Metadata - Codes used

These are the codes used for our paper entitled "***Perspectives on People with Disabilities Inclusion in Software Development Teams***".
This document was used as a guide to align understanding among the researchers during the coding phase and is available to be used as an open science artifact.

Filter Codes

These codes were used to make the first manual filter on the selected papers. This codebook facilitated the work among the researchers that performed the activity.

We used some of the definitions created by Mack et al [1] and added some others specific to our research theme.

1 - Decision

The researcher's decision on the inclusion of the paper to the next phase (3 codes; only one could apply to one paper).

Included. The paper matches the following criteria: is a research paper, full paper can be accessed with the researcher's University[1] credentials and it addresses the theme "PwD as professionals of software development teams".

> Ex: "*In this paper, we present an empirical study comparing the program comprehension of blind and sighted programmers*."

Removed. The paper doesn't match at least one of the criteria to inclusion described above.

> Ex: "*In this study, we performed an accessibility evaluation of a sample of 25 interface components from the Bootstrap front-end framework*."

Not Sure. The researcher is not sure and needs to discuss with other peers.

2 - Exclusion Criteria

Defines the exclusion criteria used by the researcher (3 codes; only one could apply to one paper).

Unavailable paper. Full paper can't be accessed with the researcher's University[2] credentials.

Not a research paper. Isn't a research paper, but an abstract, poster, thesis, etc.

Doesn't address the research theme. It doesn't address the theme "PwD as professionals of software development teams".

[1] Anonymized for Review

[2] Anonymized for Review

Classes of Codes

For the defined *class of code*, we detailed the meaning of each *code* used with examples and references from the control papers.

We used some of the definitions created by Mack et al [1] and added some others specific to our research theme.

1 - Community of Focus

The accessibility-related population or community being studied or positioned by the authors as benefiting from the research (8 codes; multiple codes could apply to one paper).

Blind and Visual Impaired (BVI): people who are blind, low vision, or generally described as having visual impairments. Does not apply to color vision deficiency nor visual impairments corrected by wearing glasses or contact lenses.

d/Deaf and hard of hearing (DHH): people with hearing loss or who identify as deaf/Deaf or hard of hearing and use assistive technologies to interact with the computer.

Motor and physical impairment (MPI): people with motor or physical impairments.

Autistic and neurodivergent people (ASDN): people with autism spectrum disorder, attention deficit hyperactivity disorder, dyslexia and dyscalculia.

Intellectual and developmental disabilities (IDD): congenital disability that impacts how people develop (e.g., Down syndrome).

Cognitive impairment (CI): this community consists of people with cognitive impairments which impact brain function and include things like TBIs but also aphasia and dyslexia; these can be diagnosed at any age and are not necessarily congenital.

General disability: a paper should be marked as "general disability" if it studied disability or accessibility in general, but no specific subpopulation--for example, looking at what nondisabled people think about disability in general or accessible education for people with disabilities in general (i.e., not a specific group like IDD)

Other: any communities of focus not already listed.

2 - Issue Addressed

Identifies the research goal of each paper. (7 codes; multiple could apply).

Increase digital access or ease of use: addresses accessibility or usability issues of digital technology used over the development cycle.

Increase physical access: addresses an inaccessible aspect of the physical world to promote the inclusion of PwD on development teams.

Increase understanding of users: states a goal of learning more about a community, their preferences, difficulties, abilities, etc.

Increase knowledge of existing literature: states a goal of learning how academic literature presents issues related to PwD in development teams.

Support communication: the goal was supporting in-person or online communication between persons

Support collaboration: the goal was supporting collaboration, i.e., support PwD in working together in a common objective with other team members.

Other: any issue not already listed.

3 - Contribution Type

Identifies the contribution type based on the definitions from Wobbrock and Kientz's "*Research Contributions in Human-Computer Interaction*" [3]. The author's definitions used are cited above (7 codes; multiple could apply).

Empirical: "*new findings based on systematically observed data (quantitative, qualitative or mixed). Empirical studies on HCI provide new data, to reveal formerly unknown insights about human behavior and its relationship to technology.*"

Artifact: "*artifacts, often prototypes, include new systems, architectures, tools, toolkits, techniques, sketches, mockups, and envisionments that reveal new possibilities, enable new explorations, facilitate new insights, or compel us to consider new possible futures.*"

Methodological: "*add or refine the methods by which researchers or practitioners carry out their work in HCI. Research methods enable scientists to make new discoveries, while practitioner methods enable designers and developers to apply their craft to greater effect.*"

Theoretical: "*new models, principles, concepts, or frameworks, or important variations on those that already exist.*"

Dataset: "*new and useful corpus, often accompanied by an analysis of its characteristics, for the benefit of the research community. Datasets enable evaluations against shared benchmarks by new algorithms or systems*."

Literature Review: "*review and synthesize work done in a research field with the goal of exposing trends, themes, and gaps in the literature.*"

Opinion: "*Opinion research contributions, also called essays or arguments, seek to change the minds of readers through persuasion. (...) Along with persuasion, the goal of opinion contributions is to compel reflection, discussion, and debate.*"

4 - Research Method

To this class of codes we used the definitions from Lazar et al. "Research Methods in Human-Computer Interaction" [4]. The author's definitions used are cited above (11 codes; multiple could apply). Only coded for studies for which results were reported (i.e., not for pilot studies).

Controlled experiment: a controlled experiment with multiple comparative conditions in a controlled environment manipulated by the researcher.

Survey: "*well-defined and well-written set of questions to which an individual is asked to respond. Surveys are typically self-administered by an individual, with no researcher present*". The terms "survey" or "questionnaire" were explicitly used and it is *not* the same as a literature survey or survey contribution.

Usability testing: "*representative users attempting representative tasks in representative environments, on early prototypes or working versions of computer interfaces. The world of usability testing includes: testing prototypes that have only been built on paper; testing screen mock-ups or wireframes which have no functionality; testing screen layouts which have partial functionality; testing prototypes that look complete but have a human behind the scenes responding (known as the "Wizard of Oz" technique); testing working versions of software before it is officially released; testing software that has already been implemented in existing systems*".

Interviews: Interviews with individuals.

Case study: applied only if the authors used the term "case study". Note that, there is some misunderstanding in the literature about the concept of case study where, often, authors mistake it for a scenario, use case, or test organization, since a "real" case study means that the case was carefully selected.

Focus groups: holding a discussion with a *group* of participants who are stakeholders in the study.

Field study: deployment of a tool and/or data collection in the wild (e.g., not lab).

Workshop/design: some form of workshop or design session, or where researchers and participants worked collaboratively together (e.g., participatory design).

Other: for methods that did not fit into any of the above categories.

5 - Participant Groups

Codes for types of participants groups included in user studies, if applicable (6 codes; multiple could apply). To this class of code, the term professional refers to software industry professionals in any discipline, such as requirements, tests, programmers etc.

Not Applicable: No user study, and therefore no participants recruited.

Professionals with disabilities: participants included people with disabilities.

Professionals without disabilities: members of the general population, not specifically described as having disabilities. Note if the authors recruited a specific subpopulation other than those other categories here, record it as "other" (e.g., if they recruited people with financial expertise).

Organizations: Representants answering as the Company/Enterprise/Organization's official manifestation.

Support staff: People whose responsibility it is to help PwD participate in carrying out their professional activities in software development teams. (e.g., people fluent in sign language).

Other: for participant groups that did not fit into any of the above categories.

6 - Workplace

Codes to identify whether professionals involved at the study work in co-located, full-remote or hybrid workplaces with their teams. (5 codes; multiple could apply).

Not Meaningful: This information is not mentioned in the study or it is not meaningful to the results or problem investigated.

Co-located: The study considers the development team working together on the same site.

Hybrid: Part of the development team works co-located and part remotely.

Full remote: All the development team works remotely.

Other: for workplaces that did not fit into any of the above categories.

7 - Role on the development team

Defines what role the people in the studied community of focus play (7 codes; multiple could apply).

Programmer: People who act as a software programmer, creating code artifacts on development teams.

Tester: People responsible for testing a software product during the development lifecycle.

Manager or Facilitator: People who're responsible to manage the efforts needed to deliver a software product. Usually reported as Project Manager, Scrum Master or Agilist.

Product Specialist: Product Owner, Product Manager, Requirements or Business Analyst.

Designer: User Experience Designer (UX), Product Designer, User Interface Designer (UI)

Not Specified: Not specified in the study.

Other: Other roles not mentioned.

8 - PwD as Co-Author

Information about the participation of PwD as Co-Author of the research. (3 codes; only one could apply).

Not Mentioned: Not specified in the study if among the authors there is a PwD.

Yes: The paper explicitly indicates the participation of a PwD as co-author.

No: The paper explicitly indicates that there isn't a PwD as co-author.

9 - Challenges identified

Describes what kind of challenges people in the studied community of focus experience in their daily practice of professional activities (open code).

10 - Workarounds

Strategies already used by PwD to overcome the Challenges pointed in the study (open code).

11 - Findings

Describes the findings of the Research (open code).

12 - Motivation (Evaluate)

Motivation the authors cited for doing the research (open code).

13 - Recommendations

Explicitly describes recommendations to overcome the challenges and promote inclusion of PwD professionals that arose from the research results (open code).

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