

PROMOTING EDUCATION AND CAREERS IN LOGISTICS THROUGH AN ONLINE PLATFORM CENTRED ON THE NEEDS OF TEACHERS AND STUDENTS

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Abstract

The logistics industry is undergoing considerable transformation due to three major trends: digitalisation, sustainability, and internationalisation. This requires employees to demonstrate not only the capacity to manage increasingly challenging tasks, but also a repertoire of subject-specific and interdisciplinary competencies, often referred to as "hybrid skills". However, the logistics industry is currently facing challenges due to a shortage of skilled workers and the significant need to motivate young people to pursue careers in the sector. Since 2016, the web platform "RETrans" offers quality-assured, free of charge information and teaching materials on transport logistics, primarily targeting teachers and aiming to raise interest for jobs in the logistics industry. The need to update the RETrans platform is driven by two key factors. Firstly, there have been significant changes in the logistics industry, which have necessitated an update to the platform to ensure it remains relevant. Secondly, the platform has specific potential for improvements to ensure its success in the long run. The present paper sets forth the findings of a thorough evaluation of the RETrans-platform with two objectives: firstly, to enhance the platform's quality and user base, and, secondly, to discern prospective directions that centre on ensuring its relevance in the future. The evaluation comprises an online survey among school students, a workshop with didactics and e-learning experts, workshops with teachers and logisticians, as well as a focus group with university students in logistics. The findings indicate that overall RETrans offers trustworthy information and excellent materials and some adaptations can even further improve its performance. Teaching materials should contain more didactic information, such as intended learning objectives and competencies, application scenarios, and specific teaching methods, to facilitate integration into specific curricula. There is also a lack of teaching materials that promote self-organised learning. Furthermore, the evaluation identifies room for improvements regarding the website's usability and aesthetics and reveals a strong need to include future-oriented topics such as sustainability, digitalisation, and internationalisation to address the dynamic competence requirements of the sector. The formulated recommendations act as guiding principles for the platform's redesign and may inspire similar initiatives in fields beyond logistics.

Keywords: *Logistics, skills shortage, promotion of careers, RETrans, RETrans4Future.*

1. Introduction

The transport industry is currently influenced by a complex interplay of environmental, technological, and social factors (Dorantes & Allen, 2024). The push for decarbonization and the move toward cleaner technologies (European Commission, 2025) are major drivers of change, as for instance the transition to electric vehicles. Whilst these trends have the potential to enhance efficiency, they also carry a risk of leading to job losses in low-skilled sectors (Dorantes & Allen, 2024). Actually, the logistics industry is confronted with a global shortage of qualified personnel at all occupational levels. The severity of this shortage varies significantly between regions and job categories: in developing and emerging regions, the most acute shortage is at the managerial level, whereas in developed regions, the primary challenge is finding enough staff for operational roles (McKinnon, Flöthmann, Hoberg, & Busch, 2017). It is reasonable to assume that the logistics industry will continue to depend heavily on the skills and abilities of its workforce. Therefore, the performance of companies and countries in this sector is significantly influenced by the quantity and quality of the available workforce (McKinnon, Hoberg, Petersen & Busch, 2024). Consequently, the industry requires employees to demonstrate not only the

capacity to manage increasingly challenging tasks, but also a repertoire of subject-specific and interdisciplinary competencies, often referred to as "hybrid skills" (Kohl, 2023). In view of this, the logistics industry is currently facing the significant challenge of motivating young people to pursue careers in the sector (Eitler & Schodl, 2023).

In order to enhance the appeal of the logistics and transport sector to young people, according to McKinnon, Flöthmann, Hoberg & Busch (2017) it is recommended that the sector emphasises its crucial role in addressing its comparatively low prestige. Logistics companies could adjust salaries and benefits (Crotty & Morgan, 2023) to compete with other sectors, such as manufacturing or finance. Improving the work environment and the work-life balance could also make the industry more attractive to potential employees (Ndiango, Gabriel, & Changelima, 2024). Another option is to raise awareness and eliminate prejudice, with schools playing an important role in this. For instance, schools can incorporate logistics-related projects into subjects such as mathematics or geography, and organise field excursions to high-tech facilities, such as automated warehouses or air freight hubs, to inspire students (McKinnon, Flöthmann, Hoberg & Busch, 2017).

Pursuing this idea, the Austrian Federal Ministry for Climate Protection, Environment, Energy, Mobility, Innovation and Technology has established the "Research and Education on Transport Logistics" (RETrans) competence centre in cooperation with relevant stakeholders from industry, research and the public sector (RETrans, 2026). The focus is on a web platform offering quality-assured, freely accessible information and teaching materials on the subject of transport logistics. This comprehensive offering has been available since 2016 and proved to be very successfully. However, significant changes in the logistics industry require an update to the platform to ensure its continued relevance. Moreover, several areas for improvement have been identified that are crucial to the platform's future success.

The remainder of the paper is structured as follows: The second section outlines the objectives and the methods that were employed in this research. The third section presents the results of the evaluation of the web platform RETrans, while the fourth section of this paper gives recommendations for the redesign of the platform.

2. Objectives and methods

The evaluation pursues two main objectives. Firstly, it aims to gain insights into how to improve the quality and user base of the platform. Secondly, it seeks to identify approaches to ensure the platform's continued relevance.

The evaluation follows a mixed methods approach, integrating both quantitative and qualitative research methods within a single study (McLeod, 2024). It comprises an online survey of school students, a workshop with didactics and e-learning experts, workshops with teachers and logisticians, as well as a focus group with university students. The online survey followed the "Toolbox for Continuous Website Evaluation and Quality Assurance" (Thielsch & Salaschek, 2017), which allows for a reliable assessment of user experience. The workshop involving didactics and e-learning experts, representing the fields of higher education didactics, e-learning, and digitalization, utilized a structured framework designed to assess the platform across content-related, functional, design-oriented, and didactic aspects. The workshops with teachers and logistics experts were designed to reflect upon evaluation results from the survey and expand it through practice-oriented feedback. The workshop with teachers featured representatives from various school types and the workshop with logistics experts included representatives from various sectors, like rail logistics, retail logistics, supply chain management, and consulting. The focus group involved 12 logistics students who worked on three central questions: how they became aware of logistics, the reasons why they chose a logistics degree programme, and potential measures to increase interest in logistics.

3. Results

3.1. Survey among school students

A survey of 129 school students with various educational backgrounds focused on seven constructs: first impression, overall impression, perception of content, usability, visual aesthetics, willingness to revisit, and willingness to recommend the site (Thielsch & Salaschek, 2017). The school students emphasised the high quality and practical value of the transport and logistics information, as well as its accessibility and clarity. However, the "liking" factor — whether they found the content enjoyable — received comparatively lower scores, indicating a need for more engaging presentation formats. Furthermore, the platform received an average rating in terms of usability and aesthetics. These results suggest that some optimisation is required to meet the high expectations of "digital native" users. Despite this critique, the initial and overall impressions were favourable. The school students expressed a clear willingness to revisit the platform and recommend it to others.

Through open-ended questions, the participants provided detailed feedback on the platform's practical applicability. The school students appreciated the simple and information-rich structure, the clear overview of topics, and the variety of media, including videos, games, and exercises. Critical feedback focused on compatibility with mobile devices, specific colour choice, and difficulties in navigating to certain teaching materials. There has been a strong interest expressed in further content on the subjects of sustainability and ecological transformation, digitalisation and technological trends, the international dimension of logistics, and global supply chain management. There has also been interest in innovations and future career opportunities in the logistics sector.

In summary, the evaluation confirms that, although RETrans provides high-quality, very trustworthy educational content, future development requires the interface to be visually and functionally modernised. To enhance its appeal to young people, the platform should adopt a mobile-first approach and integrate more interactive, self-organised learning tools reflecting current megatrends in logistics, such as digitalisation and sustainability.

3.2. Workshop with experts in didactics and e-learning

In parallel with the school student survey, a structured expert evaluation was conducted by higher education specialists in didactics and e-learning to assess the RETrans platform across five core dimensions: transparency, content, didactics, usability, and aesthetics.

The experts noted that the landing page does not clearly define its target audience, and that the platform does not systematically differentiate its content according to educational levels. A key issue raised was the lack of advanced filtering options, i.e., users cannot filter materials by educational level or specific didactic methods. This limitation somewhat restricts the platform's usefulness for educators. The subpages of the platform offer a variety of logistic-related topics, including sustainability, digitalisation, and social challenges. However, these are often rather hidden due to the site's specific architecture. The experts recommended giving these industry-relevant megatrends greater prominence. Moreover, it has been noted that the majority of materials currently lack explicit learning objectives, assessment criteria and grading keys. This hinders their seamless integration into official school curricula. Experts have also identified the need of more resources to support modern instructional concepts, such as the "flipped classroom". It was recommended to add more interactive digital tools, like online quizzes, to encourage self-organized learning. In regard to the user interface, the main page was found to lack a search function, while the navigation between subpages was also described as not very intuitive.

The expert evaluation concludes that the RETrans platform offers an excellent repository of high-quality information but requires some adaption to ensure outstanding performance. Key recommendations include implementing a target-group-specific design, enhancing didactic metadata, and integrating interactive digital learning technologies to better support contemporary educational standards.

3.3. Workshops with teachers and logistics experts

Two workshops were conducted with teachers and logistics industry professionals to gather practice-oriented insights.

The workshop, which involved teachers from various secondary school types, aimed to identify how to effectively integrate logistics topics into the classroom. They emphasised that practical examples from the learners' own lives, such as a supply chain of an everyday product, are the most effective way to inspire students. The key thematic priorities identified were internationality, sustainability, and career opportunities, with a particular focus on attracting more young women to the field. There is a strong preference for compact, modular materials rather than overwhelming, comprehensive learning packages. In addition, materials designed for self-study were found to be more useful in modern classrooms than purely teacher-led instructions. Educators suggest game-based learning (e.g., business simulations, role-plays, and serious games) that allow students to experience real-world logistics problems.

Experts from the logistics sector offered recommendations on how to further strengthen the platform's impact. It was suggested that logistics should be highlighted as a society-relevant industry. Megatrends such as digitalisation, decarbonisation and global supply chain resilience should be covered in order to demonstrate the sector's innovation potential. Experts highlighted that a successful platform must create measurable value for all users. Therefore, students should gain relevant competences, teachers should receive high-quality, curriculum-aligned materials, and companies should benefit from an improved image of logistics. In terms of the competencies and skills required by the industry, it has been stated that general competencies, such as teamwork, communication and customer orientation, are gaining more significance than purely subject-specific logistics skills.

In conclusion, these workshops have emphasised the necessity to concentrate on interdisciplinary soft skills, interactive and modular teaching formats, and the industry's role in solving global challenges such as ensuring sustainability.

3.4. Focus group with logistics students

In order to meet the needs of young people when redesigning the RETrans platform, a focus group with twelve logistics students was conducted.

The students described the various ways in which they had first encountered the logistics sector. Most commonly they became aware through school activities, teachers, or specializations in vocational schools. Although traditional brochures were mentioned, it was concluded that modern digital channels were becoming an increasingly relevant tool for raising awareness.

The decision to pursue a degree or career in logistics was driven by a set of motive bundles. A key motivator is job security, underpinned by the understanding that logistics is a universal and essential field, even during periods of economic or political turbulence. Students are also attracted by the diversity of tasks and the wide range of career paths available. The potential to earn a high income and to progress into leadership roles are also key factors in the decision to pursue a career in logistics.

The participants proposed several innovative measures to improve the industry's image and attract young people. They recommended incorporating logistics into school curricula at an earlier stage, potentially as a compulsory element of business-related subjects, to foster an understanding of its importance to society. The focus group results also highlight a clear need for the industry to modernise its communication methods. Furthermore, students emphasised the importance of making logistics more tangible by providing practical experience and using gamification techniques, such as escape games, serious games, and virtual learning platforms.

4. Recommendations

The comprehensive evaluation of the RETrans platform involved various stakeholders and highlighted the platform's strengths, in particular the excellent quality and trustworthiness of the content offered. It also revealed some opportunities for structural and visual modernisation. Considering the presented findings, six specific design principles have been formulated and will be incorporated into the redesign of the existing platform:

(1) Focus on the "twin transition": The platform is required to evolve beyond conventional transport logistics, emphasising the ecological and digital transformation of the logistics sector. This includes new content modules on decarbonisation and digitalisation to attract those interested in these megatrends.

(2) Target-group-specific navigation structure: The platform should be organised into three distinctive sections to serve the needs of various target groups: "Learn" (educational materials), "Explore" (up-to-date information on latest trends and innovations), and "Make a difference" (career paths and role models).

(3) Modern user experience: To meet the expectations of "digital natives", a visual und functional overhaul of the user interface is required. This includes a mobile-first design, a central search function and professional filtering systems to ensure ease of use for both teachers and students.

(4) Didactic professionalization and modularity: Teaching materials have to include learning objectives, curriculum alignment, and other relevant metadata. Materials should be provided in the form of modular components to support various teaching and learning concepts.

(5) Career orientation: To address the industry's perceived image, the platform should feature a wide variety of job profiles and authentic role models. Showing the diverse opportunities available in the occupational field, rather than providing abstract information, will encourage young people to find out more about logistics.

(6) Maintaining the unique selling proposition: The redesigned platform must remain a freely accessible, scientifically grounded information hub. By collaborating with well-established institutions while maintaining a strict policy of impartiality, the platform upholds its reputation as a reliable source of information in Austria.

To summarise, the primary objectives of the "RETrans – Logistics4Future" project are centred on modernising the existing knowledge platform to attract a new generation of professionals and on addressing the significant changes within the industry. The start of the redesigned platform is scheduled for Spring 2026. The outlined approach to evaluating and improving the platform may inspire similar initiatives in other fields, not just logistics.

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