDesK project, so that the transfer of EDI ideas and principles into practice will be as effective as possible.

Design is viewed as a transformative process that satisfies human needs and respects their diversity, thus becoming a tool for inclusion and ethical values. Therefore, the human-centered approach should be an integral part of design education with the aim of creating an inclusive society for all people.

ACKNOWLEDGMENTS

This work is funded by the European Erasmus+ project "Open Access Contents on Design for Equality, Diversity, and Inclusion for Higher Education Programmes"; project acronym: EDIDesK; strand: KA220-HED (Cooperation Partnerships in Higher Education); grant number: 2023-1-IT02-KA220-HED-000153774; project website: <https://www.edideskproject.com/>. This work is based on the results achieved by the authors involved in the WP2 of the EDIDesK project. This WP was aimed at mapping the current landscape of EDI teaching in Design and related subjects at undergraduate and postgraduate levels in the participating countries of Italy, Poland, Slovakia, and Spain. The content of this publication does not reflect the official

Čerešňová, Z.; Filová, N. B.; Macháčová, K.; Suláková, L. (2024). Research and Analysis of Design Education on Equality, Diversity and Inclusion in Slovakia. *Strategic Design Research Journal*. Volume 17, number 01, January - April 2024. 58-70. DOI: 10.4013/sdrj.2024.171.05

opinion of the European Union. Responsibility for the information and views expressed in the publication lies entirely with the author(s).

REFERENCES

- Bad'ura, R. (2010). *Dizajn (nábytok) pre všetkých [Design (furniture) for all]*. In *Nábytok 2010: Emócie v dizajne: 8. sympóziu s medzinárodnou účasťou: zborník referátov* (R. Bad'ura, red.; s.3). Zvolen, Slovakia: Technická univerzita vo Zvolene. ISBN 978-80-228-2109-4
- Bad'ura, R., & Bad'urová, B. (2016). *Dizajn a etika [Design and ethics]*. Zvolen, Slovakia: Technická univerzita vo Zvolene. https://www.academia.edu/31271814/Dizajn_a_etika_Design_and_ethics
- Bad'ura, R., & Farkašová, E. (2021). Understandings of design in circumstances of humanity. *Acta Facultatis Xylogologiae Zvolen*, 63(1), pp. 143–150. <https://doi.org/10.17423/afx.2021.63.1.13>.
- Ceresnova, Z., & Rollova, L. (2015). Universal design: Methodology to enhance engagement of students in higher education. In J. Hawkins (Ed.), *Student Engagement: Leadership Practices, Perspectives and Impact of Technology*, (pp. 91-116). USA: Nova Science Publishers, Inc. <https://novapublishers.com/wp-content/uploads/2019/03/Universal-Design.pdf>
- Ceresnova, Z., Rollova, L., & Koncekova, D. (2017, June). Inclusive design of educational environment for diverse people. In *International Conference on Applied Human Factors and Ergonomics* (pp. 431-440). Cham: Springer International Publishing. DOI:[10.1007/978-3-319-60597-5_41](https://doi.org/10.1007/978-3-319-60597-5_41)
- Čerešňová, Z., Görner, K., Macháčová, K., & Štefancová, L. (2023). Effectiveness of universal design education in architectural design studios. *Global Journal of Engineering Education*, 25(2), 135-42. <https://www.wiete.com.au/journals/GJEE/Publish/vol25no2/12-Machacova-K.pdf>
- Czafik, M., Görner, K., Štefancová, L. (2019) Participation as an innovative method in architectural education. *Global Journal of Engineering Education*. 21(3), pp. 227-232 <https://www.wiete.com.au/journals/GJEE/Publish/vol21no3/09-Czafik-M.pdf>
- COUNCIL OF EUROPE (2001): Resolution ResAP(2001)1 on the introduction of the principles of universal design into the curricula of all occupations working on the built environment. <https://rm.coe.int/CoERMPublicCommonSearchServices/DisplayDCTMContent?documentId=09000016804c2eee>
- Dujardin, M. (2009). Designing in the dark: multi-sensorial workshop reconnecting designers with visually impaired end-users. In: J-A. Bichard, J. Myerson (Eds.), *Include 2009 Proceedings*. London, UK: Helen Hamlyn Centre.
- EIDD Stockholm Declaration (2004), Retrieved May 2, 2025, from <https://dfeurope.eu/what-is-dfa/dfa-documents/the-eidd-stockholm-declaration-2004/>
- Froyen, H. (2012). *Universal Design. A Methodological Approach. A Pathway to Human-friendly and Elegant Architecture*. Boston, USA: IHCD.
- Hain, V., Uhrík, M., Kočlík, D., Hajtmanek, R., Kupko, A. (2024). The multidimensional model - an educational and creative tool for designing sustainable reconstructions of urban structures. *World Transactions on Engineering and Technology Education*. 22(3), pp. 156-161. [wiete.com.au/journals/WTE%26TE/Pages/Vol.22.No.3\(2024\)/01-Hajtmanek-R.pdf](https://www.wiete.com.au/journals/WTE%26TE/Pages/Vol.22.No.3(2024)/01-Hajtmanek-R.pdf)
- Kacej, M. (2019). Videookulografia v architektonickom výskume [Eye-tracking in architectural research]. *Architecture Papers of the Faculty of Architecture and Design STU*. ALFA. 24(2), pp. 22-27. alfa.stuba.sk/wp-content/uploads/2020/02/2_2019_Kacej.pdf
- Kotradyová, V., Salcer, I., Vavrinský, E. (2016). Environmental Simulations and Their Role in the Research of Human Responses to Environmental Stimuli. *Applied Mechanics and Materials* 861: 618–624. <https://doi.org/10.4028/www.scientific.net/AMM.861.618>
- Kotradyová, V. (2019). Sustainability in Interior Design: Interdisciplinary Research Used for Exploring Relation Between Built Environment and Human. *IOP Conference Series: Materials Science and Engineering* 603: 042100. DOI:[10.1088/1757-899X/603/4/042100](https://doi.org/10.1088/1757-899X/603/4/042100)
- Kotradyová, V., Vavrinský, E., Kaliňáková, B., Petro, D., Janšáková, K., Boleš, M., Svobodová, H. (2019). Wood and its impact on humans and environment quality in health care facilities. *International Journal of Environmental Research and Public Health*. 16(18). <https://doi.org/10.3390/ijerph16183496>
- Leurs, B., Mulder, I. van Waart, P. (2011). Developing a Human-centered Attitude through Experiential Learning. *Proceedings of IASDR 2011. Diversity and Unity*, Delf, the Netherlands. <https://www.researchgate.net/publication/267751965>
- Meyerson, J. and Lee, Y. (2011). Inclusive Design Research Initiatives at the Royal College of Art. In Preiser, W.F.E. and Smith K.H. (Eds), *Universal Design Handbook*. (2nd Edn) (pp. 36.3-36.13), McGraw-Hill. https://www.academia.edu/19286642/Universal_Design_Handbook

Čerešňová, Z.; Filová, N. B.; Macháčová, K.; Suláková, L. (2024). Research and Analysis of Design Education on Equality, Diversity and Inclusion in Slovakia. *Strategic Design Research Journal*. Volume 17, number 01, January - April 2024. 58-70. DOI: 10.4013/sdrj.2024.171.05

- Ostroff, E. (2011). Universal design: an evolving paradigm. In Preiser, W.F.E. and Smith K.H. (Eds), *Universal Design Handbook*. (2nd Edn) (pp. 1.3-1.11), McGraw-Hill.
https://www.academia.edu/19286642/Universal_Design_Handbook
- Rose, D. H., Harbour, W. S., Johnston, C. S., Daley, S. G., & Abarbanell, L. (2006). Universal design for learning in postsecondary education: Reflections on principles and their application. *Journal of Postsecondary Education and Disability*, 19(2), 135–151.
<https://files.eric.ed.gov/fulltext/EJ844630.pdf>
- Story, M. F., Mueller J. L., and Mace R. L. (1998). *The Universal Design File: Designing for People of All Ages and Abilities*. Revised Edition. USA: North Carolina State University, Center for Universal Design. <https://eric.ed.gov/?id=ED460554>
- Šimková, M. (2018). The impact of simulation tools on product design [Vplyv simulačných pomôcok na dizajn produktu]. *Architecture Papers of the Faculty of Architecture and Design STU*. ALFA. Vol. 23(1), pp. 18-29 <https://alfa.stuba.sk/sk/vplyv-simulacnych-pomocok-na-dizajn-produktu/>
- Technická univerzita vo Zvolene. (n.d.). *Humanita v dizajne* [Humanity in Design]: Informačný list predmetu [Course description]. Retrieved May 2, 2025, from https://is.tuzvo.sk/dok_server/dokumenty_cteni.pl?id=48318&dok=45635
- UN Convention on the Rights of Persons with Disabilities (UNCRPD). Retrieved May 2, 2025, from <https://social.desa.un.org/issues/disability/crpd/convention-on-the-rights-of-persons-with-disabilities-crpd>
- Vavik, T. (2011). Strategies for teaching universal design. In *DS 69: Proceedings of E&PDE 2011, the 13th International Conference on Engineering and Product Design Education*, London, UK, 08.-09.09. 2011. <https://scispace.com/pdf/strategies-for-teaching-universal-design-1o36nedw4l.pdf>