"Advanced Digital Skills

on Blockchain for Trusted Food Supply Chains"

Project: 101100804 — TRUST-FOOD

DIGITAL-2022-TRAINING-02-SHORT-COURSES

Deliverable: 4.1
Requirements analysis & Technical specifications document

Work Package 4
Responsible Partner: UBITECH

D4.1: Requirements analysis & Technical specifications document

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Table of Abbreviations

Abbreviations list	
Full Name	**Acronym**
Integrated Software Training System	**ISTS**
Small and Medium Enterprises	**SME**
Food Supply Chain	**FSC**
European Union	**EU**
Functional Requirements	**FR**
Non-Functional Requirements	**N-FR**
Software Requirements Specification	**SRS**
Stakeholder Requirements Specification	**StRS**
System Requirements Specification	**SyRS**

Executive Summary

TRUST-FOOD is a project that focuses on the development and provision of short-term training courses aimed at upskilling and reskilling the workforce. Its aim is to enhance the skills and knowledge of individuals working in the agrifood and food supply chain industries. Owners, managers, and staff members of SMEs working in the agrifood, and food supply chain are given special attention by the initiative. TRUST-FOOD's mission revolves around empowering individuals in SMEs within the agrifood and food supply chain sectors through targeted upskilling and reskilling initiatives, fostering growth, and promoting a competent and adaptable workforce.

Within TRUST-FOOD an Integrated Software Training System (ISTS) will be also developed. Technical specifications and requirement analysis of the ISTS are included in this document, referred to as Deliverable 4.1. It serves as a comprehensive document that outlines both the functional and non-functional requirements of the system, as well as the technical design and procedures that are relevant to meet the demands of the pilot phase. Moreover, the document covers the methodology used for the project and analyses the requirements elicitation process. This includes an explanation of how the project team gathered, documented, and validated the requirements from stakeholders. The methodology section provides insights into the approach taken to ensure that the system's requirements align with the needs and expectations of the intended users.

1.   Introduction

1.1   The TRUST-FOOD Project

The TRUST-FOOD project aims to support the growth of advanced digital skills among workers, with a focus on SMEs, as well as job seekers by giving them access to top-notch specialised training courses that reflect the most recent advancements in the field of Blockchain technologies applied holistically to the Food Supply Chain (FSC).

With a particular focus on SMEs owners, managers, and employees in the FSC sector, the project will design and deliver brief training courses for upskilling and reskilling the labour force. The training will be highly practical, providing detailed information of important digital blockchain technologies and their applications to the FSC. The classes will also target job searchers in particular areas.

The courses will range in length from one month to a maximum of six months. The primary course categories will be:

● Business executives or managers should take courses to learn advanced digital skills and competencies linked to blockchain and how to use them to innovate, develop, and grow their companies. They should also learn how to build trusting connections with other companies and stakeholders in the industry.

● Courses to help working professionals or those looking for work develop their advanced digital abilities and knowledge of how to integrate blockchain technologies with pertinent, cutting-edge digital tools in their everyday work.

● Intensive seminars and workshops for high-skilled employees at SMEs or job seekers on certain business cases and facets of the blockchain (for instance, business case: blockchain for improved food product traceability).

1.2   Integrated Software Training System

The primary goal of Work Package 4 is to create an innovative Integrated Software Training System and the related electronic learning resources. In further detail, the TRUST-FOOD integrated training system will be created using a modular design made up of 3 different sub-systems that each offer a unique set of capabilities while being smoothly connected.

The serious games and digital educational content, as well as data visualization and analytics surrounding trainings, will all be available through the first sub-system (front-office), which will also include GUIs for system access and registration of trainers and trainees. The second (Backoffice) will handle data management and algorithm development, and it will provide AI/ML assistance for suggestions on the game's storyline and gameplay based on the skill level of the player, as well as functionality for blockchain and token-based systems.

1.3 Structure of the Deliverable

The structure of the document is as follows:

- **SECTION 1** presents the introduction of TRUST-FOOD project.
- **SECTION 2** analyses the methodology and techniques for extracting functional and non-functional requirements for TRUST-FOOD's Integrated Software Training System (ISTS).
- **SECTION 3** identifies the key stakeholders for the project and the user roles.
- **SECTION 4** illustrates the rationale behind the questionnaires.
- **SECTION 5** presents the functional and non-functional requirements and the technical specifications.
- **SECTION 6** the conclusion.
- **SECTION 7** presents the ANNEXES (TRUST-FOOD Questionnaire, Questionnaire Results in graphs).

2. Requirement Methodologies

The term "requirement methodologies" refers to the organised methods and procedures employed in the collection, examination, documentation, and management of the requirements for a software or systems development project. These approaches offer guidelines and frameworks to guarantee that stakeholders' needs and expectations are appropriately captured and transformed into well-defined requirements that can be effectively implemented.

2.1 Requirements Elicitation Framework

Requirements elicitation is a critical phase in software development that involves gathering, analysing, documenting, and validating user needs and system requirements, as depicted in Figure 1. It is the foundation of the software development process and ensures that the software system meets the needs and expectations of the stakeholders.
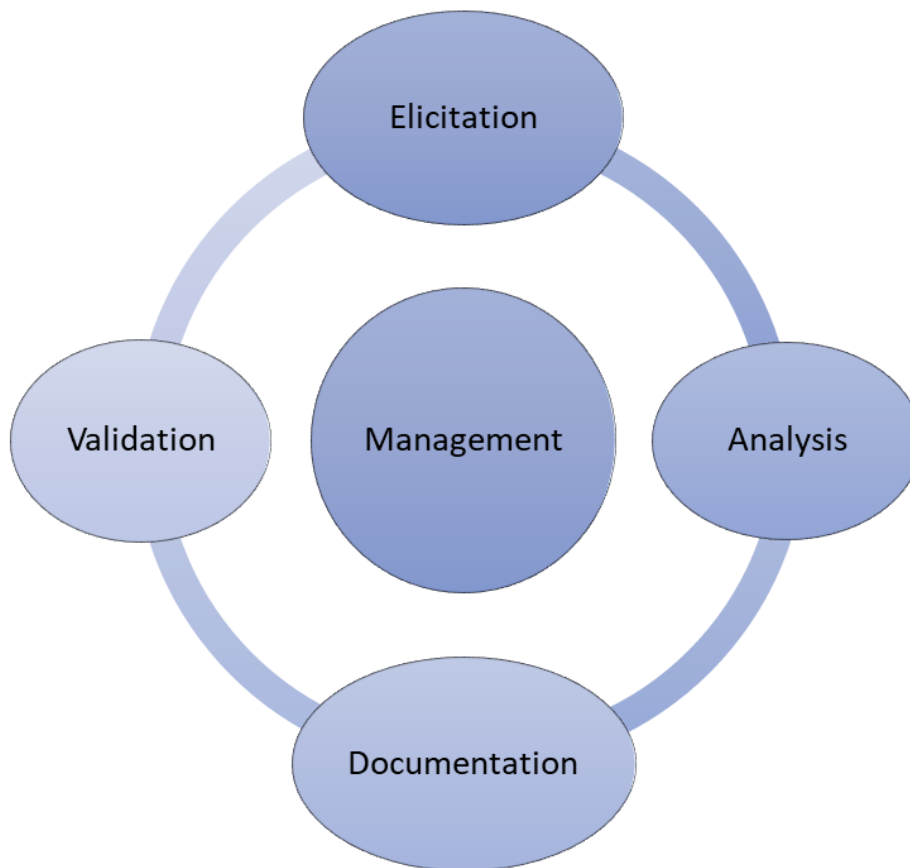

Figure 1: Requirements Elicitation Framework

The requirements engineering method will follow ISO/IEC/IEEE 29148:2018 which describes two main processes or practices, as presented in Table 1:

Process	Purpose	Output
Stakeholder Requirements Definitions Process	To define the requirements for a system that can provide the services needed by users and other stakeholders in a defined environment.	Stakeholder Requirements Specification (StRS)
Requirements Analysis Process	To transform the stakeholder, requirement driven view of desired services into a technical view of a required product that could deliver those services.	System Requirements Specification (SyRS) Software Requirements Specification (SRS)

Table 1: Requirements engineering process.

2.2 Requirements Elicitation Techniques

Requirements elicitation techniques are essential tools used by software developers to extract and design software requirements. There are several techniques used to elicit requirements including brainstorming, document analysis, focus groups, interface analysis, interviews, observation, prototyping, workshops, and questionnaires, as presented in Table 2 and analysed below.

Brainstorming

Brainstorming is a creative strategy for coming up with new ideas and requirements. It entails a group of stakeholders getting together to debate and brainstorm their thoughts on the system. Brainstorming can be a highly productive strategy since it allows stakeholders to freely express their views and ideas. However, it can be difficult to manage, and it might cause some ideas to be prioritised over others.

Document analysis

Document analysis is the process of identifying needs by evaluating existing documents such as user manuals, system specifications, and business procedures. This technique is useful for discovering requirements that are previously recorded and can save time during the requirements elicitation process. However, it is possible that it will fail to uncover all requirements and that more investigation will be required.

Focus Groups

Focus Groups are discussion groups guided by a facilitator to obtain requirements. Focus groups are useful for creating a wide range of ideas and perspectives, as well as identifying common themes and patterns in user demands. They are, however, time-consuming and may not be appropriate for big stakeholder groups.

Interface analysis

Interface analysis is the process of analysing the interfaces between the software system and other systems or software components. This technique aids in the identification of requirements for data interchange, data validation, and other interface-related requirements. However, it may not discover all requirements and may necessitate further inquiry.

Interviews

Interviews are one-on-one meetings between developers and stakeholders to get information about user needs and requirements. Interviews can be conducted in person, over the phone, or via video conferencing. They are useful for acquiring information about user needs, preferences, and expectations. However, interviews can be time intensive and may not be appropriate for big stakeholder groups.

Observation

Observation involves observing users as they perform their daily activities to understand their needs and requirements. This technique provides valuable insights into user behaviour and can help identify system requirements that may not have been considered through traditional interview techniques. Observation can be done in-person or remotely using screen-sharing software or video recordings.

Prototyping

Prototyping involves creating a preliminary version of the software system that stakeholders can interact with and provide feedback on. Prototyping can help identify and refine requirements, as well as provide stakeholders with a visual representation of the software system. However, prototyping can be time-consuming and costly.

Workshops

Workshops involve bringing together stakeholders in a collaborative environment to discuss and define requirements. Workshops are effective in generating a wide range of ideas and opinions and can identify common themes and patterns in user needs. However, they can be time-consuming and may not be suitable for large stakeholder groups.

Surveys/Questionnaires

Questionnaires involve sending questionnaires to stakeholders to gather information about their needs and requirements. Surveys are cost-effective, can be distributed to many stakeholders, and can be used to collect quantitative data that can be analysed for trends and patterns. However, surveys may not provide in-depth information about user needs and may not be suitable for complex software systems.

Requirements Elicitation Techniques	
Elicitation Technique	**Synonym**
Brainstorming	N/A
Document Analysis	Review existing documentation
Focus Groups	N/A
Interface Analysis	External Interface Analysis

Interviews	N/A
Observation	Job Shadowing
Prototyping	Storyboarding, Navigation Flow, Paper Prototyping, Screen Flows
Workshops	Elicitation Workshop, Facilitated Workshop
Survey/Questionnaire	N/A

Table 2: Requirements Elicitation Techniques.

2.3 Requirements Collection Methodology

The Requirements Elicitation Technique that is used for the elicitation of Functional and Non-functional Requirements within TRUST-FOOD project will be defined in this subsection.

2.3.1 Functional Requirements Methodology.

The approach that was used following the elicitation of the functional requirements is an online survey/questionnaire interview method.

One of the most popular ways to collect and analyse data from a particular population is through surveys. Surveys are an excellent elicitation tool because they can be used to quickly elicit facts, conclusions, and methods of acting from a large group using a variety of standardised questions and delivery approaches. Using surveys to collect functional requirements for the design of the ISTS, is a reliable and effective way. Surveys offer precise, quantifiable data that may be used to build a thorough and accurate picture of the demands of the consumers. Additionally, they lay the groundwork for user-centred design, guaranteeing that the software system successfully and efficiently fulfils its aim. Therefore, this approach is considered suitable for a project like TRUST-FOOD, which aims to have an impact on a large and diverse group.

The approach employed in this demand elicitation procedure is an online survey, which has the widest reach and the shortest turnaround time Google Forms, a survey creation tool, was utilised to create this online inquiry. Online research provides respondents with a certain amount of anonymity, which encourages more honest responses.

2.3.2 Non-Functional Requirements Methodology

The Brainstorming Elicitation Technique was employed to gather the Non-Functional requirements. Brainstorming is a collaborative technique that involves either an individual or a group of individuals with relevant expertise in the subject matter. Participants are encouraged to generate a multitude of ideas to address the specific problem at hand and identify potential outcomes. More specifically, for the Non-Functional requirements determination the brainstorming group of participants included, REZOS the Project

and Technical Coordinator, UBITECH the WP4 Leader and Unisystems one of the main technical partners involved.

During the brainstorming session, participants draw upon their knowledge and skills to propose various ideas, suggestions, and perspectives related to the Non-Functional requirements. The goal was to foster a free-flowing and non-judgmental environment that stimulates creativity and encourages participants to think outside the box. This approach helps uncover diverse perspectives and considerations that might not have been evident through other elicitation methods. The ideas generated during the brainstorming session served as valuable input for shaping the Non-Functional requirements and ensuring the software system's overall success.

In summary, the Brainstorming Elicitation Technique was utilised to gather Non-Functional requirements. This technique harnesses the knowledge and creativity of participants to generate a wide range of ideas and perspectives, facilitating the identification of key requirements and contributing to the effectiveness and quality of the software system.

3. Stakeholders and User Roles

The approach for identifying and eliciting the requirements of "TRUST-FOOD" aims to provide a process for discovering the needs of key stakeholders and gathering all necessary requirements, through the inspection of the Use cases/Scenarios.

3.1 The Categories of Stakeholders

Small and Midsize Enterprises

Small and medium enterprises (SMEs) are companies with revenues, assets, or staff counts below a predetermined level. Each nation has its own definition of what small and medium businesses are. The company's industry of operation may occasionally be taken into consideration, along with certain size requirements.

Additionally, the European Union (EU) provides definitions of what small-size businesses are. Companies classified as small-size organisations have fewer than 50 employees, while those classified as medium-size enterprises have fewer than 250. There are micro-companies in addition to small and midsize businesses, and they have up to 10 employees.

In the EU, SMEs account for 99% of all firms, like in other nations. SMEs are thought to employ 100 million people and produce more than 50% of the GDP of the European Union (Liberto, D., 2022)

More specifically, key stakeholders are the business leaders, managers, or highly skilled workers in SMEs in the Agrifood sector.

Chambers of Commerce

Chambers of Commerce are responsible for improving the local business environment and strengthening communities through advocacy, networking, and campaigning. In addition, they create an easy line of communication for business owners to connect with governing bodies (GoCardless, 2021)

More specifically, key stakeholders from Chambers of Commerce are business managers, or highly skilled workers in these organisations.

Job seekers

Anyone seeking a job is referred to as a "job seeker". Typically, job seekers are actively looking for work. However, a job seeker can simply be inactive, keeping an eye on the market in case a chance presents itself.

3.2 User Roles

The user roles of the Integrated Software Training System (ISTS) are defined in three categories:

1) Trainees
2) Trainers
3) Administrator

Trainees

The individuals who intend to study through the e-learning platform are referred to as "trainees". Trainees can include college students, job seekers, or even current workers who need to enhance their knowledge of blockchain technology. In order to fully utilise the e-learning platform, trainees are required to register and provide specific personal information as part of the registration process.

During registration, trainees are advised to select their preferred language or their native language for use on the platform. This language preference ensures that trainees can comfortably navigate the site and access the content in a language they are most comfortable with.

Once enrolled, trainees gain full access to the 20 e-learning courses available on the platform. These courses cover various aspects of blockchain technology and are offered in seven different languages, providing a wide range of options to cater to diverse trainee needs.

In addition to the courses, trainees also have access to educational games designed to assess and expand their understanding of blockchain technology. These serious games offer an interactive and engaging way for trainees to test their knowledge and apply what they have learned in a practical context.

Overall, the e-learning platform offers trainees the opportunity to register, select their preferred language, and gain access to a range of courses and educational games related to blockchain technology. It provides a flexible and comprehensive learning experience to support their educational goals and enhance their understanding of this field.

Trainers

Trainers in the e-learning platform are individuals, end users or academics, who provide educational information. They have the ability to enhance the educational experience by contributing additional material to the system, such as slides, videos, or relevant course materials.

To have complete access to the system, trainers are required to register on the platform and create a trainer account. During the registration process, they need to provide specific personal information. Additionally, trainers are encouraged to choose either their native language or the language they prefer to use on the site, similar to trainees. By registering and creating a trainer account, trainers gain the necessary privileges and permissions to effectively contribute their educational content and interact with the platform. This enables them to deliver high-quality courses and materials to the end users or academics who utilise the e-learning platform.

Overall, trainers play a vital role in enriching the educational experience on the platform by adding relevant materials and sharing their expertise. Their registration and account creation processes allow them to fully utilise the platform's features and tailor their language preferences for effective communication with trainees.

Administrator

The administrator is responsible for ensuring the platform's operation, security, and user experience. They can manage user accounts, set up settings, fix technical problems, and enforce community rules thanks to

their heightened access capabilities. Administrators are also in charge of deploying upgrades, backups, and security measures to secure the system or platform from any threats.

The administrator's role involves ensuring the platform operates smoothly, maintains security, and provides a positive user experience. They have enhanced access capabilities to manage user accounts, configure settings, resolve technical problems, and enforce community rules.

Administrators are responsible for handling user accounts, including creating new accounts, modifying profiles, and managing permissions. They set up platform settings according to the requirements, customising features, and system configurations.

Troubleshooting technical issues is a key responsibility of administrators. They diagnose and fix problems, working closely with technical support or developers to ensure the platform functions properly.

Administrators ensure users comply with policies and take appropriate actions against violators to maintain a safe environment.

Admins also play a role in deploying upgrades, backups, and security measures. They keep the platform up to date, apply security patches, perform data backups, and monitor for potential vulnerabilities.

In brief, administrators oversee account management, settings configuration, technical problem resolution, rule enforcement, and platform security to ensure a smooth and secure user experience.

4.   TRUST-FOOD Questionnaire

4.1   Questionnaire Establishment

TRUST-FOOD partners created a questionnaire to assist in the capture of the end users' Functional Requirements (FR) from European SMEs. The highest priority was to make the questionnaire usable and understandable by both technical and non-technical stakeholders.

The questionnaire comprises 6 different sections. More specifically, the sections are presented below:

1. Demographic questions.
2. General questions about the platform.
3. Questions related to the user level and course suggestions.
4. Questions related to course functionality.
5. Questions related to platform/system functionality.
6. Questions related to reminder and confirmation emails.

All questions are replied to by both potential trainers and trainees. (ANNEX I: TRUST-FOOD Functional Requirements Questionnaire)

4.2   Questionnaire Results

The TRUST-FOOD Questionnaire has been completed by 131 participants from different countries, sex, and ages, as depicted in Figure 2.
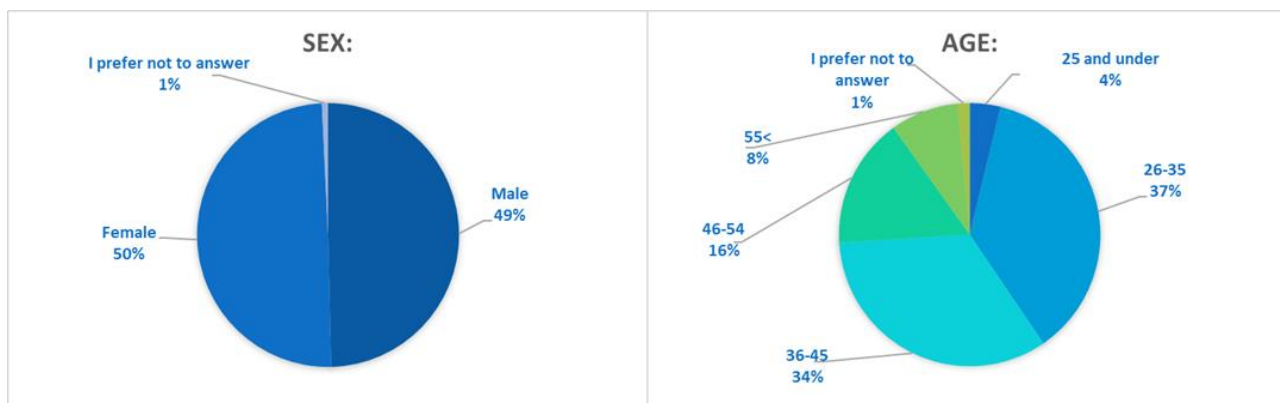

Figure 2: Age and Sex Pies in percentage.

In the following tables are presented the results of the Questionnaire, taking into account the rate the responders have given them. We assume that the requirements with rate five (5) are the high priority requirements, the requirements with rate three (3) or four (4) are the medium priority requirements, and the low rated requirements are those the responders' rate with one (1) or two (2).

ID	FR1
Title	The ideal time for every class/lesson in each course is maximum 30 min.
Priority	High
Description	The e-courses should not be tiring for the audience to stay focused, and the lesson can be efficient. As a result, the trainees and trainers choose a time limit of a maximum of 30 minutes per lesson.

ID	FR2
Title	Every course should offer videos and presentations of the course content.
Priority	High
Description	Trainees should have access to videos for each course, but they should also have access to the course's presentations-slides independently from each video.

ID	FR3
Title	The platform/system should have one Home Tab with a list of different tasks (Courses etc.)
Priority	Medium
Description	The GUI should include all the tasks that the platform offers on the home page, as a list of tasks, and not in different tabs.

ID	FR4
Title	The platform/system has a reward method for training.
Priority	Medium
Description	The reward method is related to the web/application's user level. The web/application's trainees' level is defined by the thought that each user could acquire a different level. The level would depend on the number of courses the user has already completed.

ID	FR5
Title	The difficulty of the courses depends on the web/application's user level.
Priority	Medium
Description	The web/application's trainees' level is defined by the thought that each user could acquire a different level. The level would depend on the number of courses the user has already completed.

ID	FR6
Title	Suggested courses depending on user searches on the application/webpage.
Priority	Medium
Description	Many trainees would be interested in specific topics of courses. So, the platform could suggest similar courses according to their searches.

ID	FR7
Title	Suggested courses, depending on the trainee's level.
Priority	Medium
Description	According to the user level, each trainee has approached, the platform/system could suggest courses according to their difficulty.

ID	FR8
Title	Suggested courses, depending on the chosen language.
Priority	High
Description	Every end-user in the registration process should choose the language they prefer. Since the platform will offer courses in seven different languages, the platform/system should suggest to the trainees the courses match their preferred language.

ID	FR9
Title	Suggested courses depending on trainees' educational level.
Priority	Medium
Description	Trainees might specify their educational level throughout the registration procedure. The trainees may be offered suggested courses based on their educational background. The courses might be divided into groups based on how challenging they are.

ID	FR10
Title	Suggested courses depending on the trainees' professional expertise.
Priority	High
Description	The trainees have the option to specify their professional expertise upon registration. Accordingly, trainees may have suggested courses based on this data. The courses may feature keywords that assist the platform or system in matching the course with professional competence.

ID	FR11
Title	The course lesson/chapter does not have to restart if the user stops it in the middle of the chapter/lesson.
Priority	High
Description	In non-synchronized courses, it is quite helpful to stop a lesson in the middle of the video and resume it the next hour or the day after you have stopped it, where trainees can participate in a course without a fixed timetable. Otherwise, trainees should rewatch the video.

ID	FR12
Title	The chapters/lessons or courses the user has already taken, should be marked as taken in the platform/system.
Priority	High
Description	This requirement works like a reminder that the trainees have already watched a specific lesson/chapter or have already participated in a specific course.

ID	FR13
Title	Each course has subtitles (in case of video).
Priority	High
Description	Subtitles enhance the accessibility, clarify dialogues and accommodate noise-sensitive environments and make audio-visual content more inclusive.

ID	FR14
Title	Create a forum on the website/application so the trainees and trainers can communicate.
Priority	Medium
Description	A forum is a tool that can facilitate trainees' and trainers' communication and the discussion of pressing issues. Additionally, it will be helpful for any explanations that are required.

ID	FR15
Title	The platform/system associate tests and examinations to courses.
Priority	Medium

Description	Tests and examinations are a great way for trainees to gauge how well they comprehend the courses in which they have enrolled. Understanding the trainees' level of expertise in each subject is also beneficial to the trainers.

ID	FR16
Title	Download certificates, course registration sheets, and evaluations.
Priority	High
Description	When a trainee completes a course, the platform should award them a "certificate of completion" in form of badges or digital credentials. The platform should also give the trainers access to the registration forms.

ID	FR17
Title	The platform/ system supports webinars.
Priority	High
Description	The webinars are an educational tool that provides the trainees with condensed knowledge. The webinars will be provided as a recorded material, so the users will be able to access them any time.

ID	FR18
Title	The platform/system allows changes to user information.
Priority	Medium
Description	The changes that could happen to the trainees' and trainers' information are the email address, educational level, professional expertise, etc.

ID	FR19
Title	The trainees and trainers are able to access the webpage and its features via mobile friendly browser interface.
Priority	High
Description	The mobile-friendly interface is a quality that is related with the fact that nowadays everyone may use their cell phone as if it were their own computer. Cell phones are used daily for entertainment reasons and to carry out business obligations.

ID	FR20
Title	The platform/system allows downloadable content for users in PDF from computer or mobile service.
Priority	High
Description	The trainees could download PDF files from the platform, to have offline access to the content of the courses.

ID	FR21
Title	The platform/system prevents enrolment in a course when the trainees are not enrolled in a prerequisite.
Priority	Medium
Description	The platform will alert and prevent trainees from enrolling if prerequisite enrolments must be completed before enrolment in any course.

ID	FR22
Title	The platform/system sends "reminder emails" to participants scheduled for a course/webinar.
Priority	Medium
Description	If it is an upcoming webinar or course on the platform that the trainees or trainers have selected to participate in, an email with the date and the time of the course/ webinar will be sent to them a few days before, as a reminder.

ID	FR23
Title	The platform/system sends confirmation and status emails to the trainees and trainers.
Priority	Medium
Description	After the registration process is completed a "confirmation email" could be sent to the trainees and trainers to confirm their registration.

5. System's Functional and Non-Functional Requirements and Technical Specifications

5.1 Types of Requirements

Generally, requirements can be classified into two main categories, as already mentioned in previous sections:

1. The **functional** requirements.
2. The **non-functional** requirements.

5.1.1 Functional Requirements

Functional requirements are crucial in defining the tasks a software system must be capable of performing to fulfil the needs of its end users. They specify the desired functionality of the software and serve as the foundation for its design and development process, ensuring that the final product meets user expectations.

To establish functional requirements, it is important to understand the needs and expectations of the users. This involves identifying the key features and functionalities that are essential to meet their requirements effectively.

Functional requirements are typically categorised into two types: essential and desirable requirements. Essential requirements are necessary for the software system to operate correctly and meet the core needs of the end users. They are fundamental to the system's functionality. Desirable requirements, on the other hand, are not mandatory but provide additional value to the software system, enhancing the user experience or offering extra capabilities.

By defining and prioritising functional requirements, software developers can align their efforts with the expectations of the end users. This ensures that the resulting software system meets the necessary functionality and provides the desired features and capabilities.

Throughout the software development lifecycle, functional requirements serve as a reference point for developers, guiding their design and implementation decisions. They are used to validate the system's functionality during testing and quality assurance processes, ensuring that the software meets the specified requirements.

In summary, functional requirements specify the tasks and functionality that a software system must possess to fulfil the needs of its users. They form the basis for the software's design and development, ensuring that the final product meets user expectations and provides the necessary features and capabilities.

5.1.2 Non-Functional Requirements

Non-functional requirements are aspects or characteristics of a software system that are essential to its success but are not immediately related to its functionality. Non-functional requirements are also known as "quality attributes" or "system qualities". These specifications outline the functionality, dependability, and

usability expectations for the software system. They are essential to assuring the software system's overall quality and its capacity to satisfy end users. Non-functional requirements can be categorised into different areas based on their nature and impact on the system. Each category addresses specific aspects that are vital for the software system's effectiveness and user experience. By defining and prioritising non-functional requirements, software development teams can ensure that the system meets the necessary standards and delivers the expected levels of performance, reliability, security, and usability to meet the needs of the end users.

Non-functional requirements can be classified into several categories:

- **Performance:** These requirements specify how fast the software system should perform its tasks and how many users it can support at a given time. Performance requirements can include response time, throughput, and resource utilization.
- **Reliability:** These requirements specify how well the software system should perform under various conditions, such as heavy loads or system failures. Reliability requirements can include fault tolerance, error handling, and disaster recovery.
- **Usability:** These requirements specify how easy the software system should be to use and how well it should meet the needs of its users. Usability requirements can include user interfaces, accessibility, and internationalisation.
- **Security:** These requirements specify how well the software system should protect the data and resources it manages. Security requirements can include access control, encryption, and authentication.
- **Maintainability:** These requirements specify how easy the software system should be to maintain and modify over time. Maintainability requirements can include code readability, documentation, and software architecture.
- **Scalability:** These requirements specify how well the software system should be able to adapt to changing user needs and system requirements. Scalability requirements can include the ability to add or remove users, features, or resources.

5.2   TRUST-FOOD Functional Requirements

The first findings derived from the questionnaire showed that describing a web or application platform is a multi-factorial task that aims to combine general questions about the online platforms/systems, questions about the trainee's facilitation on the platform, questions about the course's functionality, and questions about the platform's/system's functionality.
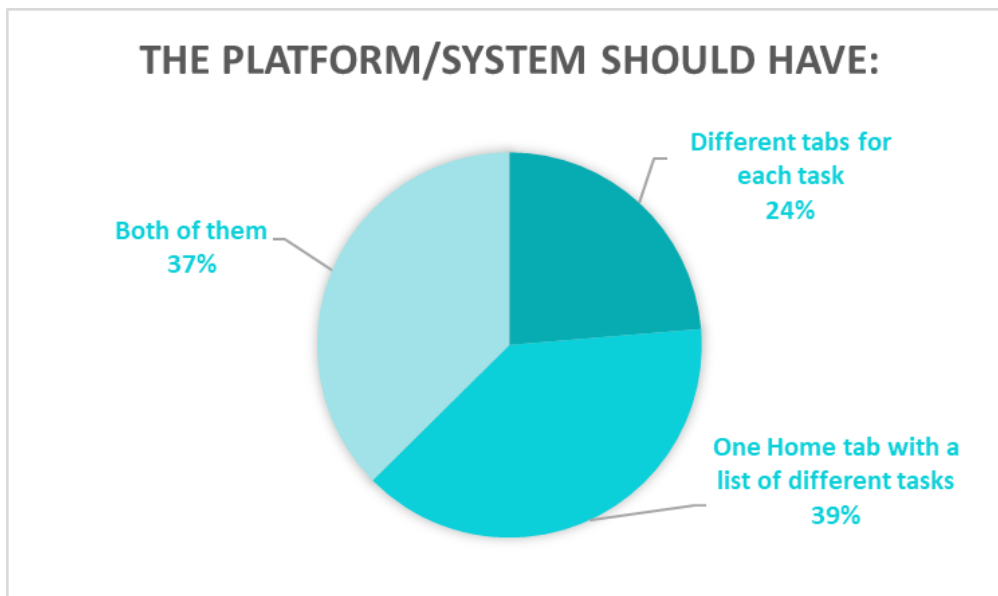
Figure 3: The preference of the GUI of the platform.

According to the findings of the survey, what end users would expect from the TRUST-FOOD platform, first is a homepage with a list of different tasks that will be included in ISTS, as depicted in Figure 3.
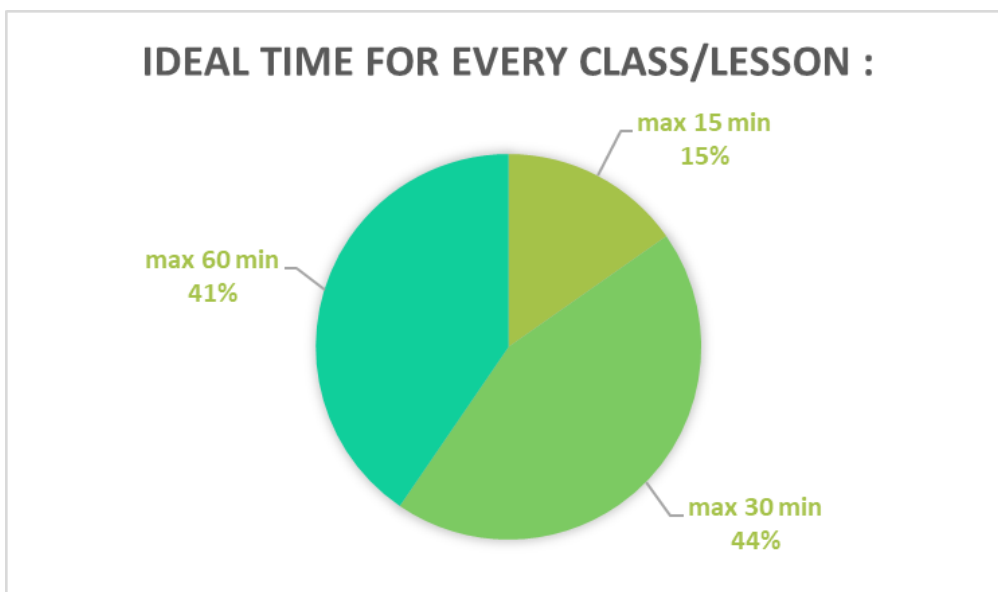

Figure 4:Ideal time for every Class/Lesson.

These tasks will include brief lessons or chapters for each course that do not last longer than 30 minutes for each video or presentation to be completed, as depicted in Figure 4. This way, the courses will not be tedious and can keep the learners interested in the material.
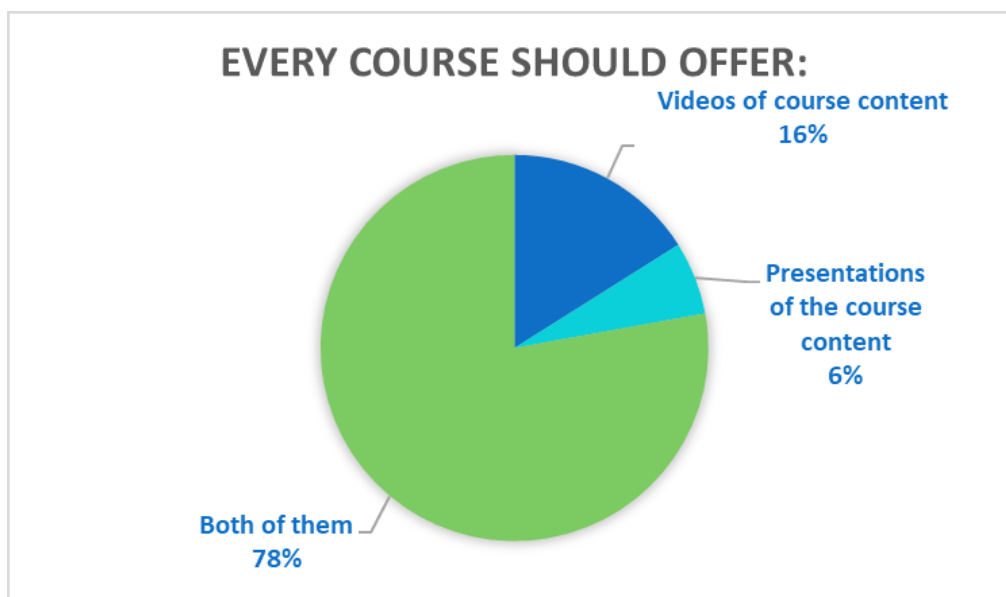
Figure 5: What files should every course to offer.

In addition to videos, the courses should include presentations for each one to make the instructional material more accessible, as depicted in Figure 5.
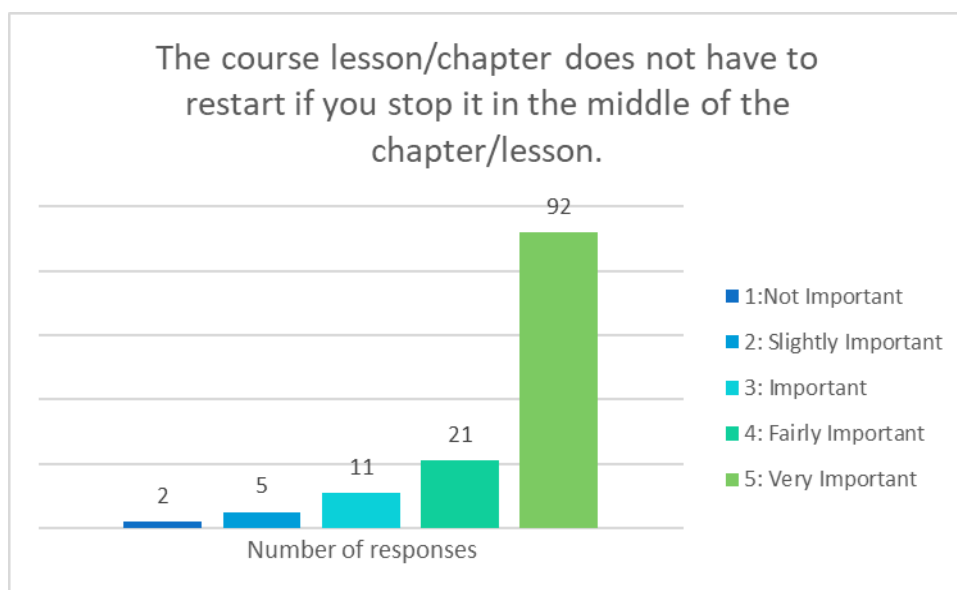
Figure 6 :The course lesson/chapter does not have to restart if you stop it in the middle of the chapter/lesson.

Additionally, if trainees stop watching the videos of a course before they are finished, they shouldn't have to be restarted, as depicted in Figure 6.
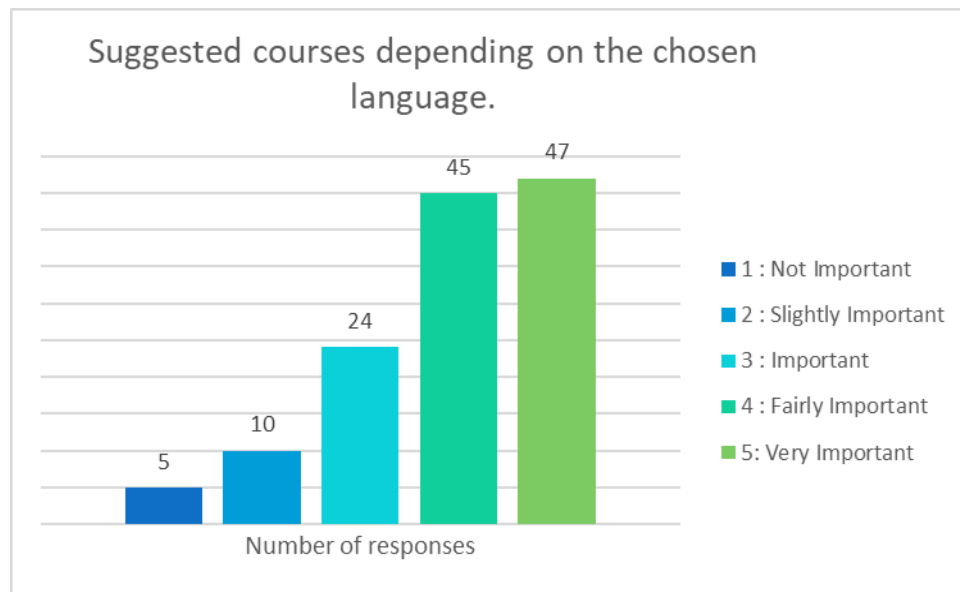
Figure 7: Suggestions depending on the language.

The TRUST-FOOD platform should be a user-friendly system that allows trainees to enjoy the e-learning experience. For their facilitation, the trainees expect an easy access e-learning platform with suggestions depending on their native or chosen language, as depicted in Figure 7.
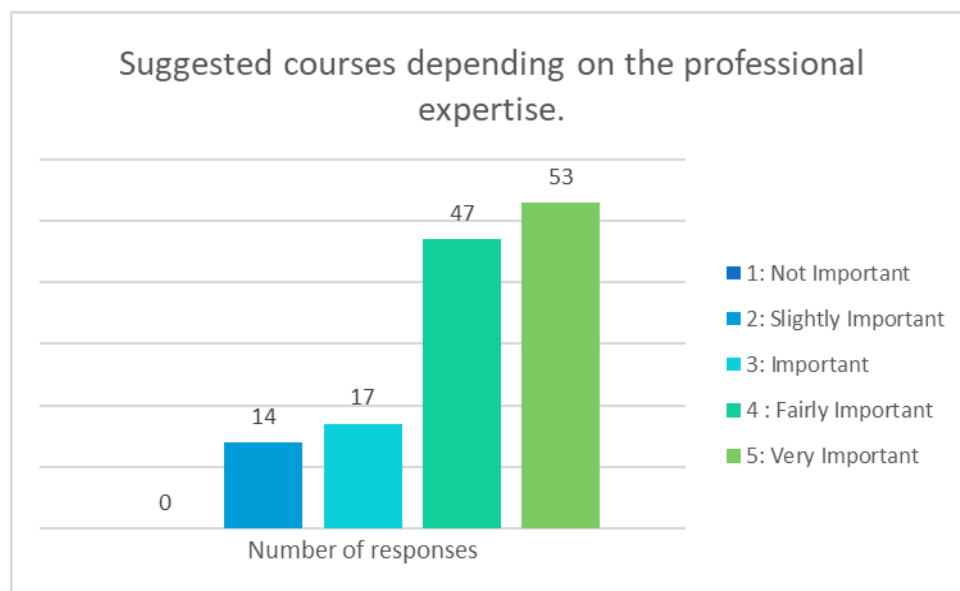
Figure 8: Suggested courses depending on the professional expertise.

Easy access to the e-learning platform will be accomplished with suggestions depending on the trainee's professional expertise, as depicted in Figure 8.
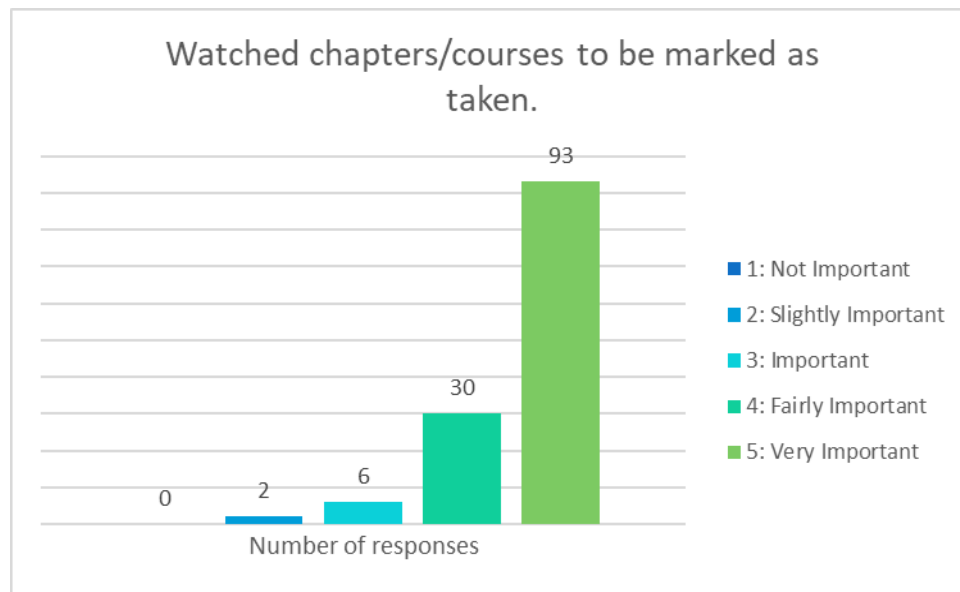
Figure 9: Watched chapters/courses to be marked as taken.

Regarding the course functionality, the platform/system should remind the trainees which courses or lessons/chapters of the courses they have already watched, by marking them as taken, as depicted in Figure 9.
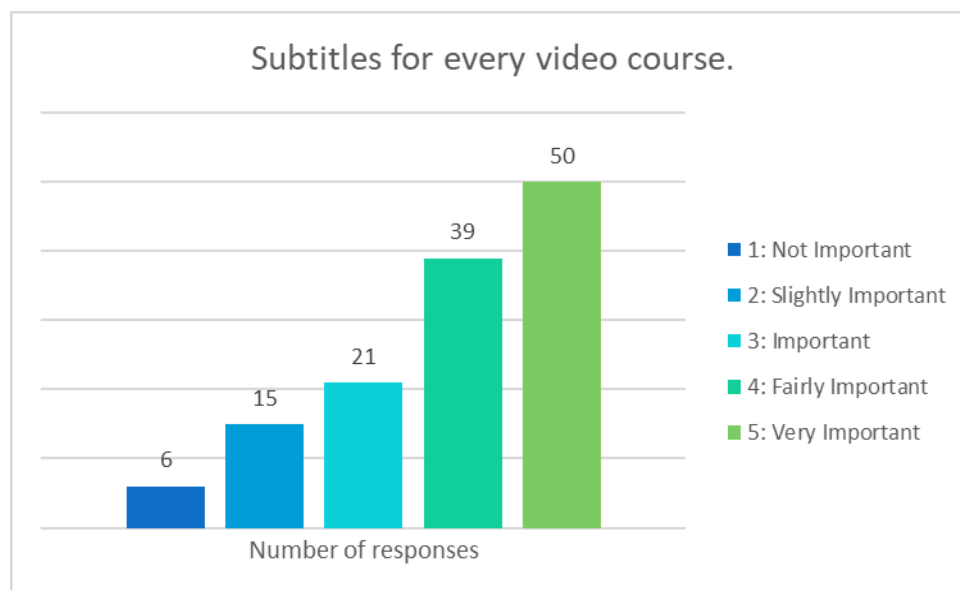
Figure 10: Each video course should have subtitles.

Another important functionality is that subtitles should be provided for each course because subtitles enhance the accessibility of the courses, as depicted in Figure 10.
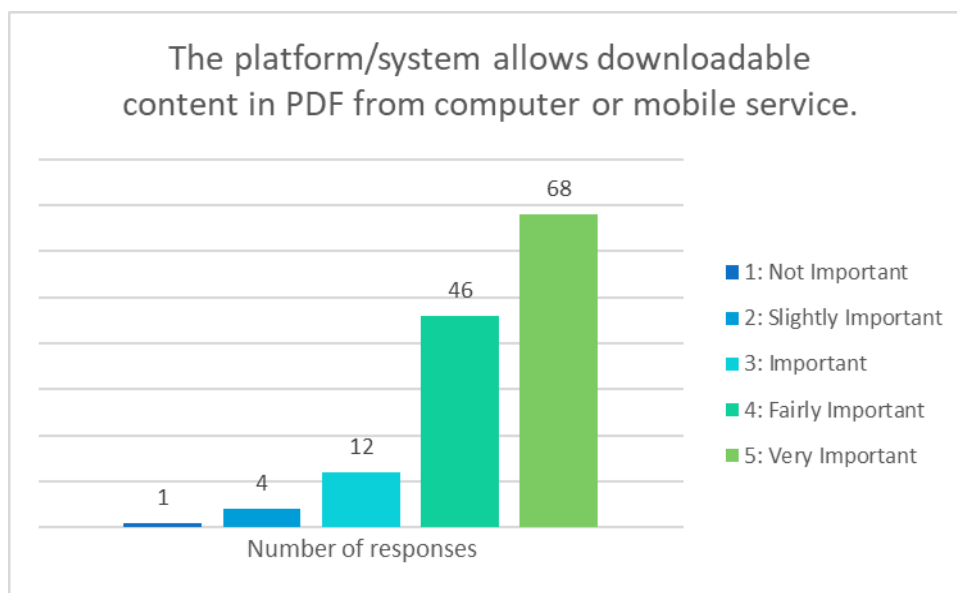
Figure 11: The platform allows downloadable content in PDF.

The platform should allow downloadable content for users in PDF from a computer or mobile service, as depicted in Figure 11.
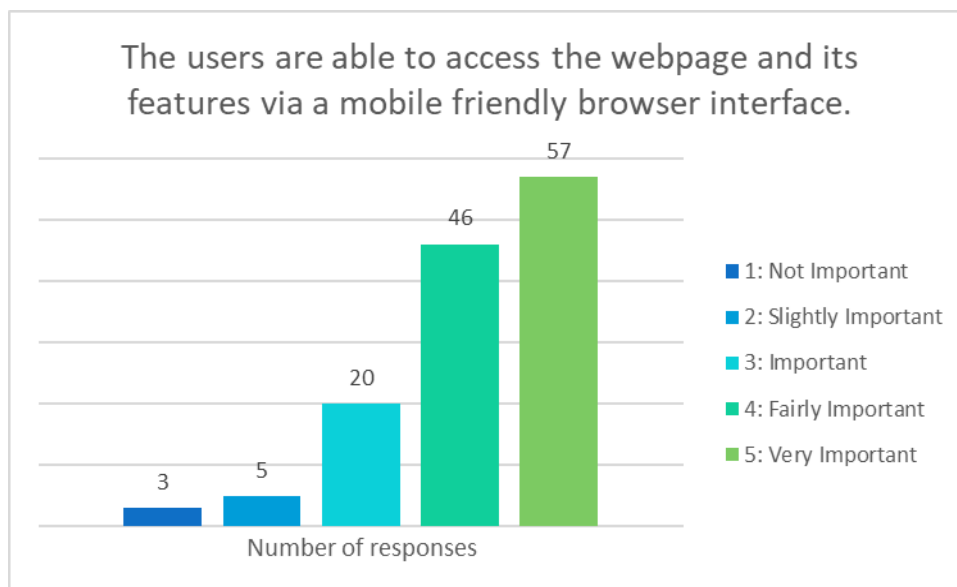
Figure 12: Platform has a mobile friendly browser interface.

In addition to all the above, the platform should support webinars for the trainees (Figure 13) and allows the trainees to be able to have access to the webpage and its features via a mobile-friendly browser interface (Figure 12).
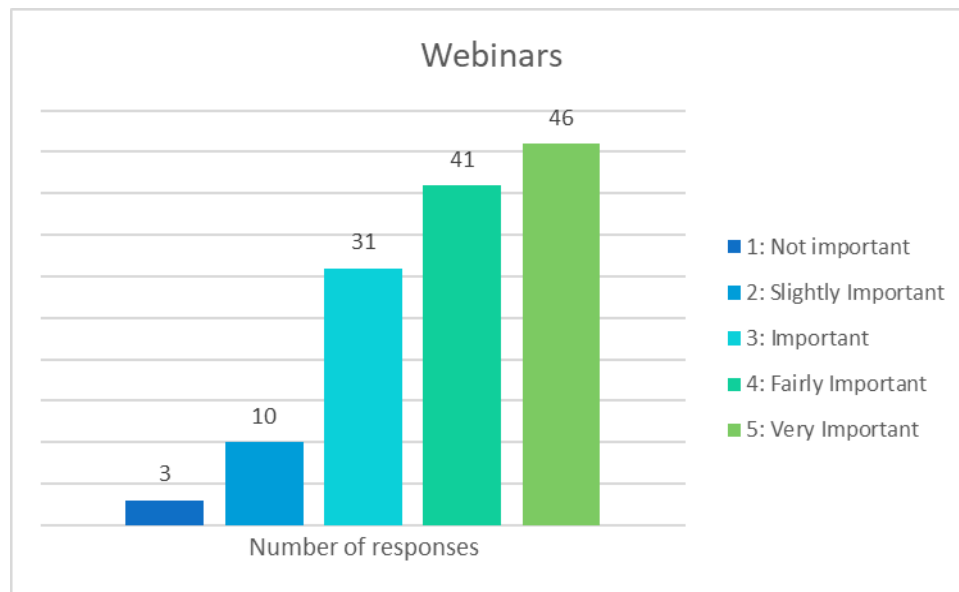
Figure 13: The platform should provide recorded webinars.

To sum up, the following table (Table 3: Platform's Functional Requirements.) presents the Functional Requirements that will be used in the ISTS.

Type		ID and Title
Functional requirements	**FR1**	The ideal time for every class/lesson in each course is maximum 30 min.
	FR2	Every course should offer videos and presentations of the course content.
	FR8	Suggested courses, depending on the chosen language.
	FR10	Suggested courses depending on the trainees' professional expertise.
	FR11	The course lesson/chapter does not have to restart if the trainee stops it in the middle of the chapter/lesson.
	FR12	The chapters/lessons or courses the trainee has already taken, should be marked as taken in the platform/system.
	FR13	Each course has subtitles.
	FR16	Upload certificates, course registration sheets, and evaluations.
	FR17	The platform/ system supports recorded webinars.
	FR18	The platform/system allows changes to user information.
	FR19	The trainees and trainers are able to access the webpage and its features via a mobile friendly browser interface.
	FR20	The platform/system enables users to download content in PDF format from a computer or mobile service.

	FR23	The platform/system sends confirmation and status emails to the users.

Table 3: Platform's Functional Requirements.

5.3   TRUST-FOOD Non-Functional Requirements

The Non-Functional Requirements that have been determined through the brainstorming technique are presented below. It is important to notice that the Non-Functional Requirements are not prioritized, like the Functional Requirements, because they have not been defined after questionnaire or survey results.

ID	N-FR1
Category	Performance Efficiency
Requirements	1. The system must accept batch uploads of files. 2. Response mean time: The response time of the site is highly related to the available deployment resources (CPU, ram, and disc). Using commodity hardware, the average response time of a site served from a WordPress infrastructure will be of some seconds. 3. The system must support 10 users at the same time (concurrent users).

ID	N-FR2
Category	Reliability
Requirements	The system must track and display student information.

ID	N-FR3
Category	Usability
Requirements	1. The system will support Mobility (e.g., phones and tablets). 2. The system will support all current versions and any previously supported versions of modern web browsers including Firefox, Google Chrome, and Safari. 3. The system will have unique course numbers. 4. The system will relate a set of courses that belong together in a series with a unique identifier. 5. The system will accept training material in Adobe Acrobat Reader (PDF) 6. The system will accept standard video file formats (mp4, m4v, webm, ogv) and embed video links. 7. The system will accept standard image formats (.jpg, .jpeg, .png, .gif, .ico)

ID	N-FR4
Category	Security
Requirements	1. The system will provide configurable role-based authentication. 2. Website administrator URL will be custom and only shared with admin and trainer roles.

ID	N-FR5
Category	Maintainability
Requirements	1. Planned system downtime must be scheduled at least 24 hours in advance. 2. Planned system updates, patches and support must occur without service disruption.

ID	N-FR6
Category	Scalability
Requirements	The system must be able to track interest in a course by the unique course numbers.

5.4 TRUST-FOOD technical specifications

5.4.1. Development tools

5.4.1.1 Git

The source code repository of the project will be managed through the GitLab tool.
Git is a free and open-source distributed version control system designed to handle everything from small to very large projects with speed and efficiency. Git is easy to learn and has a tiny footprint with lightning-fast performance. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like cheap local branching, convenient staging areas, and multiple workflows.

5.4.1.2 Docker

The setup and the development of the site will be based on the latest docker image of WordPress.
Docker makes development efficient and predictable. Also, it takes away repetitive, mundane configuration tasks and is used throughout the development lifecycle for fast, easy and portable application development – desktop and cloud. Docker's comprehensive end to end platform includes UIs, CLIs, APIs and security that are engineered to work together across the entire application delivery lifecycle.

5.4.1.3 WordPress version

The platform will use the latest version of WordPress until the time of the development. WordPress (also known as WP or WordPress.org) is a web content management system. It was originally created as a tool to publish blogs but has evolved to support publishing other web content, including more traditional websites, mailing lists and Internet forums, media galleries, membership sites, learning management systems and online stores. Available as free and open-source software, WordPress is among the most popular content management systems. (WordPress, n.d.)

5.4.2 Plugins

5.4.2.1 Eduma- Education Wordpress Theme by ThimPress

Eduma - Education WordPress Theme is the ultimate WordPress theme for creating a customised education website that aligns with your vision. With its diverse range of pre-built templates and layouts, Eduma makes it easy to create a professional-looking website tailored to meet the specific needs of your educational institution. The theme's compatibility with LearnPress. (Eduma, n.d.)

- **LearnPress-Students List**: Student List lets people check the list of students who have signed up for the course. You can choose to enable or disable the student list for each course. (LearnPress, n.d.)
- **LearnPress – myCred:** Create loyalty, build store reward programs, offer community games or use as analytics, it's all up to you. (LearnPress-myCred, n.d.)

5.4.2.2 LearnPress

LearnPress is a comprehensive WordPress LMS Plugin for WordPress. This is one of the best WordPress LMS Plugins which can be used to easily create courses online. You can create a course curriculum with lessons & quizzes included which is managed with an easy-to-use interface for users. Having this WordPress LMS Plugin, now you have a chance to create education quickly and easily, online school, online-course websites with no coding knowledge required. (LearnPress, n.d.)

5.4.2.3 ThimCore

Thim Core is a plugin for WordPress that is used by other plugins developed by ThimPress. It is the core of all our plugins and helps them function at their best.

Thim Core provides several useful features that improve the performance and maintenance of WordPress themes. Users may easily register custom post types and custom fields with Thim Core, allowing them to produce customised content and increase the versatility of their themes. Thim Core also includes a Control Panel and modification Page, which provide a user-friendly interface for theme control and modification. (ThimCore, n.d.)

5.4.2.4 Thim Elementor Kit

A wonderful solution with many useful features is Thim-Kit. The flexibility with which header, footer, and other blocks may be changed on a single page or across all pages makes Thim-Kit unique. Additionally, it allows you to change your Basic Elementor to build Mega Menus, product layouts, and blog layouts. Users of Eduma or other LMS WordPress Themes may update and alter courses with Thim-Kit's ThimPress Extension Widgets. Because Thim-Kit emphasises on usability, drag, and drop building is also supported, and you can select from pre-made templates and widgets to create the exact website you desire. Thim-Kit is the greatest option for an LMS website since it is as powerful as Elementor. (Thim Elementor Kit, n.d.)

5.4.2.5 Thim Elementor Kit Pro

The difference between Thim Elementor Kit Pro and Thim Elementor Kit is that the Pro version empowers you with more professional tools that speed up the workflow and allow you to get more conversions. (Elementor Benefits – Pro VS Free, n.d.)

5.4.2.6 Elementor

An Elementor Hosting website is perfect for web creators who want to focus on building their professional website hassle-free. This end-to-end solution gives you everything you need in one place: Managed WordPress Hosting, Elementor Pro Website Builder, Theme and Premium support, all tailored together to provide a seamless building experience and top performing websites. Additionally, it can be an excellent solution for anyone building websites for clients as it enables a straightforward handoff process and makes it easy for them to maintain. (Elementor, n.d.)

5.4.2.7 FileBird

FileBird allows to create virtual folders to categorize the WordPress media file uploads. So, when it is necessary to move files and folders around, it won't break the permalinks to the images in the page/post content. With FileBird Pro the developer can save time on WP media management, search for any files & folders, sort them out, add product image gallery, download/export media folders, etc. That's a great way to boost your admin workflow and productivity. (FileBird, n.d.)

5.4.2.8 Polylang Pro

Polylang Pro will be used to provide content in multiple languages. Polylang helps optimizing the time spent translating your site with some very useful extra features such as (Polylang Pro, n.d.):

- Better integration in the new Block Editor.
- Language switcher available as a block.
- Language options available in the widget block editor.
- Template parts translatable in the site editor (FSE).
- Duplicate and/or synchronise content across post translations.

- Improved compatibility with other plugins such as ACF Pro.
- Share the same URL slug for posts or terms across languages.
- Translate URL slugs for categories, author bases, custom post types and more…
- Export and import of content in XLIFF format for outsourced professional translation.
- Access to Premium Support for personalised assistance.

5.4.2.9 Duplicator

Duplicator is used for migration and backup purposes. Duplicator successfully gives WordPress users the ability to migrate, copy, move or clone a site from one location to another and serves as a simple backup utility. Duplicator handles serialised and base64 serialised replacements. Standard WordPress migration and WordPress backups are easily handled by this plugin as are zero downtime migrations. (Duplicator, n.d.)

5.4.2.10 WPFront Scroll Top

WPFront Scroll Top plugin allows the visitor to easily scroll back to the top of the page, with fully customizable options and images. WPFront Scroll Top plugin has the following features. (WPFront Scroll Top, n.d.)

FEATURES

- Displays a button when the user scrolls down the page.
- Scrolls the page back to top with animation.
- Link to an element within the page.
- Link to a different page using URL.
- Create text, image or Font Awesome button.
- Set any image you want.
- Hide on small devices.
- Hide on iframes.
- Pages/Posts filter.
- Auto hide.
- Async JavaScript.

5.4.2.11 Hide WP Admin and Login

Hide WP Admin and Login will be used to increase the security, by changing the /wp-admin login url. This simple and light plugin safely renames wp-login.php and closes access to the WordPress admin panel. The plugin does not change the code of the site, does not rename files and does not make any changes to server configuration. It can intercept admin pages requests, which means that it can work on any WordPress site, regardless of the server.

There are several levels of security in the plugin. When changing the login page, the administrator will receive an email with an access recovery link if you forget the login page address. In addition, the plugin will take care that the posts and pages addresses do not intersect with the new login page address, since if the addresses are the same, the login page will be looped.

The reasons we should hide WP admin and my WordPress are that dozens of bots' daily attack the WordPress admin area at /wp-login.php and /wp-admin/, brute force passwords and wanting to access your admin panel. Even if it is sure that you have created a hard and reliable password, this does not guarantee security and does not relieve the login page overload. The easiest way to hide the login page is to simply change its address to a unique one that will be known only to administrator. (Hide WP Admin and Login, n.d.)

FEATURES

- Hide wp-login.php, wp-signup.php and block access.
- Hide wp admin directory and block access.
- Allows you to rename login URL.
- Works with permalinks and without.
- There is an opportunity to restore access to hidden login page.
- Functions related to authorization, such as registration, password recovery, registration confirmation will continue to work in usual mode.

5.4.2.12 Complianz | GDPR/CCPA Cookie Consent

Complianz is a GDPR/CCPA Cookie Consent plugin that supports GDPR, ePrivacy, DSGVO, TTDSG, LGPD, POPIA, APA, RGPD, CCPA/CPRA and PIPEDA with a conditional Cookie Notice and customized Cookie Policy based on the results of the built-in Cookie Scan. (Complianz-GDPR, n.d.)

FEATURES

Cookie Consent Notice

- Configure a Cookie Notice for your specific region: European Union, United Kingdom, United States, Australia, South Africa, Brazil or Canada. Or use one Cookie Notice worldwide.
- Configure specific cookie consent per subregion, for example: European Union + TTDSG/DSGVO/CNIL or USA + specific states for CCPA/CPRA/CTDPA etc.
- Cookie Consent and Conditional Cookie Notice with Custom CSS and Customizable Templates. WCAG Level AA and ADA Compliant.
- Banner Templates include: GDPR-friendly Cookie Wall – Accept/Dismiss – Consent per Category – Consent per Service.
- Banner Templates also include; Dismiss on scroll, time on page or both based on legislation
- Cookie Banners and Legal Documents conform to WCAG 2.1 AA Accessibility Guidelines and ADA Compliance.
- No jQuery Dependency.

Consent Management

- Automatically configures the website based on wizard questions, WordPress scans and dedicated service and plugin integrations.

- Blocks 3rd party cookies like Google Maps, Facebook, Instagram, AdSense, Hubspot, Recaptcha, Twitter, ActiveCampaign, and many more.
- Custom integrations for plugins, themes and services are automatically detected.
- Blocks iFrames, like YouTube, Vimeo, Dailymotion embedded videos and Social iFrames e.g. Instagram, Facebook et al.
- Shows placeholders for blocked iFrames. Stills from videos and individual placeholders per (social) service.
- Script Center to control scripts, iFrames and plugins per category or service. With dependency functionality and placeholders.
- Proof of Consent: User consent registration that respects the GDPR data minimization guideline.
- Periodical Cookie Scan for changes in Cookies, Plugins, and 3rd Party services.
- Automatically detects if you need a Cookie Notice (also called a Cookie Banner or Pop-Up).
- Automatically anonymizes personal data for integrated statistics tools if needed.

Privacy Laws and Guidelines

- Ready for GDPR, ePrivacy AVG, RGPD, LGPD, DSGVO, CNIL, PECR, UK DPA, UK GDPR, CCPA, COPPA, PIPEDA, CASL, POPIA, Privacy Act 1988, Australian Privacy Principles, The "Marco Civil" and the Brazilian General Data Protection Law.
- Differentiate between GDPR, ePrivacy and DSGVO/CNIL or between CCPA/DNSMPI and NRS 603A, if needed.
- We closely follow the latest developments in the ePrivacy regulation, the proposed Cookie Law for the European Union, and other legislation world-wide.

Legal Documents

- A Cookie Policy: Generated by the developer with an easy wizard, drafted by an IT Law Firm.
- Do Not Sell My Personal Information: DNSMPI Page for CCPA/CPRA – if required. (Now called Opt-out Preferences.)

Integrations

- Detected Cookie Data is pre-filled from cookiedatabase.org, with clear and transparent cookie descriptions, which are continuously updated.
- Integrated with WordPress Privacy features. Export and erase personal data from our dashboard.
- Implementation of Google Tag Manager, Google Analytics, Matomo, Matomo Tag Manager, Clicky, Yandex, Jetpack and Burst Statistics
- Categorise your Cookies with Tag Manager or our Script Centre, if needed.
- Integration with the WP Consent API.
- Integrates seamlessly with Gutenberg, Elementor, Divi, Forminator, WPBakery, Monsterinsights, GADWP, Beehive, WPForms, Gravity Forms, HappyForms, Contact Form 7 <5.4 (CF7), Woocommerce, Easy Digital Downloads, WP Google Maps, Google Maps Widget, Local Google Fonts, CAOS | Host Google Analytics Locally and other popular plugins.
- Tested with popular themes and page builders.

● Gutenberg Blocks enabled.

Plugins from 5.4.2.1. to 5.4.2.8. are used for supporting all functional requirements, i.e. users that will have access to courses, lessons per course, quizzes per course, possible certificates, reward system, etc.

5.4.3 Analytics

Google Analytics will be used for analytics purposes. Google Analytics is a web analytics service offered by Google that tracks and reports website traffic and the mobile app traffic & events, currently as a platform inside the Google Marketing Platform brand. (Google Analytics, n.d.)

Google Analytics 4 is a new kind of property designed for the future of measurement (Google Analytics 4, n.d.):

● Collects both website and app data to better understand the customer journey.
● Uses event-based data instead of session-based.
● Includes privacy controls such as cookieless measurement, and behavioural and conversion modelling.
● Predictive capabilities offer guidance without complex models.
● Direct integrations to media platforms help drive actions on your website or app.

5.4.4 GDPR compliance

Complianz | GDPR/CCPA Cookie Consent (Plugins 5.4.2.12.) will be used to inform and have the visitor's consent for collecting their data. Also, the required contact info will be given for removing any of the visitor's data.

6. Conclusion

The deliverable focuses on providing the functional and non-functional requirements, alongside the techniques that were selected and followed to collect these requirements. Furthermore, it focuses on providing the technical specifications of the TRUST-FOOD platform, as they derive from the requirements.

Considering the functional and non-functional requirements, the elicitation techniques that were followed were the online survey technique for the functional requirements and the brainstorming technique for the non-functional requirements. The questionnaire has been responded to by 131 participants. The high-rated requirements are those that will be used for the TRUST-FOOD platform, as well as some medium-rated requirements that are considered critical. The non-functional requirements were defined according to the aspects or characteristics of the TRUST-FOOD platform that are essential to its operation.

The integration of the functional and non-functional requirements leads to the technical specifications. The technical specifications are the software tools and plugins that will be used to cover the requirements and to create an effective working platform.

Finally, it is worth noting that these Deliverable forms the basis for Deliverable 4.2, which concerns the development of the rapid prototype. Also, specific requirements that derived from this Deliverable may be useful in WP3 for the development of the e-learning courses.

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ANNEX I: TRUST-FOOD Functional Requirements Questionnaire

TRUSTFOOD WP4 - User Functional Requirements Questionnaire

This questionnaire aims to collect the information necessary to gather the most important functional requirements, in order to build the platform/system.

* Required

1. Choose your country: *

   Mark only one oval.

   - ⬭ Greece
   - ⬭ Ukraine
   - ⬭ Cyprus
   - ⬭ Netherlands
   - ⬭ Hungary
   - ⬭ Slovenia
   - ⬭ Italy
   - ⬭ Romania
   - ⬭ Lithuania
   - ⬭ Other: _____

2. You are a student/employee in : *

   Mark only one oval.

   - ⬭ University/ Business school
   - ⬭ Enterprise/Organization

3.   Sex *

Mark only one oval.

◯ Male

◯ Female

4.   Age : *

Mark only one oval.

◯ 25 and under

◯ 26-35

◯ 36-45

◯ 46-54

◯ 55<

5.   Educational level : *

Mark only one oval.

◯ High School

◯ Bachelor Degree

◯ Master/PhD

General Questions

6. How many minutes is the ideal time for every class/lesson in each course? *

Mark only one oval.

⬭ max 15 min

⬭ max 30 min

⬭ max 60 min

7. How familiar you are in a scale from 1 to 5 (1: not familiar at all 5: very familiar)   *
with :

Mark only one oval per row.

	1	2	3	4	5
E-learning platforms	⬭	⬭	⬭	⬭	⬭
Mobile applications	⬭	⬭	⬭	⬭	⬭

8. Would you prefer , every course to offer : *

Mark only one oval.

⬭ Videos of the course content

⬭ Presentations of the course content

⬭ Both of them

9.   Do you prefer the platform/system to have : *

Mark only one oval.

⬭ Different tabs for each task (courses,serious game, VI)

⬭ One Home tab with a list of different tasks (courses, serious game, VI)

⬭ Both of them

User Level and Suggestions

Web/application user's level : Each user can acquire a different level. The level will depend on the amount of courses the user has already completed.

1: Not important at all   5: Very important

10.   How important is for you : *

Mark only one oval per row.

	1	2	3	4	5
The platform/system has a reward method in training.	○	○	○	○	○
The difficulty of the courses depends on the web/application user's level.	○	○	○	○	○
To have suggested courses, depending on your searches on the application/website.	○	○	○	○	○
To have suggested courses depending on the web/application user's level.	○	○	○	○	○
To have suggested courses on the languages that you have chosen.	○	○	○	○	○
To have suggested courses depending on your educational level.	○	○	○	○	○
To have suggested courses depending on the level of your professional expertise.	○	○	○	○	○

11. How important is for you : *

Mark only one oval per row.

	1	2	3	4	5
The course lesson/chapter does not have to restart if you stop it in the middle of the chapter/lesson.	◯	◯	◯	◯	◯
The chapters/lessons or courses you have already taken , that are marked as taken in the platform/system.	◯	◯	◯	◯	◯
To have subtitle for each course.	◯	◯	◯	◯	◯
To create a forum on the website/application in order the users can communicate.	◯	◯	◯	◯	◯
The platform/system associates tests and examinations to courses.	◯	◯	◯	◯	◯
The platform/system uploads certificates, course registration sheets, and evaluations.	◯	◯	◯	◯	◯
The platform/system supports webinars	◯	◯	◯	◯	◯

12.   How important is for you : *

Mark only one oval per row.

	1	2	3	4	5
The platform/system allows changes to user information.	◯	◯	◯	◯	◯
The users are able to access the webpage and its features via a mobile friendly browser interface.	◯	◯	◯	◯	◯
The platform/system allows downloadable content for users in PDF from computer or mobile service.	◯	◯	◯	◯	◯
The platform/system prevents enrollment in a course when the user is not enrolled in a prerequisite.	◯	◯	◯	◯	◯

Reminder/Confirmation emails

1: Not important at all   5: Very important

13. How important is for you : *

Mark only one oval per row.

	1	2	3	4	5
The platform/system sends "reminder emails' to participants scheduled for a course/webinar.	◯	◯	◯	◯	◯
The platform/system sends confirmation and status emails to the users.	◯	◯	◯	◯	◯

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Google Forms

ANNEX II: TRUST-FOOD - Questionnaire RESPONSES graphs

Demographic questions
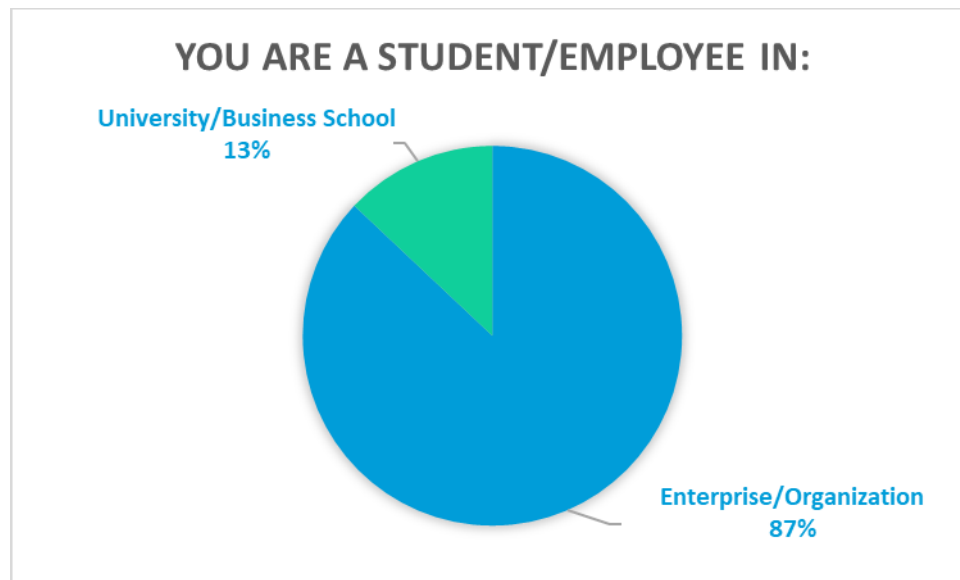
Figure 14:The percentage of students in universities and employees participating in the questionnaire.
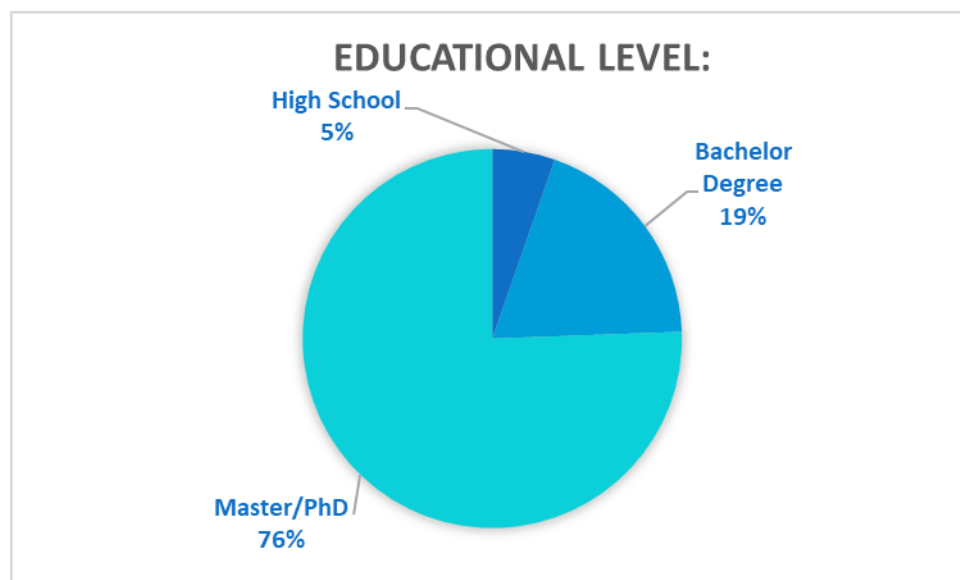
Figure 15: Educational level.

General Question about the platform and E-learning courses.
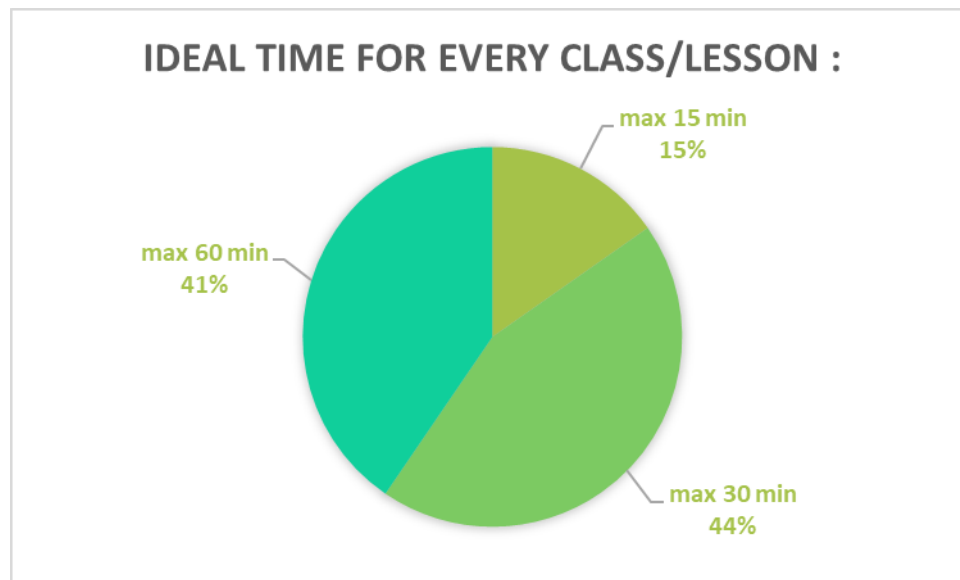
Figure 16:Ideal time for every class/lesson in each course.
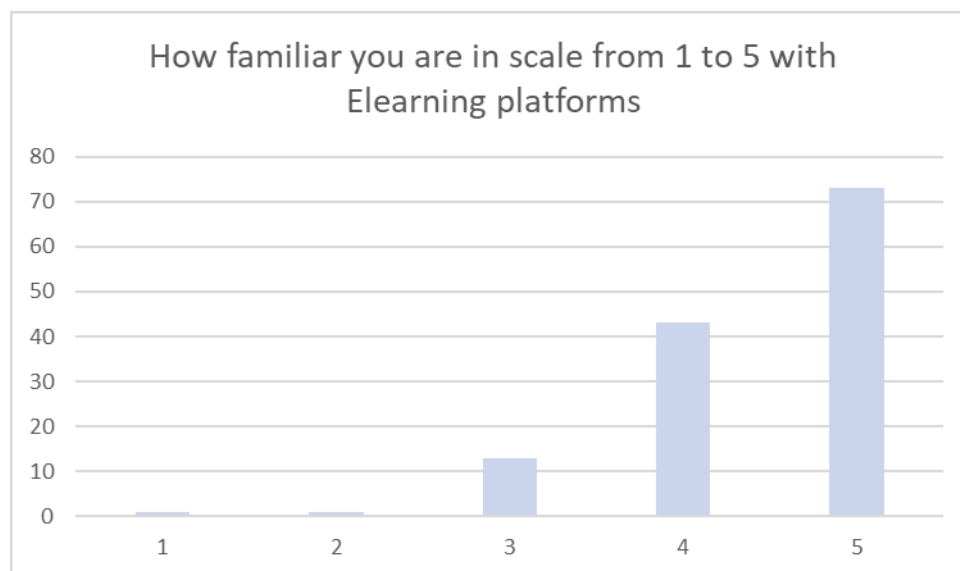
Figure 17: How familiar the questionnaire recipients are with the E-learning platforms.
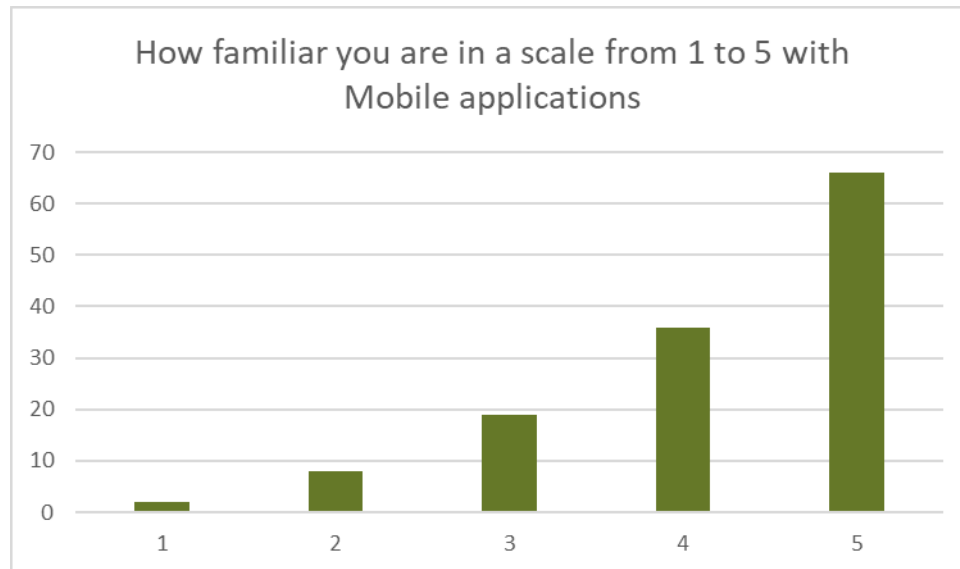
Figure 18:How familiar the questionnaire recipients are with the Mobile applications.
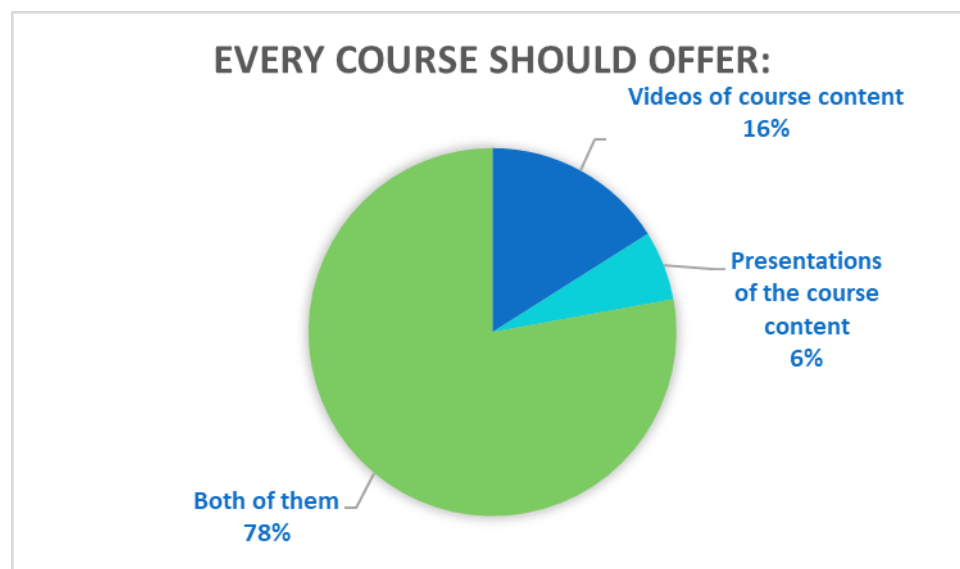
Figure 19: What files should every course offer.
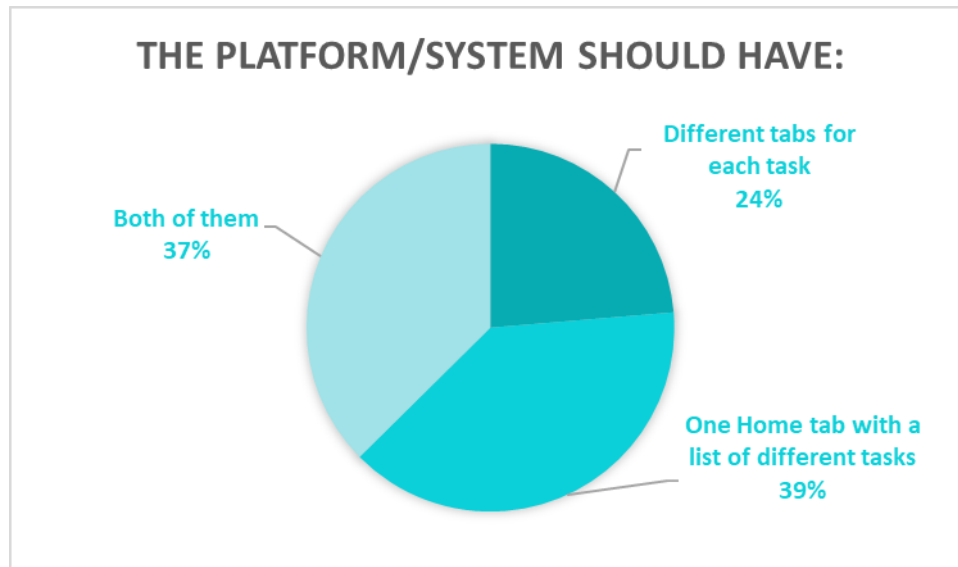
Figure 20: Ideal GUI for the platform.
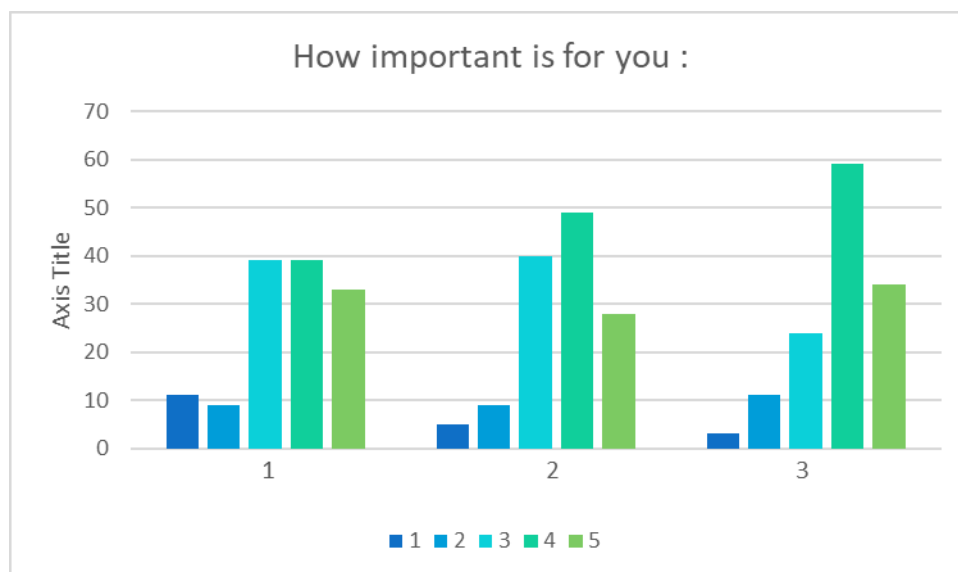
User level and Suggestions

Figure 21: User level and Platform's Suggestions (1st graph).

Figure 16: (1) The platform has a reward method in training. (2) The difficulty of the courses depends on the web/application user's level. (3) To have suggested courses depending on your searches on the application/website.
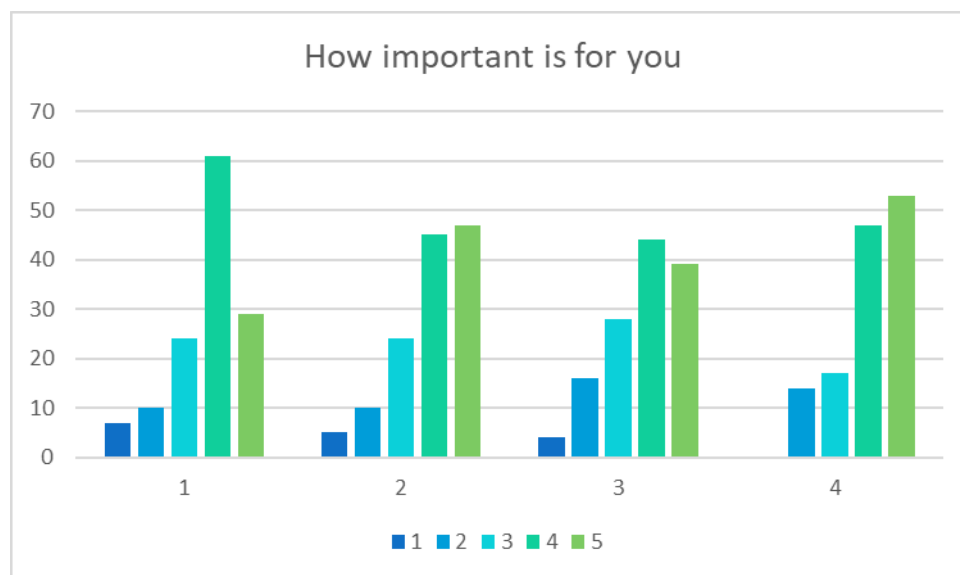
Figure 22: User Level and Platform's Suggestions (2nd graph).

Figure 17: (1) To have suggested courses depending on the web/application user's level. (2) To have suggested courses on the languages that you have chosen. (3) To have suggested courses depending on your educational level. (4) To have suggested courses depending on the level of your professional expertise.
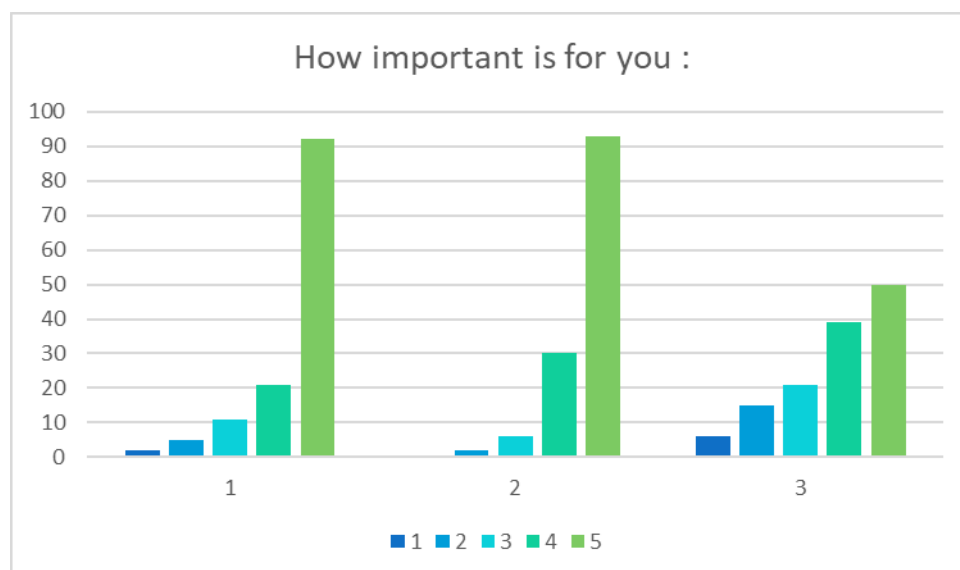
Courses Functionality

Figure 23: Courses Functionality (1st graph).

Figure 18: (1) The course lesson/chapter does not have to restart if you stop it in the middle of the chapter/lesson. (2) The chapters/lessons or courses you have already taken, that are marked as taken in the platform/system. (3) To have subtitles for each course.
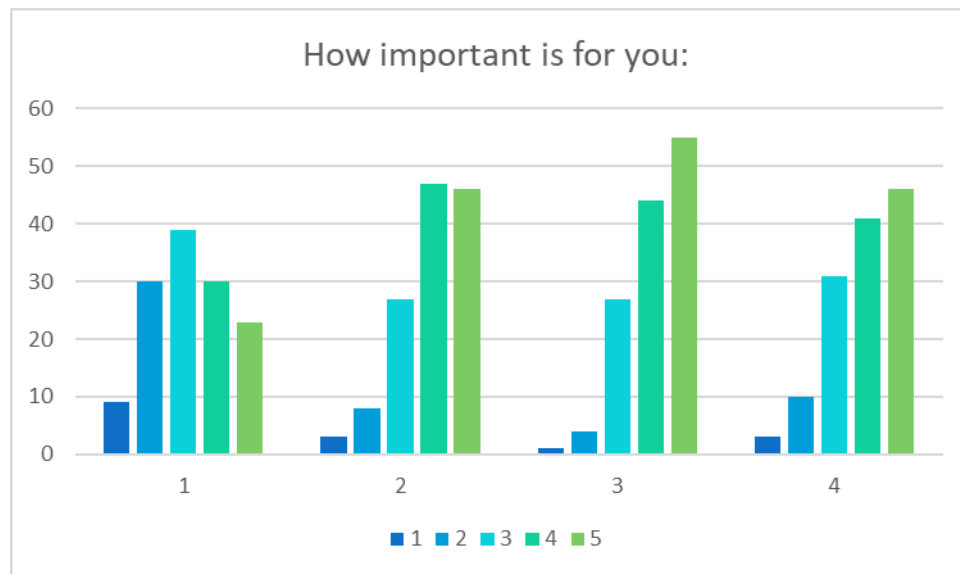
Figure 24:Courses Functionality (2nd graph).

Figure 19: (1) To create a forum on the website/application in order the users can communicate. (2) The platform/system associates' tests and examinations to courses. (3) The platform/system uploads certificates, course registration sheets, and evaluations. (4) The platform/system supports webinars.
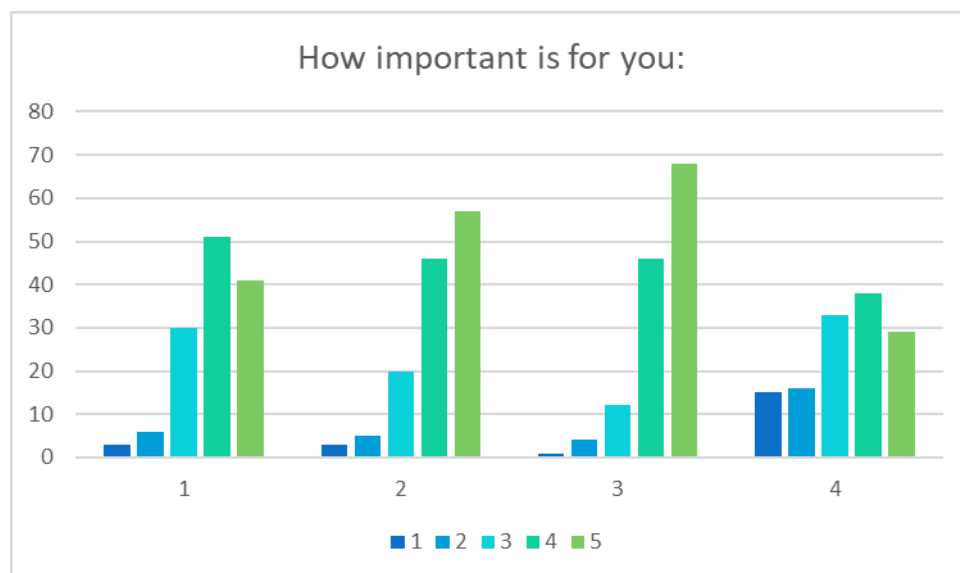
Platform/System Functionality

Figure 25: Platform's/System's Functionality.

Figure 20: (1) The platform/system allows changes to user information. (2) The users are able to access the webpage and its features via a mobile friendly browser interface. (3) The platform/system allows downloadable content for users in PDF from computer or mobile service. (4) The platform/system prevents enrolment in a course when the user is not enrolled in a prerequisite.
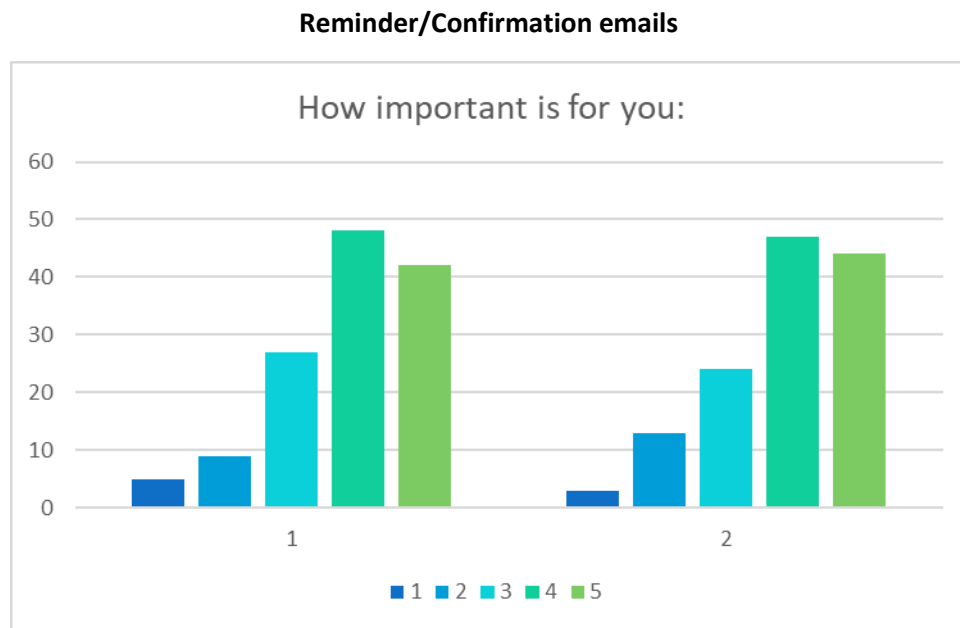
Reminder/Confirmation emails

Figure 26: Reminder and Confirmation emails.

Figure 21: (1) The platform/system sends "reminder emails" to participants scheduled for a course/webinar. (2) The platform/system sends confirmation and status emails to the users*.*