



Educational toolkits to help fight gender stereotypes based on the example of the transport sector

Executive summary of the final study report on the development of the toolkits

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Executive summary

Purpose and scope of the study

Although women's participation in the labour market has been increasing in all sectors across the European Union (EU), the transport sector remains highly gender imbalanced and segregated. In the transport sector, women account for as few as 22 % of workers and are overrepresented in service-related and administrative jobs¹.

Gender stereotypes are among the main reasons for this imbalance and appear to affect children's aspirations from as early as five years old², with boys often showing greater interest in traditionally male-dominated professions and girls in nurturing and caring-related roles. These trends persist into adulthood and significantly impact young people's subject choices and awareness of and interest in particular careers³.

Challenging gender stereotypes throughout the education cycle is key to broadening individual aspirations and choices and to reducing gender imbalances in other spheres of life, such as employment. Following the efforts of the European Commission to challenge gender stereotypes, as set out in the EU Gender Equality Strategy⁴, the European Commission's Directorate-General for Mobility and Transport commissioned the study 'Educational toolkits to fight gender stereotypes based on the example of the transport sector' (MOVE/B5/2019-284).

The objective of this study was to **develop two educational toolkits** (one for primary schools and one for secondary schools) that will help teachers organise discussions in class to effectively address gender stereotypes, based on the example of the transport sector. The toolkits can be found under the following references:

- European Commission, Educational toolkit to help fight gender stereotypes in primary school: Challenging learners to discover a world of opportunities based on the example of the transport sector, Luxembourg: Publications Office of the European Union, 2021, DOI: 10.2832/27413.
- European Commission, Educational toolkit to help fight gender stereotypes in secondary school: Challenging learners to discover a world of opportunities based on the example of the transport sector, Luxembourg: Publications Office of the European Union, 2021, DOI: 10.2832/283111.

The toolkits are available in 24 languages, for use in all EU Member States. Their main purpose is to **help young people understand that occupations are not reserved for a particular gender** while learning about the transport sector as a career option for anyone.

Methodological approach

The study was organised into seven consecutive tasks and aimed to deliver impact through the creation of a product (the two toolkits) for educational practice. Tasks 1 to 3 reviewed

¹ Aggregate data for 2018 for the EU-27; Data taken from Eurostat; Employees by sex, age and economic activity (from 2008 onwards, NACE Rev. 2) - 1 000 (Ifsa_eegan2).

² Martin, C. L. and Ruble, D., 'Children's search for gender cues: Cognitive perspectives on gender development' *Current Directions in Psychological Science*, Vol. 13, No 2, 2004, 67-70., p. 67.

³ European Institute for Gender Equality, 'Study and work in the EU: Set apart by gender: Report', Vilnius, 2018. Retrieved from: <https://eige.europa.eu/publications/study-and-work-eu-set-apart-gender-report>.

⁴ European Commission, *A union of equality: Gender equality strategy 2020-2025*, COM(2020) 152 final, Brussels, 2020a. Retrieved from: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0152>.

and presented an overview of existing educational toolkits, materials addressing gender stereotypes in transport and information on current and future occupations in the transport sector. This input directly informed the development of the toolkits' main messages, the pedagogical approach in Task 4 and the drafting of the full toolkits as part of Task 5. Task 6 involved testing the toolkits in primary and secondary schools and Task 7 concerned their finalisation, including their translation into all official EU languages and drawing up a dissemination plan.

The following research tools were used to provide the input to the content of the toolkits:

- desk research to identify, gather and analyse data, information and material from secondary sources;
- two surveys to validate and supplement the desk research, including:
 - a survey of educational stakeholders (42 complete responses from educational practitioners such as teachers, teacher trainers and educators);
 - a survey of transport stakeholders (43 complete responses from stakeholders of all transport modes — including rail, road, air and waterborne transport — and logistics and storage).
- 22 interviews with educational and transport stakeholders to validate and supplement the desk research and to gather feedback on the draft toolkits;
- pre- and post-lesson questionnaires and interviews to test the toolkits in primary and secondary schools in five EU Member States (Austria, Finland, Hungary, Lithuania and Spain) in the language of instruction.

Tasks 1 and 2: Reviewing existing educational toolkits and material addressing gender stereotypes in transport

The study team undertook a rapid review of existing educational toolkits and teaching materials that address gender stereotypes, aimed at primary and secondary school teachers, and freely available online material that addresses gender stereotypes in transport. The review showed that transport does not feature heavily in educational materials, but gender features to some degree in transport materials. Overall, these resources often directly informed the development of the toolkits and enriched their content. Annotated overviews of the available materials are provided in Annex 3 and 4.

To collect additional information and validate the desk research findings, the study team consulted educational stakeholders (e.g. teachers, teacher trainers and educators) in the form of a survey programme. The stakeholders indicated they would find a toolkit on gender stereotypes especially useful if it offered concrete, ready-to-do activities (e.g. full exercises, group activities) and tools for student engagement (e.g. games, worksheets, videos, press cuttings). Group activities, small group discussions and reflective exercises would be the most appreciated methods, while audio-visual tools and materials, digital tools and applications, and lesson plans would be the type of tools that educational practitioners would find most useful in an educational toolkit addressing gender stereotypes.

Task 3: Understanding current and future occupations in the transport sector

In parallel, the study team conducted a rapid review of the existing literature on current and future occupations in the transport sector and engaged sector stakeholders via a survey

programme and a series of interviews to validate the desk research findings and gather further information.

The findings show that the transport and mobility matter to everyone. The sector is a crucial part of the society and economy, enabling access to goods and services to citizens and businesses in the EU and its trading partners. The transport and storage sector employs around 5 % of the EU workforce, or as many as 10 million persons. Almost half of those employed in the transport and storage sector in the EU in 2018 worked in land transport, which includes rail and road transport. The transport and storage sector in the EU is, however, marked by notable gender imbalance: among its total workforce, only 22 % are women⁵, and mostly in administrative and clerical roles.

Women's low participation in transport sector employment and the types of roles they occupy is due to several different factors. Historically, many jobs in transport entailed poor working conditions. With technological advancements and the expansion of opportunities in different transport subsectors, this is often no longer true. However, some occupations in transport (e.g. long-distance drivers) still require employees to spend a significant amount of time away from home, and the working hours and conditions — including inflexible shift patterns — are often unattractive to women⁶. The masculine work culture and environment, sexual harassment and violence commonly experienced by transport workers are all deterrents to women⁷.

However, the persistent underrepresentation of women in the transport sector is, to a considerable degree, also related to gender stereotyping. Gender stereotyping, which shapes the perception of which jobs are suitable for women and which for men, starts at a young age, influences educational and career choices and prevents women from entering occupations in the transport sector. Although the retention of women in the transport sector is primarily affected by harassment and lack of work-life balance, gender stereotyping, and the low visibility of women who work in the transport sector may exacerbate these issues by making women feel unwelcome when they enter into positions historically occupied by men⁸.

Although women are underrepresented in all subsectors of transport, there are considerable differences between transport subsectors – land, air, waterborne transport and warehousing and logistics. For example, in 2018, around 15 % of employees in land transport were women, compared to close to half of the employees in the air transport are women. Considerable differences in gender balance also exist *within* the subsectors of the transport sector. Specifically, although the highest gender balance is observed in interurban passenger rail transport, only 22 % of employees are women. Freight transport by road and removal services has the lowest proportion of women employees, at just 11 %.

⁵ European Commission, *Sustainable and smart mobility strategy: Putting European transport on track for the future*, COM(2020) 789 final, Brussels, 2020b. Retrieved from: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2020:789:FIN>.

⁶ European Transport Workers' Federation, *International Women's Day 2020: Making the transport sector fit for women workers*, Brussels, 2020. Retrieved from: www.etf-europe.org/international-womens-day-2020-making-the-transport-sector-fit-for-women-workers.

⁷ Wright, T., *Gender and sexuality in male-dominated occupations: Women workers in construction and transport*, Palgrave Macmillan, Basingstoke, 2016; Turnbull, P. 'Promoting the employment of women in the transport sector: Obstacles and policy options', Working Paper No 298, International Labour Office, Geneva, 2013.

⁸ Wright, T., *The impact of the future of work for women in public transport*. International Transport Workers' Federation, London, 2019. Retrieved from: www.itfglobal.org/en/reports-publications/impact-future-work-women-in-public-transport.

The key trends affecting employment in transport are greater use of alternative fuels⁹ and the development and integration of new technology, in particular, the automation of vehicles and infrastructure, the maintenance of automated systems, and the development of new digital services and digital user interfaces for customers and equipment operators. These trends are already affecting the transportation of people and freight, and the transport labour force, but the introduction and adoption of new technology is expected to be gradual and sector-specific¹⁰. Advanced economies are currently in the algorithmic and augmentation waves of automation¹¹, and the most affected jobs are those that include simple computational tasks and other repeatable and routine tasks. In the transport sector, this means things like ticket sales and checking, roles traditionally occupied by women, but also jobs in warehousing where robots are increasingly being used to move goods.

Jobs in transport will be even more significantly affected by the autonomous wave of automation, projected to come to maturity from 2030, as driving occupations will be lost due to fully autonomous vehicles and robots. The greater use of technology and the transition to greener and sustainable transportation bring forth changes in occupations which the labour force needs to adapt to. However, it is likely that in the future, more of the current occupations in transport will change and include new tasks, rather than being lost completely¹².

According to the consulted stakeholders, the greatest demand for transport labour force is going to be in the area of software development and maintenance of digital and automated systems. These occupations also have the highest risk of a significant gender imbalance in the future, if not appropriately addressed. The transport sector requires highly skilled labour force, particularly in the area of software development and maintenance of digital and automated systems, which across not only transport but also other economic sectors are occupations traditionally dominated by men.

Task 4: Identifying the main messages and designing the pedagogical approach

Based on the study findings, the study team identified key design principles, main messages and pedagogical approach, the draft structure and suggested learning pathways of the toolkits that would guide the teachers along the main concepts explored: gender stereotypes, work and transport.

The first drafts of the toolkits were reviewed by 10 stakeholders, who provided feedback and suggestions for further improvement.

⁹ Skillful Project, *Future scenarios on skills and competences required by the transport sector in the short, mid and long-term*, Brussels, 2017. Retrieved from: <http://skillfulproject.eu/ajax/DownloadHandlerFM.php/downloadFile?id=14141>.

¹⁰ World Maritime University, *Transport 2040: Automation, technology, employment — the future of work*. Report No 58, Malmö, 2019. Retrieved from: https://commons.wmu.se/lib_reports/58.

¹¹ PwC — PricewaterhouseCoopers, *Will robots really steal our jobs? An international analysis of the potential long-term impact of automation*, London, 2018. Retrieved from: www.pwc.co.uk/economic-services/assets/international-impact-of-automation-feb-2018.pdf.

¹² European Commission, *Automation in transport: how does it affect the labour force?* Background paper, Brussels, 2018. Retrieved from: <https://ec.europa.eu/transport/sites/transport/files/2018-11-20-automation-in-transport-background.pdf>.

Messages related to debunking gender stereotypes

- Stereotypical expectations based on socially fixed norms for boys and girls are a root cause of gender inequality. They affect self-perception, well-being and how we interact with others and have a strong influence on whether and how individuals participate in education, training and the world of work.
- Gender stereotypes have a negative impact on both girls and boys as they limit individual aspirations, choices and freedom. In school, gender stereotypes strongly affect a young person's classroom experience, preferences for certain disciplines and overall perception of their own abilities.
- Gender stereotypes often combine with other stereotypes, such as those based on race or ethnic origin, religion or belief, disability, age or sexual orientation.
- Assumptions about gender may be conscious or unconscious and can result in groups being treated differently to one another.
- Addressing gender stereotypes throughout the education cycle is key to enabling children to have equal opportunities independent of their gender. This includes examining the norms, values and beliefs unknowingly conveyed in the classroom, in the social environment (*hidden curriculum*), and in what learners *do not* have the opportunity to learn (*null curriculum*).
- Challenging gender stereotypes in school can help to reduce gender imbalances in other spheres of life, such as at home or in the workplace.
- Providing girls and boys with new role models has a positive impact on making the best use of their potential.
- Out-of-school and family contexts are often rich in implicit messages related to gender; teachers have a responsibility to make the implications of such messages visible and to challenge them.

Messages related to the importance of the transport sector

- Mobility and transport matters to us all. From daily commuting to work or school, from visiting family and friends to leisure and tourism, to the proper functioning of global supply chains that transport goods for commerce and industrial production, mobility is a critical enabler of our economic and social life.
- Free movement of people and goods across its internal borders is a fundamental freedom of the EU and its single market. Travelling in the EU has led to greater cohesion and a strengthened European identity.
- As the second-largest area of expenditure for European households, the transport sector contributes 5 % to European GDP and directly employs 10 million workers.
- The transport sector is bigger and wider than young people perceive it to be, especially in the daily 'backstage' organisational effort to provide services.
- The greatest challenge facing the transport sector is the need to significantly reduce its emissions and become more sustainable. Changes in the sector, in particular those relating to automation and digitalisation, are creating new challenges and presenting new opportunities.
- Some parts of the transport sector are expected to grow and employ more workers in the future. These will need highly skilled workers with competences in engineering and technology.

The pedagogical principles that underlie the toolkits are:

- **21st century skills.** The toolkits aim to develop in learners the key competences for lifelong learning needed for personal fulfilment, a healthy and sustainable lifestyle, employability, active citizenship and social inclusion¹³.
- **Active methodologies.** The toolkits make learners the centre of their own learning¹⁴.
- **Cooperative learning.** The goal is not individual success: success is shared as it depends on each member of the learning community contributing to it.
- **Learning to learn.** By visible thinking routines, the aim is to help learners better understand what kind of learners they are and how to improve their intrinsic learning capacity.
- **Experiential learning.** The toolkits follow Kolb and Kolb's experiential learning cycle¹⁵. In this model, a direct experience is provided by the teacher and this experience is followed by individual or group reflections (metacognitive activity). **Assessment.** The toolkits provide 'light' assessment tools that can be applied at different stages in the activities to help teachers and learners in their teaching and learning processes.

Task 5: Drafting the toolkits

The study team drafted the two toolkits according to the following functionalities: user-friendly interface; appealing design; appropriate length; clarity of proposed actions; and practical value of provided resources and interdisciplinary scope.

Each toolkit contains seven toolsets, four of which (Toolsets 1, 2, 6 and 7) are the same for both toolkits. The common chapters provide teachers with background information on the toolkit, self-assessment tools and resources to explore and further develop the learning pathways. Toolsets 3, 4 and 5 contain activities adapted to the learner group (that is, primary or secondary school learners). The primary school toolkit presents **22 different activities** to do in class with learners, and **25 activities** in the secondary school toolkit.

Although the toolkits offer a flexible approach for teachers and learners to pursue their specific interests, the toolkits also provide **eight suggested learning pathways**. These pathways vary in length and follow an internal coherence that guide the teachers to explore the key concepts: gender stereotypes, work and transport.

Task 6: Testing the two draft toolkits in schools

In collaboration with national researchers and teachers, the study team tested the two draft toolkits in primary and secondary schools simultaneously in five EU Member States (Austria, Finland, Hungary, Lithuania and Spain) in the language of instruction, between December 2020 and January 2021. Based on the information collected in the testing sessions, the national experts analysed the data and provided the study team with a summary of the **testing lessons' results** for each country.

¹³ In line with the widely adopted competence-based approaches of the European education systems and the Council Recommendation of 22 May 2018 on key competences for lifelong learning. 2018/C 189/01. Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2018.189.01.0001.01.ENG.

¹⁴ Barnes, D., *Active learning*. Leeds University TVEI Support Project, Leeds (UK), 1989.

¹⁵ Kolb, A. and Kolb, D., 'Eight important things to know about the experiential learning cycle', *Australian Educational Leader*, Vol. 40, No 3, 2018.

Task 7: Finalising the toolkits

The study team finalised the toolkits, taking into account teacher feedback from testing. The finalisation phase included a quality assurance process, covering language editing and proofreading, and **translation** into the 23 remaining EU official languages, besides English. The final visual presentation of the toolkits was developed by an **illustrator** and **graphic designers**. The study team also prepared a **dissemination plan** (see Annex 2). This dissemination plan supports the European Commission in ensuring that teachers and educators, and all interested stakeholders, learn about the release of the toolkits, discover their purpose and utility and encourage their use.

Next steps

Three main suggestions to scale up the toolkits emerged from the toolkits' development process, primarily in the context where many students have been learning from home due to the novel coronavirus 2019 (COVID-19) pandemic. The toolkit's testing suggested that many of the activities could be adapted for online teaching and into a gamified website where learners could explore the material independently. Similarly, in a context where many students are learning from home, some stakeholders highlighted the need to increase parental involvement and adapt toolkit activities to be conducted with the parents. Finally, stakeholders recommended the development of training modules for teachers to facilitate the teachers' use of the toolkits as it would reduce the individual preparation time.

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