

**ANALYSIS OF THE LEARNING REQUIREMENTS OF LESS ADVANTAGED GROUPS ON THE ROMANIAN LEVEL**

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The paper provides an analysis of the learning requirements of less advantaged groups on the national level, as a task in the framework of Digital Fashion Erasmus+ project. The first part of the analysis focused on the various groups of students from the “Gheorghe Asachi” Technical University of Iași with special physical and social situations, who benefited from online courses, in the pandemic context. The second part of the analysis focused on nine textile companies that respond to a questionnaire of INCDTP regarding the facilities offered for less advantaged groups of workers. Persons with minor impairments and of other nationalities are supported and integrated into textile enterprises. Depending on the type of difficulty, including the emergency due to the pandemic, various support actions were provided by the textile and clothing enterprises. The educational materials of Erasmus+ DigitalFashion will be conceived in six European languages. Students and professionals in the field of textiles and clothing may benefit from multilingual educational materials, identification of technical terms, and a multicultural environment.

Keywords: online training, disadvantaged groups, textile industry.

## INTRODUCTION

Learning has positive benefits for individuals, communities, society, and the wider economy. Individuals face a range of situational, institutional, and dispositional barriers as they navigate learning opportunities (Pennacchia *et al.*, 2018). The most disadvantaged learners were more likely to describe the cumulative effect of multiple barriers to learning. The disadvantaged groups include persons with disabilities and health conditions, such as the visually impaired, hearing impaired, mobility impaired; single parents; ethnic minorities, migrants, as well as persons of other nationalities, who have difficulties adapting to the workplace (Johansson and Höjer, 2012). The pandemic left a mark on the whole world and generated a dramatic need for change and adaptation in any field (Kecojevic *et al.*, 2020). The shift from face-to-face to online teaching represented a big challenge for education institutions, and it's hard work to find solutions to continuing the courses (El-Soussi, 2022). People with a special social situation were disadvantaged in this period, more than in the pre-pandemic period (Raccanello *et al.*, 2022). Advances in computer-based education are seen as an effective way of remedying this situation by providing assistance and compensation for

learners with specific needs (Cinquin *et al.*, 2019). Online training offers a lot of benefits, such as flexible learning hours, distance learning, and multimedia support. In the last years, the design of e-learning environments was improved, to support students' emotional well-being and performance (Mayer, 2020). The paper presents the situation of the less advantaged group (students and workers) involved in the textile & clothing field and aims to evidence the need for training for people with disabilities, to support them with adequate instruments, including online training, as the objective of DigitalFashion Erasmus + European project.

### **DIGITAL FASHION ERASMUS + PROJECT**

The International Erasmus + Digital Fashion project aims to open the pathways for organizing Collaborative Online International Learning within partner institutions, other higher educational institutions, and industrial enterprises of common expertise and is addressed to higher education institution (HEI) students and young professionals, both in the textile field. Among them, special attention is given to people from disadvantaged groups, including those with disabilities. The project will create a collaborative international online teaching platform (COIL) that offers advantages to distance learning, facilitating the access of disadvantaged learners across national borders. The proposed training platform is a software system with non-discriminatory interfaces for users, which promotes equal opportunities and eliminates language barriers, being translated into six languages (English, French, Portuguese, Slovenian, Romanian, and Dutch). The platform that will be created within the project will contain a series of specific elements in a synergic way, as follows: *3D human, 3D garments, fabric, and fashion databases; Fashion and garment-making rules; Basic search engine; Online learning module (methods, process, content, and cases); Testing and evaluation; Websites of the project and partners institutions; User interface;*

In this regard, the "Gheorghe Asachi" Technical University of Ia i (TUIASI) has analyzed the situation of less advantaged groups of students within the university. The National Research & Development Institute of Textiles and Leather (INCDTP) has analyzed the situation of the less advantaged groups among the employees of the textile industry, by questioning nine Textile & Clothing enterprises in this regard. In comparison, the situation from partner countries Portugal and Slovenia regarding the less advantaged group of textile students and workers is presented.

### **THE CONDITIONS OF STUDY FOR LESS ADVANTAGED GROUPS OF STUDENTS AND WORKERS**

In TUIASI, there are enrolled 13000 (bachelor's, master and doctoral studies) students regardless of their race, religion, nationality, or state of health. Anyway, in the admittance process, future students are asked for a medical exam sheet. The family doctor or the TUIASI doctor just confirms that the candidate can follow the studies. These do not exclude the admission of less advantaged people. The Faculty of Industrial Design and Business Management (DIMA) has about 1000 students.

In TUIASI, 6 different types of less advantaged groups were identified and estimated as percentages, in Table 1.

Table 1. The less advantaged groups at TUIASI

From abroad	Different ethnicity	Learning foreign languages
~ 5% (increasing year by year)	~1% Romany ethnicity	64 specializations learning in a foreign language
With special conditions	With impairments	With socio-economic problems
~ 5% of mothers/fathers	~ 1% - with speech and movement impairments	200 places for rural areas (2020/2021 academic year)

At the University of Maribor, there are comparative data in the last 3 years, of the students from the less advantaged group, presented in Table 2. From their total, in 2022, people with visual, hearing, and movement impairments represent 6.03%, up 41.5% compared to 2020. People with special status (parents, top athletes, recognized artists, long-term ill) represent 2022 93.96% of the total, a slight decrease of almost 1% compared to 2020. At the Faculty of Mechanical Engineering from University of Maribor, students with impairments represent ~11% in 2022, a decrease of almost 50% compared to 2020. People with special status represent almost 89% in 2022, an increase of 10% compared to 2020.

Table 2. The less advantaged groups at University of Maribor

Impairments (hearing, visual, movement)			Special status (mother/father, top athletes, recognized artists, long-term ill)		
2019/2020	2020/2021	2021/2022	2019/2020	2020/2021	2021/2022
6	9	12	164	177	187

With 123 employees (54 researchers) INCDTP has single 2 persons with minor mobility impairments. According to internal rules, these persons received additional support of 15% of the salary.

CITEVE, Technological Centre for the Textile and Clothing Industries of Portugal has 147 employees and 3 are disabled which need integration measures in workplaces.

### Support Measurements for the Persons from the Less Advantaged Group

While in TUIASI, the support measurements concentrate on persons from abroad, especially from the Republic of Moldavia and Ukraine, of those with different ethnicity (e.g. Romany), with socio-economical problems (from rural areas), in Portugal, the emphasis is to disseminate and promote good practices in the disability area and to promote the international mobility of disabled students/teachers within Europe through the Erasmus+ Programme. More, there are measures for adopting Inclusive Signage and ColorADD Project – facilitating/providing an interpretation of information through universal signs and legends.

The Slovenian Association of Disabled Students with 212 members identified, for the adaptation, during the online courses, to the needs of students with disabilities including: “spotlight” feature that allows fixing video images of people who are actively involved in the delivery of the event (e.g., lip reading of the lecturer) and sign language interpreter for the students with hearing impairments; larger size and different styles of font and contrast in the color of the background and letters for the students with visual impairments and dyslexia.

Due to the good connections to the textile&clothing industry, INCDTP proposed to describe the support and training measures for persons with impairments in T&C

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enterprises. A survey with 6 questions was collected from 9 T&C enterprises, including the situation of the R&D institute itself, to assess the support and training measures of less advantaged groups within the T&C industry.

The first question was related to the type of disabilities of the employees, integrated within the working teams. Two enterprises out of 8 responded they do not have in their working teams people with disabilities (Fig. 1). A total number of 2 organizations each reported visual, hearing, and psychic impairments, while three organizations reported mobility impairments. Other impairments are presented in Fig. 2.

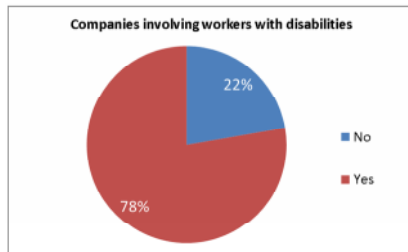


Figure 1. Companies involving workers with disabilities

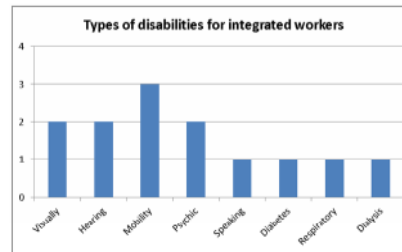


Figure 2. Types of disabilities for the integrated workers

As such, workers with minor disabilities are employed within the working teams of textile enterprises in 78% of the cases, with widespread types of impairments.

The second question was related to the support measures for workers with disabilities. The nine respondents pointed out some measures, presented in Fig 3. The following specific measures were also pointed out in Fig. 4.

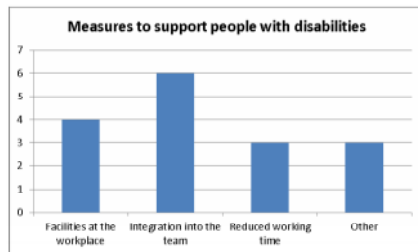


Figure 3. Some measures to support people with disabilities

Special leaves in case of health problems	Medical support inside the organization	Special bathroom facilities
Special team integration for psychic impairment	Team training for application of adequate communication system	Salary bonus of 15%
Sponsoring schools for children with disabilities		

Figure 4. Specific measures to support workers with disabilities

### *Tax Reduction for Workers with Disabilities*

In Romania, persons with disabilities are freed from paying income tax. Two enterprises have mentioned special measures in this regard: The first enterprise stated that customer loyalty is strengthened by communicating the support for workers with disabilities; the Second enterprise stated that workers with dialyzes benefit from the tax reduction.

### *Language Training and Support of Workers of Other Nationalities*

Out of the nine respondents, six enterprises do not employ workers of other nationalities. Of the rest of the three enterprises, two enterprises (22%) organize training courses in the Romanian language for support and integration of the workers (Fig. 5).

Other support measures for workers of other nationalities include logistics support, professional training courses, and consulting for integration (Fig. 6).



Figure 5. Language training of workers of other nationalities

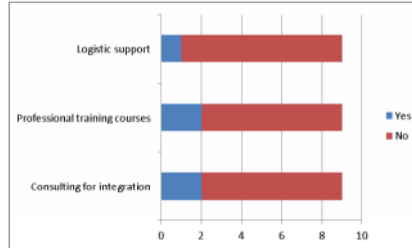


Figure 6. Other facilities for integration

*Telework on the Romanian National Level and for T&C Enterprises*

The second part of the survey analyses the measures taken by textile enterprises during the coronavirus pandemic.

According to a survey conducted by Genesis Property in February-March 2021, conducted on a total number of 1183 Internet users in Romania, 55% of the interviewed employees answered they are working either partially (17.3%) or exclusively (37.4%) from the location of the enterprise. 41% of the respondents have declared their office is safer, compared to the beginning of the pandemic, and are satisfied with the current work modality. Another 45% of the respondents reported their perception of the workplace within this context is neutral (Dobrescu, 2021).

The situation of telework in the T&C industry was assessed based on the survey conducted by INCDTP - Bucharest. The first question was related to the possibility of telework for the employees. Out of the nine respondents, only two textile & clothing enterprises and the research institute replied that partial telework was possible. Textiles being a manufacturing domain, where the employees have to work on machines, telework could be organized only in limited cases, with a focus on the administrative personnel of the enterprises (Fig. 7). The impossibility to organize telework for the manufacturing personnel was however accompanied by additional safety measures for the Coronavirus pandemic.

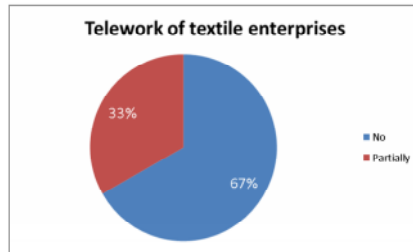


Figure 7. Telework of textile companies from Romania

INCDTP – Bucharest could also partially organize telework for researchers that worked on the analysis and interpretation of experimental data and research studies. However, the technicians had to be present at the workplace, to work with the testing equipment within the laboratories.

### *Additional Safety Measures for the Coronavirus Pandemic*

All of the nine interviewed textile and clothing enterprises provided additional safety measures for workers, such as masks and disinfectants, while three of them ensured a larger physical distance by reorganizing the workplace. Some of the other additional safety measures were: Providing medical leaves; Providing drugs; Free COVID-19 testing; Frequent disinfection of workplaces; Different time schedules; Doubling the transport capacity to the workplace.

### CONCLUSIONS

The situation of disadvantaged groups of students and workers in textiles was differently approached in the consortium countries of the Digital fashion Erasmus + project. In Romania, the two major education and training players, DIMA and INCDTP support less advantaged groups of students, especially those from abroad and with socio-economic problems. In Portugal and Slovenia, the emphasis is to disseminate and promote good practices in the disability area and to promote international mobilities and various technics to facilitate the interpretation of information through universal signs and legends.

Online training may provide support for both advantaged and disadvantaged groups of students and workers in the textile field. The disadvantaged groups of persons need special requirements and assistive technologies of online training. The training instruments provided by the DigitalFashion project are accessible for students and employees in textiles with minor impairments too. Students and workers with mobility impairment, which was reported as the most frequent impairment, may benefit from distance learning and flexible learning hours. Students and workers from abroad may benefit from the multilingual educational materials of DigitalFashion too. The virtual educational instruments envisaged by DigitalFashion will integrate less advantaged groups of persons through education and training into the textile community and the world of work.

### REFERENCES

- Cinquin, P.A., Guitton, P. and Sauz on, H. (2019), "Online e-learning and Cognitive Disabilities: A Systematic Review", *Computers and Education*, 130, 152–167, <https://doi.org/10.1016/j.compedu.2018.12.004>.
- Dobrescu, E.M. (2021), "Telework: Comparative Study" (in Romanian), *Geopolitica  ntre realitate  i emo ii,  ntre istorie  i mit*, available at: <https://corneliupivariu.com/telemunca-studiu-comparativ>.
- El-Soussi, A. (2022), "The Shift from Face-to-Face to Online Teaching Due to COVID-19: Its Impact on Higher Education Faculty's Professional Identity", *International Journal of Educational Research Open*, 3, 100139, <https://doi.org/10.1016/j.ijedro.2022.100139>.
- Johansson, H. and H jjer, I. (2012), "Education for Disadvantaged Groups – Structural and Individual Challenges", *Children and Youth Services Review*, 34(6), 1135-1142, <https://doi.org/10.1016/j.childyouth.2012.01.042>.
- Keckojevic, A., Basch, C.H., Sullivan, M. and Davi, N.K. (2020), "The Impact of the COVID-19 Epidemic on Mental Health of Undergraduate Students in New Jersey, Crosssectional Study", *PLoS One*, 15(9), e0239696, <https://doi.org/10.1371/journal.pone.0239696>.
- Pennacchia, J., Jones, E. and Aldrigde, F. (2018), "Barriers to Learning for Disadvantaged Groups, Report of Qualitative Findings", Department for Education, Publishing: Social Science in Government.
- Raccanello, D., Balbont n-Alvarado, R., da Silva Bezerra, D., Burro, R., Cheraghi, M., Dobrowolska, B., Fagbamigbe, A.F., Faris, M.E., Fran a, T., Gonz lez-Fern andez, B., Hall, R., Inasius, F., Kar, S.K., Ker zi , D., Laz nyi, K., Laz r, F., Machin-Mastromatteo, J.D., Mar oco, J., Marques, B.P., Mej a-Rodr guez, O., M endez Prado, S.M., Mishra, A., Mollica, C., Navarro Jim enez, S.G., Obadi , A., Mamun-ur-Rashid, M., Rav selj, D., Tatalovi Vorkapi , S., Toma evi , N., Uleanya, C., Umek, L., Vicentini, G., Yorulmaz,  ., Zamfir, A.-M. and Aristovnik, A. (2022), "Higher Education Students' Achievement Emotions and Their Antecedents in e-learning amid COVID-19 Pandemic: A Multi-Country Survey", *Learning and Instruction*, 80, 101629, <https://doi.org/10.1016/j.learninstruc.2022.101629>.