Intellectual Output 1

Instructional Design Process/ Audience and Content Analysis

TÜRKİYE ULUSAL AJANSI
TURKISH NATIONAL AGENCY

The Project is funded
by the European Union

1. Instructional Design Process, Audience and Content Analysis

The work performed during the first intellectual output of the project aimed to establish the basic instructional design process, audience, content analysis and the curriculum of the project outputs. To establish this, the Vir2TEX project has started by contacting stakeholders and identifying key points crucial in textile vocational training. An online questionnaire for the students/teachers and a semi-structured interview method was used for the rest of the stakeholders. Two different questionnaires were prepared; one of them for the lecturer's specialist in textile and the other one for students studying textile. The questionnaire was aimed to analyse the most effective content in developing effective learning materials of sustainable digital resources for textile education. The questions included in this questionnaire where the following:

Lecturer questionnaire:

- In which of your courses do you make your students practice in the textile laboratory or in the business environment? Please just write down the course names and weekly/semester practice hours. For example; Cotton Spinning course and 6 hours of practice per semester.
- Which machines do you use in the practical lessons and what kind of practical training could students do with the machines?
- How often do you use digital training materials such as video, picture, animation, cartoon, sound, presentation, simulation, software, social media materials, etc. in your lessons?
- How/where do you access the digital training materials you use in your lessons?
- What are the aspects of the digital education materials you use that need to be developed in the context of lectures?
- What kind of digital educational material to be developed for use in course applications do you think will help students better understand the subject technically?
- What are the subjects of your lessons have the most difficulty in understanding in textile technician education?

Students questionnaire:

- Do you have practice lessons in your textile education curriculum?
- Are the applications in the lessons sufficient for you to learn the subject?
- Are digital learning materials used in your courses?
- Are the digital learning materials used in applied courses sufficient?
- What kind of training materials are used in your practical lessons? For example, ribbon, yarn, etc.
- What types of machines are used in your hands-on lessons? For example, carding machine, draw frame etc.
- What are the subjects that you have the most difficulty comprehending in your textile education?
- What do you think are the parts of the digital education materials used in your lessons that are lacking in explaining the subjects and need to be improved?
- What kind of digital training material to be developed for use in course applications do you think will help you better understand the subject technically?

2. Lecturer Questionnaire Results

The textile education in TR could be classified in three groups. In the first group there are vocational high schools providing education in textile 4-year education period. These students are under 18 ages. After graduating from this school most of them choose the Textile Vocational Schools of Universities. In these schools they have 2-year education period. There are 34 different Universities Textile Vocational school in TR, two of them private and the rest is public school. Graduated textile technicians could continue their education with the textile engineering department in the university. In addition, it is possible to go directly to the textile engineering department from higher school. There are 14 Textile Engineering Departments from different universities. At the beginning of the questionnaire application to the lecturers, textile vocational schools of universities and the textile engineering departments lecturers contact information were determined from the webpage of the Council of Higher Education. Then the prepared google questionnaire form was sent to all lectures via e-mails.

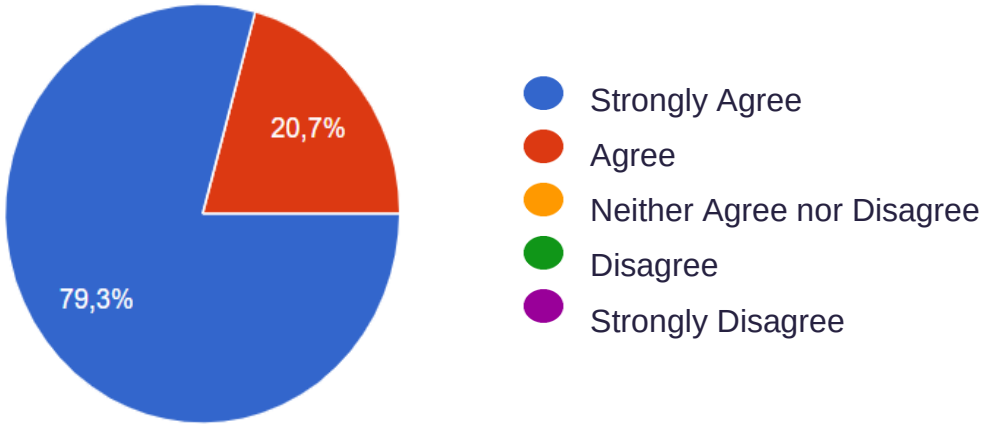
So far, 29 lecturers from 7 different universities who have professions on textile training on both textile vocational school and textile engineering department were replied the questionnaire form. According to the questionnaire results it is possible to say that all lectures in textile education make practical lessons to their students within the scope of possibilities. Mainly due to low cost ratio compared to other textile production stages the sewing machine is mostly used for the practical lessons. Lecturers are mainly use PPT presentation in their lessons. They also use video and picture digital education materials partially especially for the machines which are not available in the educational institution. Lecturers access the digital education materials access via the internet such as textile machine producer catalogues, videos, simulations and the sources from other websites required no copyright.

In general, lecturers are stated that there is a need for new digital educational content aspects that include video shooting, practice lessons, including lectures and workshops. In addition, lecturers suggest that the 3D data and technologies realistic access to textile machinery used in the production rather than the textual observations or interpretations that make up traditional scholarly material will be more attractive to the students. The lectures emphasize that there are so many types of machines in the textile field, and it is not possible to have all of them in every school. Students graduate by seeing only observing the pictures of many machines. For this reason, it would be productive to make comprehensive introductions of textile machines and to explain their working principles in detail will be extremely useful in textile education. Most of the lecturers stated that the visuals of the textile machinery which they reached from internet were insufficient. They stated that they could not reach the detailed and clear images of the machines, so they had problems in transferring the important information to the students. It is predicted that new visuals to be developed with today's technologies are very important and students' interest in the lessons will increase with these newly developed educational materials, and the participation in the lessons and the number of early school leaving will decrease.

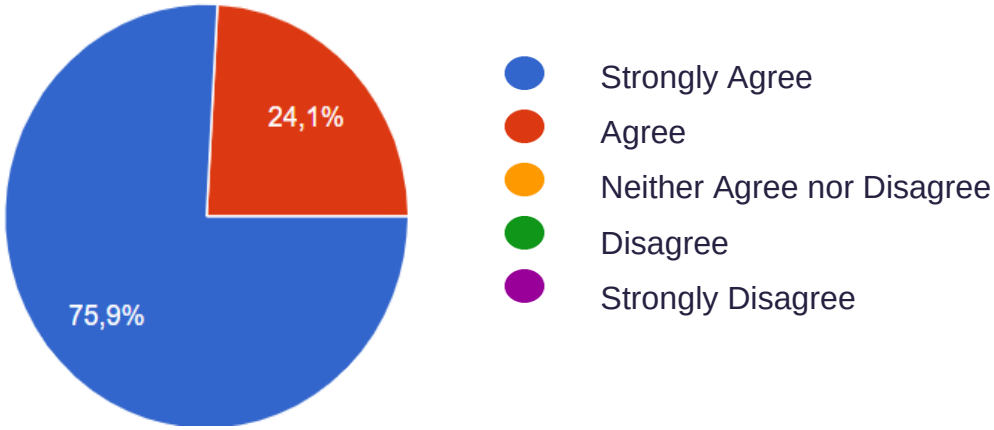
According to questionnaire results lecturers emphasized that the students have the most difficulty with understanding the production line working principle due to lack

facilities of the training centres. Most of them use the digital education materials already found on the web prepared by the machine manufacturers or other companies. Since the existing videos are prepared by the companies, lecturers suggest to prepare the systematically prepared training materials understandable, short and interesting for students. Most lecturers suggest that the use of interactive digital resources enriched with video will increase student motivation, will have an impact on students' academic success and will increase the efficiency of the lesson.

Interactive digital resources enriched with video increase student motivation.

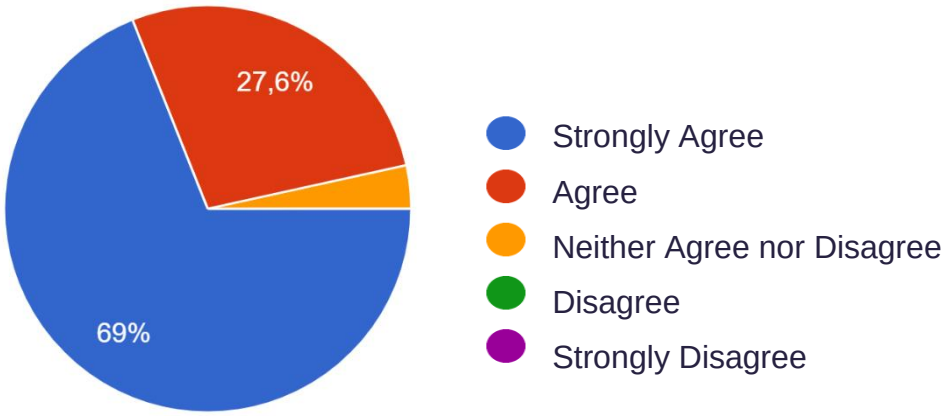


Interactive digital resources enriched with video have an impact on students' academic success.

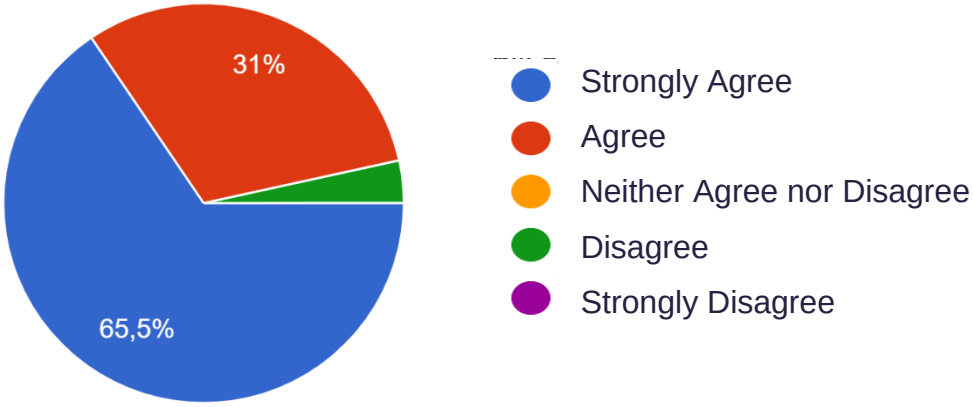


TÜRKİYE ULUSAL AJANSI
TURKISH NATIONAL AGENCY
The Project is funded by the European Union
Vir2TEX

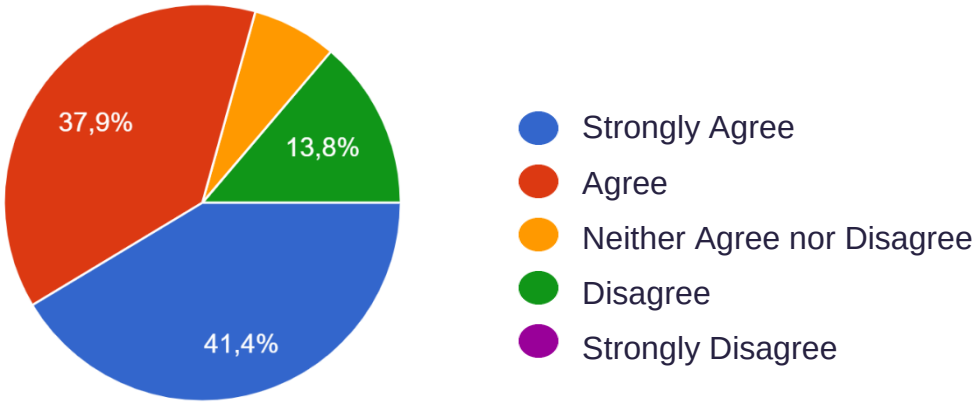
Interactive digital resources enriched with video are required to support the lessons.



Interactive digital resources enriched with video increase the efficiency of the course.

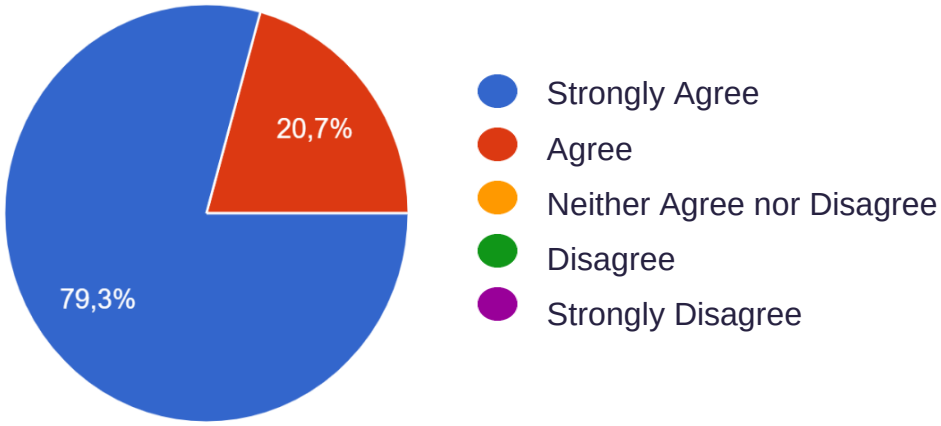


Interactive digital resources enriched with video should be short in duration.



TÜRKİYE ULUSAL AJANSI
TURKISH NATIONAL AGENCY
The Project is funded by the European Union
Vir2TEX

Interactive digital resources enriched with video should be able to show how the machines work.



As a result of the multiple-choice questionnaire administered to the teachers, most of the lecturers think that interactive digital resources enriched with video increase student motivation, have an impact on students' academic success and increase the efficiency of the course. The video duration is important and most of them prove that the duration should be low and mainly the digital sources should be able to show how the machines work.

3. Students Questionnaire Results

So far, 74 students from 7 different university departments such as; textile vocational schools, textile fashion design and textile engineering students/graduated were replied to the questionnaire form. The ages of the students who filled out the questionnaires are mostly between 19-23. The questionnaire was mostly replied to by the students from different programs in the vocational school such as; “Apparel Production Technology”, “Fashion Design” and “Textile Technology” programs. These three programs have different structures. Apparel Production Technology programs aim to educate about clothing art, clothing design, clothing production and management. The emphasis is on the basic principles of cloth production, ready wear production processes, textile and garment materials and properties, cloth pattern production, computer programs (CAD/CAM) used in clothing industry, preparing technical reports, and preparing projects. Fash ion Design program intends to cultivate high quality

TÜRKİYE ULUSAL AJANSI
TURKISH NATIONAL AGENCY
The Project is funded by the European Union
Vir2TEX

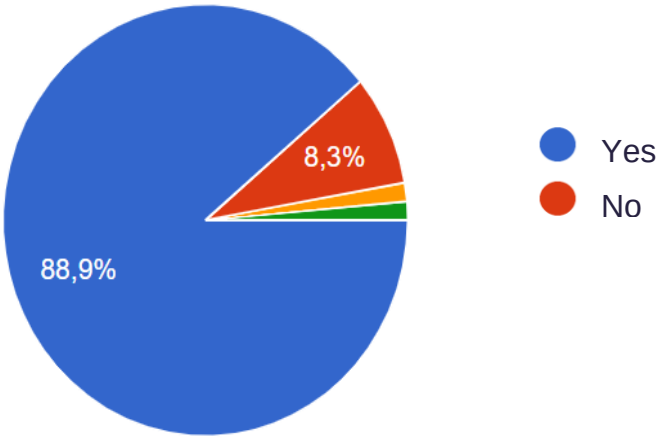
fashion designing and sampling. In the scope of the Fashion Design program, stitching techniques, preparation of models, theoretical and practical lessons that include both technique and artistic content are shown to the students. The program gives ideas for designing a garment for a specific purpose. On the other hand, this program develops the ability of designing by using various computerized programs. The aim of the Textile Technology program aims to educate about all textile production processes including; fibre production, yarn spinning, weaving, knitting, dyeing, printing and textile finishing. The Textile Technology program concentrates on the manufacturing of textile products, which is the key to the fibre, textile and apparel industries. Practical and theoretical courses include textile fibres and properties, modern and traditional yarn spinning processes, formation and structure of woven and knitted fabrics, finishing processes, quality control and production organization.

According to the questionnaire results of the students, they stated that there is practical training in their lessons. Most of the students stated that yarn, fabric, and textile auxiliary materials such as zipper, button materials are frequently used in their practical training. However, when the students are asked about the machines they learn in their textile education training, all of them are stated as sewing machines. A few part of the students declared that they practiced yarn production, woven fabric and knitted fabric production in the lessons. This result is predictable, because the cost of sewing machine and the place required for the establishment of the sewing machine is very low compared to the investment cost and space requirement required for the yarn and fabric production machines.

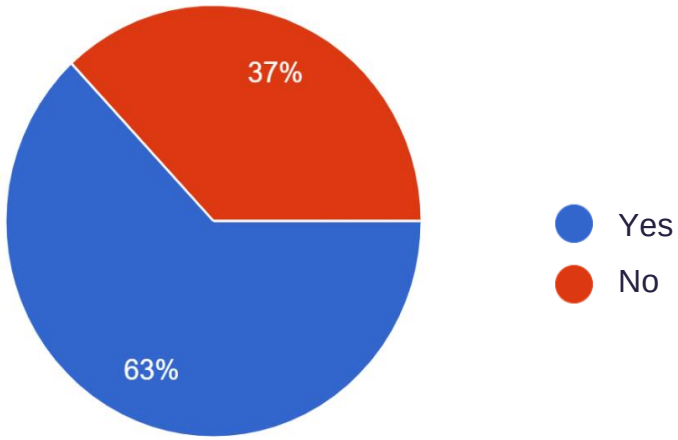
The most difficult lesson for the students is pattern making, the yarn and fabric production machines working principle. Students are mostly would like to learn and observe the real production from fiber to garment but due to the lack of facilities they could not completely understand the production process. In the questionnaire the students were asked about the digital resources that teachers currently use in their classes. According to the questionnaire results students stated that the lectures especially practical trainings should be more descriptive and understandable, giving importance to visually and finally better understanding with videos. Interactive digital

content enriched with video, an educational material with a lot of technical detail, visually educational and instructive will increase students' interest to lessons. Almost all students declared that they could only do practical training on sewing machine in their textile education. Most students think that, the interactive digital content enriched with video will help them to increase their knowledge about the course, will be more fun, will increase the efficiency of the lesson and will ensure that the learned information is permanent.

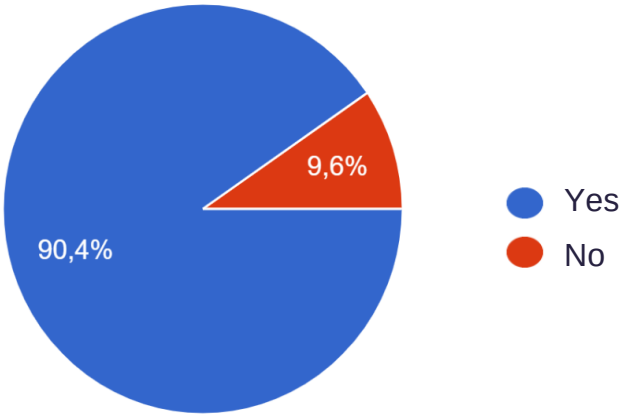
Do you have practical applied training in your curriculum?



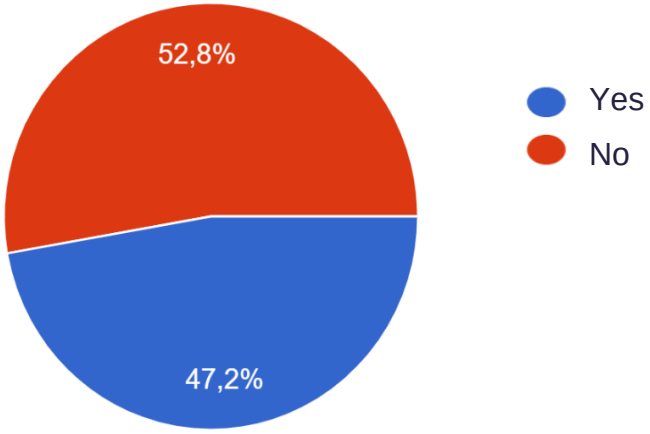
Are the practical trainings in the lessons sufficient for you to learn the subject?



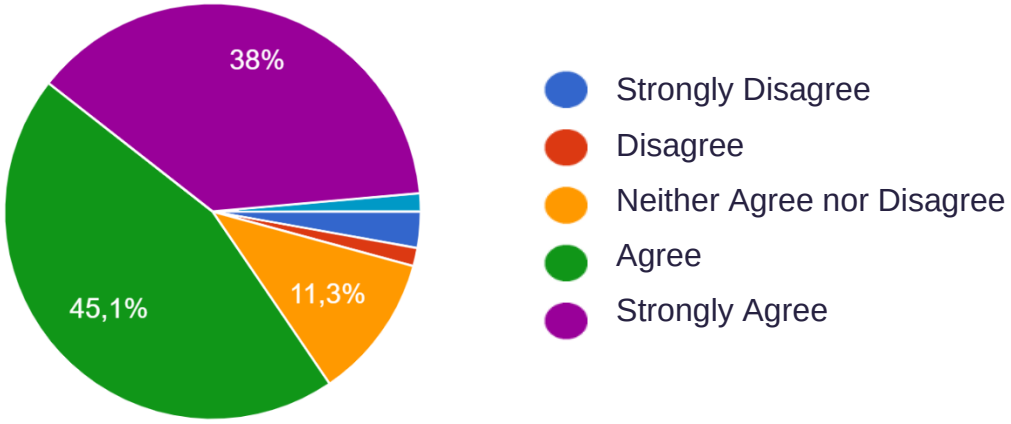
Are digital learning materials used in your applied courses?



Are the digital learning materials used in applied courses sufficient?

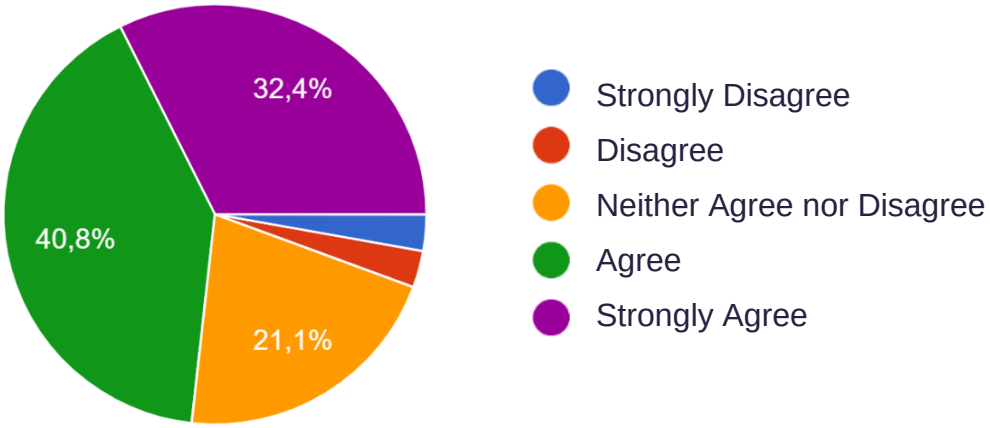


Interactive digital content enriched with video helps me to increase my knowledge about the course.

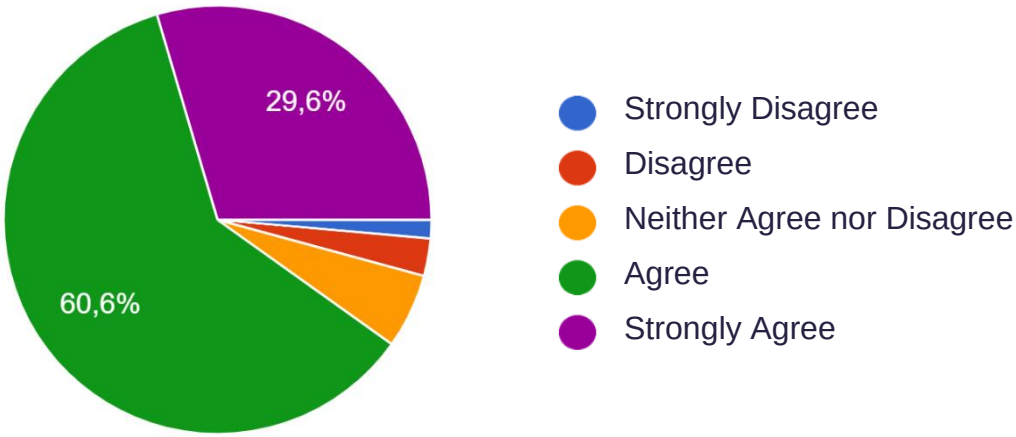


TÜRKİYE ULUSAL AJANSI
TURKISH NATIONAL AGENCY
The Project is funded by the European Union

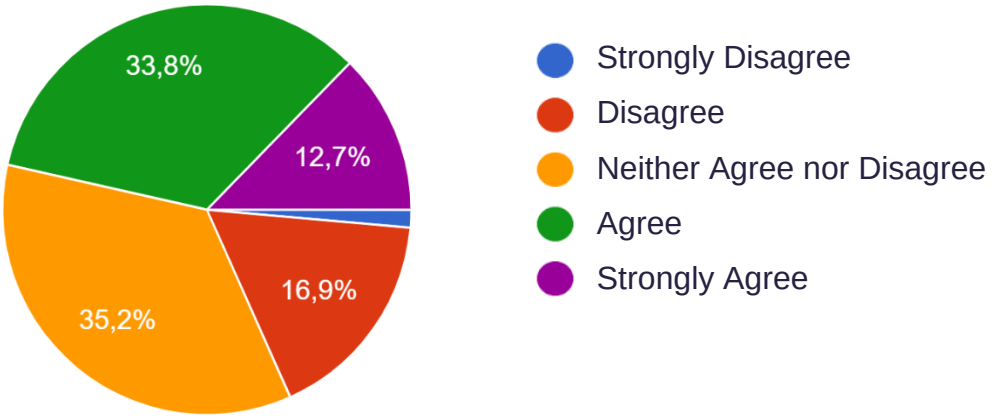
It is fun to practice with interactive digital training materials enriched with video.



Interactive digital training materials enriched with video will make practical trainings efficient.

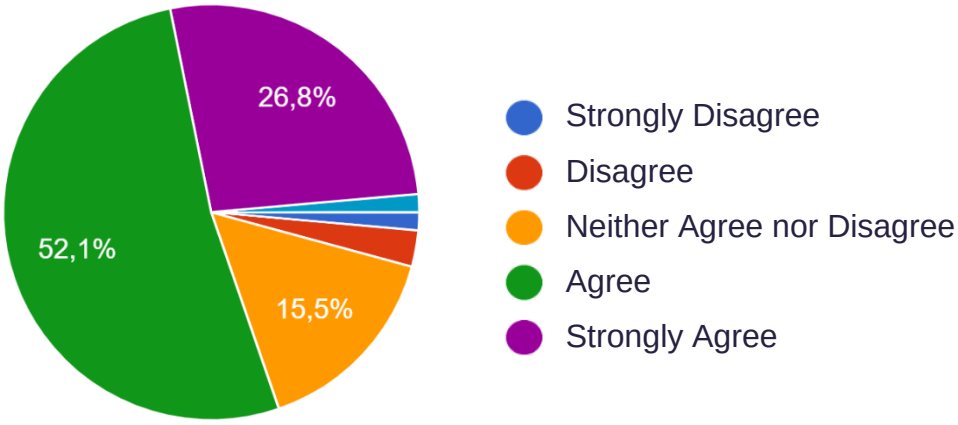


Interactive digital training materials enriched with video shorten the implementation time.



TÜRKİYE ULUSAL AJANSI
TURKISH NATIONAL AGENCY
The Project is funded by the European Union

Interactive digital training materials enriched with video can ensure that the learned information is permanent.



As a result of the multiple-choice questionnaire application administered to the students, most of the students have practical applied training in their curriculum, they think the current practical trainings in their lessons are sufficient for them to learn the subject. Almost in all different textile education schools digital content is using. Half of the students think that the digital learning materials used in applied courses sufficient. Almost all students agree that the interactive digital content enriched with video will help them to increase their knowledge about the course, will be fun and will increase the practical trainings efficient. The duration of the interactive digital content not very clear. There is not a specific consensus about the video duration being short. In addition, almost all students think that the interactive digital training materials enriched with video can ensure that the learned information is permanent.

In addition to the questionnaires in order to determine the content of digital learning and teaching tools, the negotiations were held with various textile companies such as; Uz Textile, Hugo-Boss, Ekoten, Sun Textile and Batı Basma. The new employees of the textile factories have at least 6 months for the adaptation to the factory. The content of the project outputs will be helpful for them. Especially the employees graduated from different engineering departments don't have the basic information in textile production. At the end of the all questionnaire application learning materials are designed and developed for target groups of learners. Course difficulty is pitched to the group's educational level and examples or exercises are selected from the

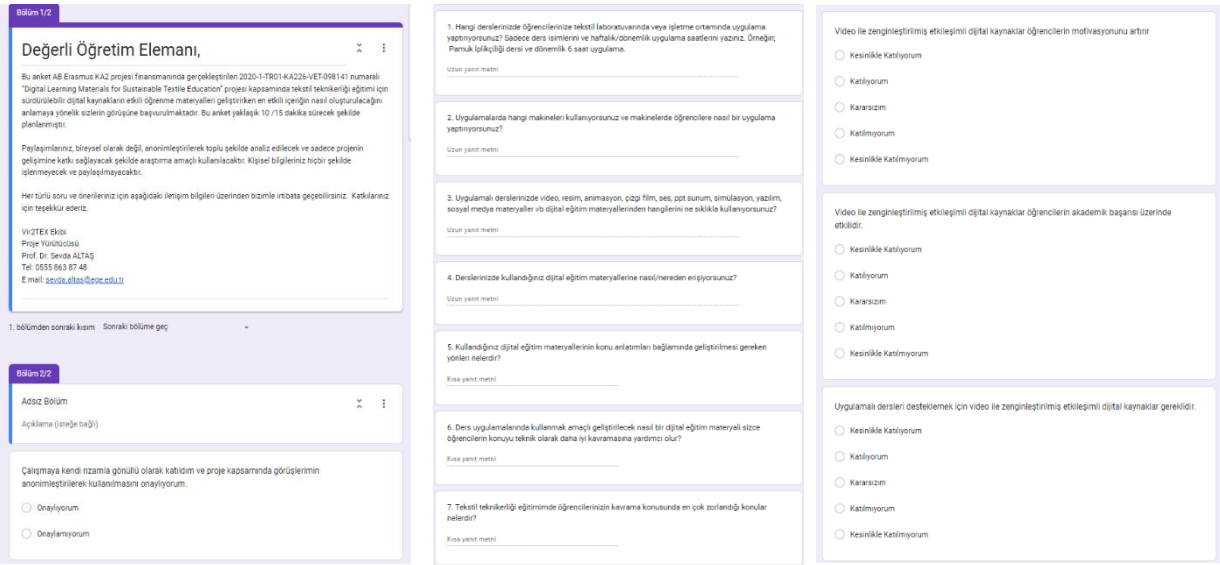
learner's environment. Materials obtained through collaboration with other institutions. Although the basic content of shared teaching and learning materials stays the same, the examples, arguments or explanations is adapted to reflect the culture of the partner institutions. All shared resources are reviewed to determine what changes are needed and supervise adapting the resources to the needs of local learner groups.

In e-learning, there are two main methods: self-paced and facilitated/instructor-led. In this project, a self-paced paradigm where students are entirely independent and alone is preferred. Collaboration between students and various degrees of expert, tutor, and instructor help are offered by VLE. E-learning courseware is made available to students, and it can be supplemented with extra materials and tests. Learners can access the course material from an online learning platform because it is kept on a VLE. Students are allowed to set their own specific learning goals and paces based on their unique requirements and interests. As a provider, we are not required to supervise or schedule learners' progress through a process. A set of learning objectives guide the development of the content.

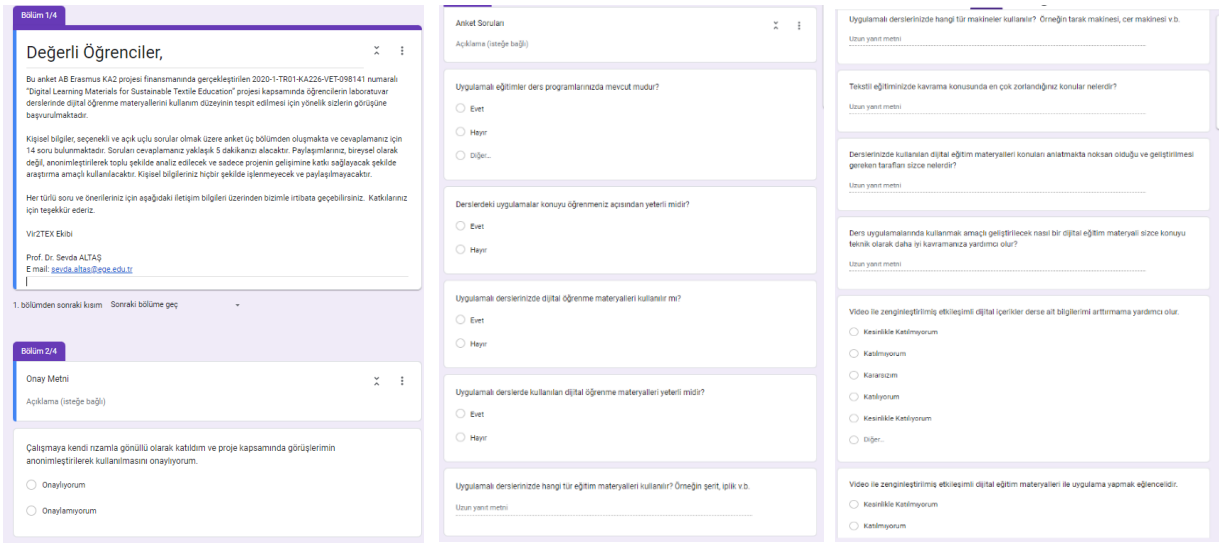
Content is developed according to a set of learning objectives and is delivered using different media elements, such as text, graphics, audio and video. We tried to provide as much learning support as possible (through explanations, examples, interactivity, feedback, glossaries, etc.), in order to make learners self-sufficient. However, some kind of support, such as e-mail-based technical support forums or e-tutoring, is offered to learners. Learners are given access to basic learning tools, such as papers, PowerPoint presentations, videos, and audio files. In the sense that learners can merely read or view content without taking any further action, these materials are no interactive. Additionally, we offer a collection of interactive materials for self-paced e-learning that incorporate text, audio, video, and interactivity in the form of questions and feedback, reading recommendations, links to other resources, and extra details on particular subjects. A variety of teaching methods are employed, including narration, case studies, examples, questioning, and practice with positive reinforcement.

Annex I: Online questionnaire

shorturl.at/ijwEI



shorturl.at/cekFY



TÜRKİYE ULUSAL AJANSI
TURKISH NATIONAL AGENCY
The Project is funded by the European Union