



EYE•TEACH

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Gender Action Plan

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Executive Summary

This Gender Equality Action Plan (GAP) outlines EYE-TEACH's commitment to embedding gender equality, diversity, and inclusion across all phases of the project, from research design and data collection to co-creation, dissemination, and governance. Grounded in EU policy frameworks and the principles of intersectional gender mainstreaming, the plan integrates sex and gender considerations with other social factors such as age, ethnicity, and disability. By adopting inclusive methodologies, disaggregating data, and critically examining AI and eye-tracking technologies for bias, EYE-TEACH ensures that its innovations respond equitably to the diverse needs of learners and educators. Gender balance will be promoted in team composition and decision-making roles, while inclusive language and accessible design will be applied to all materials. The GAP also addresses visual representation, participatory governance, and support for individuals with care responsibilities. Ongoing monitoring and evaluation will ensure that gender-sensitive practices are upheld and continuously improved. This approach not only fulfils Horizon Europe's ethical and policy standards but also enhances the project's societal relevance and impact.

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1. Introduction

This Gender Equality Action Plan (GAP) outlines the strategy and measures EYE-TEACH will implement to ensure gender equality is embedded horizontally across all stages of the project. Serving as a guiding framework, the GAP addresses gender-related considerations throughout the project lifecycle, from initial planning and design to data collection, analysis, and dissemination, not only as a matter of fairness, but as a means to enhance the project's impact and societal relevance. In line with the EU's gender equality policies, EYE-TEACH adopts the principles of the European Commission's Gendered Innovations (2013) and Gendered Innovations 2 (2020), which promote inclusive, intersectional research practices. These reports, which inform the Horizon Europe framework, highlight the importance of integrating gender perspectives across the entire research process. EYE-TEACH also adheres to the Ethics Framework and Guidelines for Participatory Processes in the Activities of Research Funding Organizations (Wiarda et al., 2023), ensuring all project activities are inclusive and provide equal opportunities, irrespective of gender identity, sexual orientation, race, ethnicity, disability, or socioeconomic background.

For EYE-TEACH, promoting equal and inclusive participation is fundamental to the project's success. Adopting an intersectional gender approach is essential to addressing the diverse needs of both students and educators. Education is shaped by multiple factors, including gender, ethnicity, disability, and age, all of which influence how individuals interact with learning technologies. By accounting for these intersecting dimensions, EYE-TEACH can ensure that its AI and eye-tracking technologies effectively support all learners, regardless of background. This approach is particularly critical for personalised education, where the objective is to tailor teaching methods to the unique needs of each learner. Furthermore, integrating these considerations into the design and implementation phases will enable the project to equip educators with inclusive, comprehensive training materials and foster a learning environment that is both equitable and accessible.

2. Terminology and Important Concepts

Diversity: Diversity is the recognition and understanding of a wide range of human differences and experiences, including differences in gender identity and expression, sex characteristics, race, ethnicity, cultural background, language, sexual orientation, disability, neurodiversity, age, socioeconomic background, religion, nationality, migration status and more. Diversity reflects the acknowledgement that people experience the world in different ways and their experience is shaped by their identities, values, and lived realities (Wiarda et al., 2023; European Institute for Gender Equality [EIGE], 2016).

Equality/Equity: Equality refers to equal treatment of everyone while providing them with the same opportunities and resources, regardless of their individual differences. Equity goes beyond equality and represents fairness and justice in the distribution of benefits and responsibilities by recognising the different needs and barriers faced by diverse groups (Wiarda, et al., 2023; EIGE, 2016).

Inclusion: Inclusion is providing everyone equal access to participate in society by removing barriers and creating an environment where diversity is valued and all individuals can contribute equally and benefit from social, economic, and civic opportunities (Wiarda et al., 2023).

Bias: Bias refers to the conscious or unconscious stereotyping, prejudice, or discrimination, often rooted in societal norms, attitudes, or behaviours that lead to the unfair treatment of individuals based on their characteristics such as race, ethnicity, gender, etc. In the context of research and innovation (R&I), bias can influence how stakeholders define and address problems, collect and interpret data, and show a preference for certain outcomes that favour specific groups.

Intersectional Gender Mainstreaming: Intersectional Gender Mainstreaming is the process of systematically incorporating a gender equality perspective into all policies, programmes, and activities at all levels and stages, while also recognising how gender

intersects with other personal characteristics or social factors, such as ethnicity, age, disability, or migrant status, to disadvantage individuals (European Commission, 2020; Council of Europe, 2024).

Gender and Sex: Gender is the socially constructed roles, behaviours, activities, and attributes that a given society considers appropriate for different gender identities, while sex refers to the biological characteristics of individuals, including chromosomal composition, reproductive organs, and hormone levels, distinguishing them as female, male, or intersex. Such biological characteristics can influence physiological processes with an implication for those in R&I to consider sex based differences when technologies, products, or systems are developed and applied (European Commission, 2020; Wiarda et al., 2023).

Cisgender and Transgender: Gender, distinct from biological sex, is a social construct encompassing roles and identities shaped by cultural and societal norms. Some individuals pursue gender-affirming processes to bring their physical characteristics into alignment with their gender identity. Transgender is an umbrella term that involves a variety of identities where one's self-identified gender differs from the sex assigned at birth. Cisgender, by contrast, describes individuals whose gender identity aligns with their assigned sex. Others may reject binary classifications altogether, identifying as genderqueer, non-binary, gender-fluid, or bigender (European Commission, 2020).

3. Guiding Principles

Intersectional Gender Mainstreaming

Gender equality efforts will consider overlapping dimensions of identity and experience (e.g. race, age, disability, socioeconomic status) to ensure more holistic and effective inclusion.

Fairness and Transparency

All procedures, particularly related to recruitment, mobility, and selection, will be transparent, clearly documented, and based on merit without bias.

Zero Tolerance for Discrimination

EYE-TEACH adopts a strict non-discrimination policy and will act on any instances of exclusion, harassment, or unequal treatment based on gender or related identities.

Participatory and Inclusive Governance

Representation and diversity will be embedded in project governance, work package leadership, advisory roles, and decision-making bodies.

4. Gender Differences in Eye-Tracking and AI in Education

The Gender Equality Action Plan (GAP) for EYE-TEACH is grounded in a systematic analysis of how sex, gender, and intersecting social factors influence the development and implementation of AI and eye-tracking technologies in education. The plan recognises that failing to consider gender dimensions can perpetuate biases and limit both the scientific validity and societal impact of research outcomes. Embedding an inclusive perspective from the outset aligns EYE-TEACH with EU policy priorities and enhances the quality and relevance of its innovations.

Recent research shows that gender differences in cognitive processing, learning behaviour, and digital engagement result from a complex mix of biological, sociocultural, and technological influences (Papavlasopoulou et al., 2020; Sidhawara et al., 2023). In the context of eye-tracking, these differences can affect how learners focus on visual and textual content, shaping their interaction with personalised AI systems (e.g., Gao et al., 2023; Zhan et al., 2020). To exemplify, some studies are outlined hereunder.

One study focused on sixth-grade students engaging with a virtual reality (VR) lesson in computational thinking, investigating whether gender could be predicted based on eye movement patterns (Gao et al., 2023). The findings revealed distinct attentional behaviours: girls tended to concentrate more on the virtual teacher and lesson screen, while boys displayed more exploratory behaviour, including increased attention to peer avatars and more frequent head movements. These gender-specific patterns suggest differing cognitive and social engagement strategies in immersive learning environments.

An older study (Yang et al., 2016) investigated how university students' scientific epistemological beliefs (SEBs) and gender influence their science-text reading processes using eye-tracking technology. Findings revealed clear gender differences: women showed less mental effort when processing scientific explanations but

focused more on data and microview graphics, while men invested more effort in understanding explanatory content. Although students with more sophisticated SEBs generally paid more attention to data and less to other elements, the influence of SEBs varied by gender. For example, women with sophisticated SEBs became even more focused on data and visuals, whereas men with similar beliefs showed a stronger reduction in attention to factual and explanatory text. These results highlight that gender, in interaction with SEBs, plays a key role in shaping how students engage with science texts.

Another investigation examined undergraduate students' eye-tracking data during programming problem-solving tasks to explore gender differences (Obaidellah & Al Haek, 2018). This research found that men exhibited more expert-like strategies by focusing on complex code and outputs, whereas women attended earlier and for longer to problem statements and simpler code segments. These divergent approaches highlight how eye-tracking can uncover distinct problem-solving behaviours across genders.

Further research into eye movements during text reading tasks revealed additional gender-based variations (Zhan et al., 2020). Women showed larger pupil sizes and higher blink rates, indicators of increased cognitive load, while men demonstrated higher fixation and saccade rates among proficient readers. These differences point to distinct reading strategies and cognitive processing patterns between genders.

Taken together, these studies highlight consistent gender-based patterns in visual attention, cognitive load, and learning strategies across a range of educational settings. These findings collectively underscore the importance of adaptive educational tools, especially those using AI and eye-tracking, to account for gender-specific learning behaviours and attentional patterns. This means that a project such as EYE-TEACH should consider, within the applicable ethical data collection boundaries, whether gender should be included as an input personal characteristic. This could allow for designing AI-driven systems that tailor instructional support and interface elements to how different genders engage with learning materials,

promoting more personalised and effective learning experiences that help close gender gaps in education.

5. Integrated Gender Equality Measures

To effectively integrate gender and intersectionality into the project's design, EYE-TEACH will apply a coherent set of gender-responsive methodologies, selected based on best practices in inclusive research and digital education (Mihajlović Trbovc & Hofman, 2015).

5.1 Balanced Participation

We will actively promote fair representation of women, men, and gender-diverse individuals across research teams, advisory boards, stakeholder groups, and co-creation activities. Transparent and unbiased selection procedures will be applied to prevent exclusion, with gender balance targets set and periodically reviewed to guide improvement.

5.2 Gender-Sensitive Research and Data Practices

All research and data-related activities will:

- Integrate gender considerations across all stages of research, including problem framing, hypothesis development, measurement, and reporting.
- Disaggregate all data by sex and self-identified gender, including non-binary and transgender identities.
- Use inclusive survey tools that allow participants to self-identify beyond binary categories.
- Ensure all survey instruments and research tools use inclusive language and respect participants' self-identification, using APA Inclusive Language Guide as a reference (American Psychological Association, 2023).

5.3 Inclusive Co-Creation and Stakeholder Engagement

We will engage stakeholders of different genders and backgrounds in developing research instruments, protocols, and outputs. This participatory approach ensures that diverse lived experiences inform the design of EYE-TEACH tools, making them more relevant, inclusive, and equitable.

5.4 Critical Review of AI and Eye-Tracking Models

Existing standards and models used in AI and eye-tracking technologies will be critically examined for embedded gender or cultural bias. Where necessary, revised frameworks will be proposed to improve fairness and reduce the risk of reinforcing systemic inequalities.

5.5 Inclusive Communication, Visual Representation, and Accessibility

All project materials, both internal and external, will use gender-inclusive and non-stereotypical language. All content will be selected to reflect diversity in terms of gender identity, ethnicity, age, and ability, avoiding the reinforcement of bias or exclusion. These measures ensure that EYE-TEACH's activities are inclusive, responsible, and aligned with Horizon Europe's ethics and values.

Additionally, all digital materials will comply with recognized accessibility standards (such as WCAG), making them usable by individuals with disabilities and compatible with assistive technologies. These measures will contribute to responsible AI development and inclusive educational innovation, consistent with EYE-TEACH's overarching principles of equity and inclusion.

5.5.1 Language

In our use of **language**, we will:

- Consistently apply gender-neutral and inclusive language in all communications.
- Avoid assumptions about individuals' identities, roles, or relationships based on gender.
- Offer inclusive response options (e.g. "woman, man, non-binary, prefer not to say") in all data collection instruments.
- Use person-first terminology (e.g. "person with a disability" instead of "disabled person") to emphasise respect and dignity.

Terminology to use	Terminology to avoid
<p>Gender-neutral language that avoids any reference to gender or sex, eliminating stereotypes and taking a more inclusive approach. For example:</p>	<p>Language that reinforces a gender binary or excludes women and/or gender-diverse individuals. For example:</p>
<p>"Webinar participants will be selected on a first-come, first-serve basis. <i>They</i> will be contacted by the EYE-TEACH team 3 days prior to the event to confirm their attendance".</p>	<p>"Participants will be selected on a first-come, first-serve basis. <i>He/she</i> will be contacted by the EYE-TEACH team 3 days prior to the event to confirm their attendance".</p>
<p>"EYE-TEACH and its activities employ a gender mainstreaming perspective, seeking equal and equitable participation of <i>all</i> individuals".</p>	<p>"EYE-TEACH and its activities employ a gender mainstreaming perspective, seeking equal and equitable participation of <i>both men and women</i>".</p>
<p>"Our project team is proud to include members across a spectrum of gender identities, ensuring diverse</p>	<p>"Our project team is proud to have equal numbers of men and women."</p>

perspectives.”

Avoid mentioning gender unnecessarily when referring to occupations. Highlighting gender can reinforce stereotypes by implying that a profession is typically associated with one gender. For example, terms like ‘female chairman’, or ‘chairwoman’ suggest that chairs are usually male, whereas the neutral term ‘chair’ applies to all. Similarly, avoid needlessly gendered terms like ‘headmaster’ and ‘headmistress’ and use the neutral ‘school principal’ instead.

Further avoid using ‘he’, ‘himself’, ‘his’, ‘man’ as the default abstract term for an individual.

Do not make assumptions about a person's religious or other beliefs. Use terms such as ‘first name’ ‘forename’ or ‘given name’ rather than ‘Christian name’.

Use person-first, neutral language when referring to vulnerable or disadvantaged groups or persons with disabilities. Put the person before their impairment. Language to use:

Person with a disability

Other people

Person with visual impairment

Person with autism

Person with a physical disability

Wheelchair bound,

Do not use disabilities or disadvantages as a defining characteristics – it is just one of several aspects of the person. Language to avoid:

Disabled person

Normal person, able-bodied

Visually impaired

Autistic

handicapped person

Person who uses a wheelchair,

Avoid phrases like ‘suffers from’ and passive ‘victim’ words.

Avoid terms that define the disability as a limitation.

5.5.2 Visual Representation

When it comes to **visual representation**, we will:

- Use images and graphics that reflect diversity – so as to ensure an inclusive approach with regards to gender, the primary scope of this Action Plan, but also other factors such as age, ethnicity, and ability.
- Challenge gender norms & avoid stereotypical or tokenistic portrayals (e.g., women only in caregiving or teaching roles, men only in technical settings).
- Strive for balanced representation of all genders across materials and platforms.
- Promote visual content that aligns with the values of inclusion, equity, and non-discrimination.

5.6 Monitoring and Evaluation

The gender dimension of EYE-TEACH will be regularly monitored and evaluated as part of the project's internal reporting processes. This will be facilitated by appointing a representative from within the EYE-TEACH team to act in a similar capacity to a Gender Equality Officer within an institution, but for the sole purposes of the project.

The Gender Equality Officer:

- Ensures that the measures of the EYE-TEACH Gender Action Plan are communicated internally within the consortium and made externally publicly accessible;
- Monitors implementation of the Gender Action Plan to ensure that the actions outlined are adhered to across the board, and prompting Work Package and Task leaders to integrate a gender dimension into their work as outlined above;
- Serves as a sounding board for consortium members when queries or uncertainties arise relating to inclusion.

For this purpose, the Gender Equality Officer for EYE-TEACH is Ms Rebecca Zammit (Head of EU Projects, AcrossLimits).

The project team, including the Gender Officer and relevant Work Package leaders, will ensure that gender equality, inclusivity, and accessible communication are

systematically monitored throughout the project lifecycle. This will include periodic reflection on:

- Implementation of gender-sensitive research and data practices
- Inclusiveness of stakeholder engagement
- Fair and respectful representation in communication and dissemination
- Accessibility compliance of all materials

Findings will be documented in project reports to ensure accountability and inform continuous improvement.

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