INTUX PROJECT

Recommendations for more inclusive user testing in higher education UX design programs

Project partners:

Table of contents

Table of Contents

1   Introduction and project overview

A key part of the work of User Experience (UX) professionals is to ensure that the products and services they work on are usable to a wide range of people. According to ISO/IEC 9241-11, the definition of usability is the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use, regardless of their abilities. It follows from this that user research and user testing need to include persons of different abilities to ensure that a broad variety of user needs are considered from the start, which is one of the primary motivations for the INTUX project.

The INTUX project has two main objectives, used as guidelines when creating the recommendations contained in this document:

- to create long-term change and increase students' skills in the field of User Experience (UX) to be able to consider the needs of all users while performing usability testing in their professional fields, and

- to empower people with disabilities to be aware of their rights and to take a more active role in usability testing.

The present document contains **recommendations** that have been developed to encourage the uptake of the training course on inclusive and accessible user testing in European universities while at the same time establishing links to the labour market, facilitating access to professional careers in UX design and related professional careers for students. This section provides a summary of the work done in the INTUX project for two years, which is the basis for final recommendations.

One of the first INTUX activities was the **literature review**, which aimed to gather relevant scientific information about user testing activities and experiences among researchers in the past 10 years. Based on the existing literature, several good practices were identified, which guided our work in the next steps. Results have been published as a research paper titled "Identification of Challenges and Best Practices for Including Users with Disabilities in User-Based Testing".

The literature review provided several good practices, 15 of which were used for the following activities. In addition to the literature review, a **survey** was conducted in partner's countries, focused on learning about actual user needs. The survey was used to gather feedback from persons with disabilities, and its results were used to further develop good practices, previously identified during the literature review.

After the survey and the literature review, partners started conducting **validation and co-creation workshops**, validating and re-organizing the good practices. All workshops included users with different disabilities, providing us with feedback and their perspectives about the identified good practices.

The following step was the development of the **learning framework**, which presented a basis for a **training course** created for UX design students in higher education on topics

such as inclusive and accessible user testing with people with disabilities. The training course consists of 5 modules and is available on the project website: https://accessibility.turiba.lv/intux-training-course/

Following the training course, a **handbook for trainers** was developed, providing trainers with instructions and tips on the INTUX training material. The usefulness of the handbook was proven by piloting the "Usability testing with users with disabilities" study courses in Latvia, Spain, and Slovenia, and quality assessment results were collected during and after the piloting.

The INTUX activities continued with creating 4 interactive prototypes and their usability testing tasks, which were integrated into **case-based user scenarios** that can be used to organise usability testing sessions directly involving people with disabilities and enabling students of UX courses to practice the acquired knowledge on inclusive usability testing. These user scenarios were applied in practical sessions by the three universities in Slovenia, Spain and Latvia, in usability testing sessions involving persons with disabilities acting as users and students acting as usability evaluators. The feedback collected from the participants in the sessions was used to refine the case-based user scenarios that can be used to organise usability testing session's directly involving people with disabilities.

An additional activity of the project members has been the creation of a **mapping study** that gathers data from different study programs identified in the INTUX project partner universities und others. In addition, the project hosted a **customer case workshop** to bridge the gap between training in inclusive and accessible user testing and the current demand for such skills in the job market by showcasing potential job roles and industry needs.

The project's final activity was to host **multiplier events**: one in each country and another at the EU-level. These multiplier events have aimed to stimulate the uptake of training on inclusive and accessible user testing in European higher education curricula and present INTUX project results. In total, these multiplier events included the participation of over 100 people from across the EU, including University professors, students, persons with disabilities, and representatives of companies.

The objective of the present document is with European universities to stimulate the uptake of the training course in higher education curricula. The main content of this document is the **recommendations** on the inclusion of training on inclusive and accessible user testing in curricula for higher education programmes. These recommendations are based on all project activities previously carried out.

2   The target audience of the recommendations

The recommendations have been primarily created for university teaching and training staff who design and or deliver education and training in UX-related subjects. However, many recommendations can be applied in other educational contexts for professional UX training, such as vocational education and training (VET) courses and life-long learning processes.

The overall aim is to make it easier to connect the users with disabilities in all UX-related courses and to include the basics of user testing with persons with disabilities in courses made for all students. The project partners, therefore, hope that the recommendations and all supporting material provided by the INTUX project will be of interest to anyone involved in user-centred design in the broad sense. An essential part of teaching this subject is that the trainers have knowledge of accessibility and can provide accessible training. The institutional support revied with help to make their course and training material more accessible.

3 The importance of inclusive user testing

In addition to the project results, the recommendations also considered the following aspects: EU policy and legislation on accessibility, requirements for web professionals, and the labour market for UX designers, presented in more detail in the following subsections.

3.1. EU policy and legislation on accessibility leading to requirements for web professionals

Two primary European Directives define legal requirements for the accessibility of products and services based on Information and Communication Technologies (ICT). First, Directive (EU) 2016/2102 of the European Parliament and of the Council of 26 October 2016 on the accessibility of public sector bodies' websites and mobile applications, known as the "Web Accessibility Directive", or WAD. Second, Directive (EU) 2019/882 of the European Parliament and of the Council of 17 April 2019 on the accessibility requirements for products and services, known as the "European Accessibility Act", or EAA.

The Web Accessibility Directive mandates the accessibility of websites and mobile applications of the public administration at all member state levels (national, regional and local). The technical specifications these websites and applications must meet are defined in Annex A of the harmonised European Standard EN 301 539 v3.2.1: "Accessibility requirements for ICT products and services", published in 2021. This Directive has already entered into force, and its implementation is being monitored   by national agencies and reported to the European Commission.

The European Accessibility Act mandates the accessibility of certain products and services available in the European Market. Economic operators in scope include manufacturers, authorised representatives, importers, distributors and service providers. Products in scope include general-purpose computers, self-service terminals, terminals used for communications, terminals used to access audio-visual media services, and e-book readers. Services in scope include communication, audio-visual media, digital passenger transport, consumer banking, e-books, and e-commerce. This Directive will enter into force by June 2025, and the related technical specifications will be published as harmonised European Standards, including an update of EN 301 549.

This means that all web professionals, including UX designers, in the public sector and most commercial sectors, including the ICT suppliers selling to any web owner in the scope of the two directives, must be able to create and maintain accessible interfaces that comply with the law - across the European Union.

University courses for UX designers in the EU simply have to cover digital accessibility. An efficient way to make sure students understand the topic of accessibility in a practical way and receive actionable knowledge is by incorporating persons with disabilities in the courses.

3.2. The labour market for UX-designers

The labour market for UX designers is dynamic and rapidly evolving due to the increasing importance of user experience in digital products and services. Based on the multiplier event polls, we identified several trends.

Since there is a strong demand for UX designers across industries, driven by the digital transformation of businesses and the need for user-friendly interfaces, several guidelines have emerged. Tech companies, startups, and even traditional sectors are investing in UX design to improve customer engagement and satisfaction. General recommendations include:

- **Skill Requirements**: Employers seek UX designers with skills that include user research, wireframing, prototyping, interaction design, and usability testing. Familiarity with design tools (like Figma, Sketch, and Adobe XD) and a good understanding of user-centred design principles are essential.
- **Remote Work**: The rise of remote work has expanded opportunities for UX designers, allowing them to work for companies globally. This trend has increased competition, but it also provides flexibility and access to a broader range of job opportunities.
- **Inclusive Design Focus**: As the demand for UX designers grows, there's an increasing emphasis on designing for all users, including those with disabilities. This has led to a rise in inclusive and accessible design practices, ensuring digital products and services are usable by people with various disabilities.
- **Improved Accessibility Standards**: UX designers more frequently integrate accessibility standards (like WCAG - Web Content Accessibility Guidelines) into their design processes. This results in digital products that are more accessible, benefiting users with visual, auditory, motor, or cognitive impairments.
- **User Testing with Diverse Groups**: More UX designers are conducting user testing with individuals with disabilities, leading to better insights and improvements that directly address the needs of these users. This practice helps to create more effective and user-friendly interfaces.
- **Advancements in Assistive Technology**: The growing focus on UX design has also spurred advancements in assistive technologies, such as screen readers, voice-controlled interfaces, and haptic feedback, making it easier for users with disabilities to interact with digital products.
- **Increased Awareness and Advocacy**: As UX design matures, designers are increasingly aware of the importance of accessibility. This awareness translates into more advocacy within organisations to prioritise accessibility from the outset rather than as an afterthought.

Despite the demand, UX designers often face challenges such as staying updated with rapidly changing tools and trends, managing stakeholder expectations, and balancing creativity with user needs and business goals.

4. Recommendations based on the mapping of UX design-related programmes

One of the sources for the recommendations in UX testing was a mapping study conducted among the universities in the consortium, and other European universities. The universities participating in the INTUX project have produced a mapping of UX design and related courses where the user testing training courses can be incorporated, considering their bachelor, master, and PhD programmes as well as programmes from other universities. The information collected for each programme via webpage information and partner gathered information in separate documents that has been listed below:

- information about the University,
- an overview of the programme (including its level, objectives, skills, knowledge, competencies, and ISCED classification),
- a description of UX-related courses (including content description, learning outcomes, type   of knowledge – theoretical, practical or both –, professors' background and willingness to add INTUX results), and
- feedback received via online forms from lecturers and alums (or last-year students).

Besides data about the programmes, lecturers and students answered questionnaires providing some recommendations based on their experience, which are provided directly in the following section.

4.1. Recommendations and comments based on lecturers' answers

The mapping study provided several opinions and suggestions from lectures giving using online forms. The analysis that was carried out hasn't identified any significant differences in the structure of UX design related courses. The minor differences like the form of studies, full-time and part-time, and the length of bachelor's and master's studies has shown minor differences. There are also no significant geographic differences between EU countries related to UX design, and differences reflect the varying educational priorities, industry needs, and cultural approaches across countries.

Based on the documented responses, the following recommendations are proposed:

- Ensure that inclusive design principles, especially regarding accessibility, are not limited to introductory courses. Reinforce and extend these concepts throughout the curriculum, particularly in advanced courses and practical projects, to prevent students from forgetting or ignoring these crucial aspects.
- Increase opportunities for students to apply theoretical knowledge in realistic and extensive scenarios. This can be achieved by incorporating more case studies, real-world projects, and simulations into the curriculum, allowing students to gain hands-on experience and bridge the gap between theory and practice.

- Provide more comprehensive training in social skills, such as effective communication with real users, and emphasise understanding the diversity of potential users. Additionally, delve deeper into ethical aspects, including non-discrimination and data protection, ensuring that students are well-prepared to consider these critical factors in their professional work.
- Modernise the curriculum by introducing current programming languages, frameworks (e.g., React, WordPress, ELIXIR), and design tools. Offer courses focusing on technical skills and design methodologies, particularly for non-IT students who need to learn design tools and approaches.
- Address the gaps in the curriculum by providing more in-depth coverage of information architecture and content strategy. Ensure that students have the skills to handle these areas effectively, as they are crucial for creating well-structured and accessible systems.
- Develop specific training modules or exercises that help students improve their ability to work under pressure, be creative, and generate innovative ideas. This can include workshops, hackathons, or timed challenges that simulate real-world constraints.
- Enhance the focus on user-centred design by providing more detailed guidance on conducting user interviews, abstracting user models, and adapting designs based on context analysis. This will help students develop a deeper understanding of effectively incorporating user needs into their designs.
- Provide rigorous training in applying design heuristics and WCAG guidelines and conducting usability tests. Ensure that students learn the basics and gain experience in applying these concepts to high-fidelity prototypes and complex systems.
- Introduce specific courses or modules on group work dynamics, project management, and tools like version control (e.g., GitHub) and organisation models (e.g., Kanban). This will improve students' ability to collaborate effectively and manage projects efficiently.
- Utilise the findings and resources from the INTUX project to develop and enhance PhD-level courses, mainly focusing on integrating practical examples, best practices, and advanced user-centred design methodologies. This will help bridge the gap at the PhD level and ensure a more comprehensive education continuum from Bachelor's to PhD.

4.2. Recommendations and comments based on alums and last year's students

The mapping study also provided several opinions and suggestions from alumni and students from previous years that has collected via online forms.

The alums and last year's students also gave the following recommendations on what should be added to the existing program (collected without editing):

- More compulsory subjects on UX, but when they are more trained, make known the problems that people with disabilities may have.

- To make it aesthetically pleasing, a design section should be added to the degree that focuses on explaining certain concepts, such as content structuring and the correct placement of elements.
- For example, if you know how to make a database, you know how to design an API, and you should see a frontend base (which is not explained in the race either) but not integration. It is something that is learned externally, but it would not be a bad idea to describe yourself in the career since it is common in the work environment.
- In addition, there are electives such as Cloud that offer another side of computer science and can help DevOps-oriented students since gaining experience in this field is difficult.
- More updated content.
- A subject that emphasised the importance of working in a group and taught what it is to work in a group efficiently and how it can be achieved.
- Maybe an introduction course to UI design first to learn the basics of at least good UI design and accessibility, then tackle UX design, or vice versa.
- Separate the subjects of data science and artificial intelligence into two parts (to delve deeper into them and not have to see the whole syllabus in a hurry).
- User Perspective. In the last year, you found IPO, GPI, and Fundamentals. These three teach (instead try to teach) software development from the perspective of the user, the developer, and the entrepreneur, respectively. But Fundamentals is the same as 3rd year ESO ADE: remove it. As for GPI, it teaches how to manage a project, but in the third year, we had to do a project for a chair in Software Engineering (IS). Why do and then teach instead of teaching and then doing? They are in reverse order: first, there should be GPI with 6 credits in third and then IS with 3 credits in fourth (I am not going to stop to explain the reasons, but these two subjects, in their current situation, are wasted). IPO is the only one on your site.
- The following changes should, therefore, be made:

    - (1) A subject that teaches Github, Figma, Python, and Jupyter. With all these elements, you have a subject that teaches varied, modern, and highly demanded tools that we can apply in a global project of the subject, that is, develop software throughout the subject using only those tools. By the way, it should be a modern topic like AI, machine learning, and NLP (topics not touched on in the degree, except for AI, which is touched on very passingly).
    - (2) Change GPI and IS places: GPI in third with 6 credits and IS in fourth with 3 credits.
    - (3) Let's remove Fundamentals, that is, 3 credits. Thus, the IPO would put it in the first quarter of the fourth quarter with 6 credits. The other 3 remaining credits can (and should) be used in a subject dedicated to the frontend development of a web application, taking what was seen in IPO to practise in software development: let's call it "Frontend Development". The IPO teacher can teach this subject, and his job would consist of evaluating, at the user level, the app that the students develop (a development divided into phases: first having the draft, then the design in Figma, then a black and white design on the web go little by little, well) thus being able to evaluate elements that are not tangible in IPO, such as the alternative texts of the images, that the app allows

colour changes based on the user's visual impairment, that it is legible by a reader for people who are blind... I don't know exactly how it would be approached, but there is a lot to play with, and we combine Software Engineering with IPO.

- Real elective subjects allow you to specialise and choose what you like and would like to work on.

Based on the documented responses, the following recommendations are proposed:

Expand UX Design Education:

- Integrate Comprehensive UX Design Courses**.** Include dedicated courses on UI design alongside Human-Computer Interaction (HCI) to cover both theoretical and practical aspects of UX design. Focus on both low-fidelity and high-fidelity prototyping using tools like Figma.
- Enhance Accessibility Training**.** Ensure that accessibility is not only introduced but thoroughly integrated throughout the curriculum. Provide detailed training on structuring prototypes to be aesthetically pleasing yet accessible.

Update and Diversify Technical Skills:

- Modernise Programming Language Offerings for better UX related development**.** Update the curriculum to include current programming languages and frameworks such as Python, Angular, React, and Node.js. This will better align with industry demands and modern technological trends.
- Expand Training on Design Tools**.** Incorporate training on contemporary design and development tools (e.g., GitHub for version control, Kanban for project management) to enhance practical skills and improve workflow efficiency.

Strengthen Practical Application:

- Increase Real-World Projects**.** Integrate more real-world projects and case studies into the curriculum to provide students with practical experience. Simulate real-life scenarios to bridge the gap between theoretical knowledge and useful application.
- Focus on Application Design Integration**.** Ensure that application design principles are taught in conjunction with technical subjects, emphasising how to relate and apply concepts across different courses.

Improve Group Work and Project Management Skills:

- Teach Effective Teamwork**.** Develop modules or workshops on teamwork, collaboration tools, and project management techniques. Teach students how to work effectively in groups and manage projects, including estimating work hours and coordinating tasks.
- Implement Collaborative Projects**—foster** collaboration by assigning group projects that simulate industry practices, allowing students to experience real-world teamwork dynamics.

Enhance Training in User-Centred Design. Provide more in-depth training on user-centred design processes, including conducting user interviews, creating user models, and adapting designs based on context analysis. Emphasise the importance of understanding user diversity and addressing it in design.

Strengthen Mathematical and Technical Foundations on UX related development:

- Focus on Applied Mathematics**.** Ensure that mathematical training is broad and deep, emphasising practical applications and problem-solving skills. Address the current imbalance where mathematics is touched upon but not explored in depth.
- Balance Computer Science Fundamentals**.** Balance the focus between low-level and high-level programming languages to provide a well-rounded technical education. Introduce more advanced programming concepts and applications.

Promote Autonomous Learning and Problem-Solving. Continue to develop students' abilities to learn autonomously and solve complex problems. Incorporate assignments that challenge students to explore new technologies and methodologies independently.

Refine the Curriculum to Address Gaps. Reassess and update the curriculum to cover missing areas such as content strategy, information architecture, and ethical aspects of technology. Ensure that all relevant topics are adequately covered to prepare students for diverse professional challenges.

5. List of Final Recommendations

Based on the work described above, the following recommendations can be made to include the topic of inclusive user testing in UX design courses:

5.1. Mandatory inclusion and balanced distribution of UX Design in Programmes

It is necessary to emphasise that study programmes (at all levels: bachelor, master and PhD) must include UX design study courses as a core curriculum component. Emphasising the importance of user experience design at all three levels of study ensures that future researchers and professionals are equipped with the critical skills needed to create user-centred solutions, bridging the gap between technology and human interaction. In addition, a proportional distribution of UX design courses across both Master's and Bachelor's programmes ensures that accessibility and user experience are given equal importance at different levels of education.

5.2. Combine individual and group-based work of UX Courses

Looking at the strengths, it can be concluded that UX is enjoyable for both teachers and students, as well as graduates who can apply knowledge, competencies, and skills even after graduation. The instructors recognise that the material is functional and has improved their understanding of UX. The available materials can provide an opportunity to work in groups and individually. To further capitalise on these strengths, it is recommended to continue offering opportunities for both group and individual work, allowing students to deepen their understanding through collaborative and independent learning experiences. This approach will ensure that UX education remains engaging, practical, and effective in preparing students for real-world challenges.

5.3. Apply a gradual approach to organise UX-related courses.

Based on the identified weaknesses, it can be concluded that many people are confused and have a problem understanding the term UX when they hear and learn about this domain for the first time. Therefore, it makes sense for them to gradually become familiar with the content. First, they need to know the basics, and once these are mastered, they can proceed to learn more in-depth UX concepts and approaches

5.4. Mandatory inclusion of user testing in Programmes

Make usability testing a core component of UX and Human-Computer Interaction courses. This should cover various evaluation techniques, including those specific to inclusive usability testing with participants with disabilities. Provide students with opportunities to conduct real-world usability testing sessions, where they can apply inclusive testing methods and gather feedback from users with diverse abilities.

A precondition to incorporate inclusive user testing is that user testing is already being taught in the UX- or HCI-related courses. Some UX or HCI-related courses focus more on the design and programming of interactive user interfaces and less on evaluating the resulting systems' usability. If this is the case, then it is necessary to incorporate lessons on usability evaluation techniques and, more specifically, on usability testing. Universities willing to incorporate the results of the INTUX project need to make sure that usability testing is part of the content of the UX- or HCI-related courses. Once this is done, then it will be possible to add content on inclusive usability testing where the participants in the test are persons with disabilities.

5.5. Mandatory Inclusion of Accessibility in Programmes

In addition to the inclusion of usability testing in the curriculum of the degree programmes, it is also necessary to ensure accessibility is included in the programmes. It can be included either as the content of existing UX and HCI-related courses or as a new course. In any case, students should learn about the needs of persons with disabilities, how these persons use assistive products, and how to apply accessibility requirements to design products and services with good accessibility. This content on accessibility is a precondition to teaching about inclusive user testing. Students need to be aware of accessibility to learn how to prepare and perform usability testing sessions that include persons with disabilities as test participants.

5.6. The vertical approach: management awareness

If a university with a strong vertical structure (where management decides on the content of the University's programs) wishes to incorporate the results of the INTUX project, where management decides on the content of the University's programs, it is crucial to ensure that decision-makers are fully aware of the importance of ICT accessibility and the necessity of including inclusive usability testing in the curriculum. To achieve this, targeted awareness activities should be developed for management personnel, including the legal, ethical, and market-driven reasons for prioritising accessibility in education. These activities should utilise various strategies to effectively communicate the critical need for accessible interactive products and services, emphasising their impact on education and the broader societal benefits. Some ideas are:

- Accessibility is a tool to increase the inclusivity of products and services so that persons with disability are not discriminated against in society.

- Accessibility is a legal requirement, as many countries have legislation that mandates the accessibility of products and services of the public and private sectors. In these countries, there is an increasing demand for accessibility-capable professionals.
- Teaching accessibility is a legal requirement for university universities, as several countries have legislation that asks universities to teach about accessibility in their bachelor's or master's degrees.

- Empathy-oriented sessions will involve the participation of persons with disabilities who   can provide first-hand experience on the issues that they face due to the lack of accessibility of products and services.

5.7.   The horizontal approach: professor's awareness

If the University that wants to incorporate the results of the INTUX project has a horizontal approach, where professors have the freedom to propose content for the courses, then it is essential to make the professors who teach UX- and HCI-related courses aware of the importance of accessibility and inclusive user testing.

The same ideas for awareness contents described in awareness sessions with professors can be applied:

- Accessibility as a tool to increase the inclusivity of products and services.
- Accessibility as a legal requirement and labour opportunities.
- Teaching accessibility as a legal requirement.
- Empathy-oriented sessions with the participation of persons with disabilities.

Therefore, provide training for professors and lecturers on the principles of inclusive design and the specifics of conducting inclusive usability testing. This training will ensure that faculty are equipped to teach these critical topics effectively. Promote cross-disciplinary collaboration within the institution to enhance the teaching of accessibility. For example, UX design programs can collaborate with departments of computer science, psychology, and social sciences to provide students with a well-rounded understanding of the factors that influence inclusive design.

5.8.   Teach the teacher

Once it has been decided to incorporate teaching on inclusive testing in the university courses, it will probably happen that the professors assigned to these courses have little or no formation on the topic of accessibility and inclusive user testing. If this is the case, then the results of the INTUX project (more specifically, the content modules) can be used to prepare formative actions directed at professors so they can be prepared to teach about the topic in the future. This action is very important to make sure that the teaching staff is ready to deliver high-quality teaching on the topics of inclusive user testing to students.

Therefore, the training modules developed by the INTUX project can be used to create a comprehensive faculty development program. This program should cover the basics of inclusive design, usability testing with persons with disabilities, and best practices for integrating these topics into the curriculum. Provide continuous support and updates to faculty as new accessibility standards and technologies emerge, ensuring that the curriculum remains current and relevant.

5.9. Teach at least the basics first (the INTUX good practices)

Ideally, teaching on inclusive user testing should include both theoretical (knowledge) and practical (skills) content. If this is not possible due to limitations in the amount of teaching time designated to the topic of inclusive user testing, then at least the teaching should include the best practices identified in the INTUX project. That would be the minimum learning goal for the students: that they are aware of the importance of incorporating persons with disabilities in usability testing sessions and the most important recommendations to apply before, during, and after the testing session.

5.10. Collaborate with organisations of persons with disabilities

To apply the user scenarios defined in the INTUX project to practical activities, it is essential to recruit persons with disabilities who can act as participants in usability testing sessions. The recruitment is probably outside the capabilities of the University, so a good recommendation is to establish strong collaboration links with organisations that work with persons with disabilities. These organisations can be extremely helpful in finding persons with disabilities willing to go to the University to participate in teaching-oriented usability testing sessions so that students can put into practice the knowledge acquired in the theoretical sessions about inclusive user testing. Maintain ongoing relationships with these organisations to ensure continuous improvement in teaching and practical application of inclusive design principles. In addition, these organisations can be extremely helpful in preparing awareness activities as described in recommendations 6.8 (the vertical approach) and 6.9 (the horizontal approach).

5.11. Take a step-by-step approach

User testing is a complex activity that requires years of experience to master. To effectively learn this skill, students should engage in it through practice and iterative learning, with exposure each year to different aspects of user testing. This approach ensures that students do not encounter the concept only once—either too early in their first year or too late near the end of their studies—but instead build and reinforce their knowledge continuously build and reinforce their knowledge. By encountering user testing in various contexts throughout their education, students will strengthen their understanding and become more familiar with its application in real-world scenarios.

Therefore, inclusive user testing concepts should be introduced gradually throughout the UX design curriculum, starting with basic principles and advancing to more complex applications as students progress through their studies. Regularly assess the effectiveness of the curriculum in teaching inclusive design and adjust the content based on feedback from students, faculty, and industry partners.

5.12. Listen to the customer (collaboration with the labour market)

One of the greatest risks in developing IT solutions is the disconnect between market needs and what is delivered. This issue is equally critical in education, particularly when teaching user testing, which is inherently focused on understanding and meeting user needs. To address this, it is highly recommended that one or more representatives from the labour market participate in lectures. Their involvement would provide valuable insights into the customer's perspective, ensuring students are better prepared to meet real-world demands and close the gap between theory and practice.

5.13. Ensure Practical Experience Through Case Studies and Real-Life Scenarios

Integrate case studies and real-life scenarios into the curriculum, focusing on the challenges and best practices in inclusive design and usability testing. This approach will help students understand the practical applications of their theoretical knowledge. Engage with industry partners to create realistic customer case studies that reflect current labour market demands. These case studies should highlight the need for accessible and inclusive user testing and demonstrate the value of such expertise in professional practice.

5.14. Foster Collaboration with Organizations Representing Persons with Disabilities

Establish partnerships with disability organisations to facilitate the recruitment of participants for inclusive usability testing. These partnerships can also provide valuable resources and training for both students and faculty on how to conduct effective inclusive testing sessions. Maintain ongoing relationships with these organisations to ensure continuous improvement in teaching and practical application of inclusive design principles.

Disabilities to help students understand the real-world implications of their design decisions and the importance of accessibility.

The purpose of the listed recommendations is to serve as suggestions, and different lectures can adapt them to their specific needs and resources.