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METHODOLOGY FOR PILOT ASSESSMENT OF HIGHER EDUCATION TEACHERS, INSTRUCTIONAL TECHNOLOGIES DESIGN MATERIALS AND E-LEARNING PLATFORM[2]

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Abstract: The paper presents methodology for pilot assessment of higher education teachers, instructional technologies design materials and e-learning platform. The learning materials for instructional technologies design and e-learning space were developed under the project "HE Teachers and Institutions and Instructional Technology (HIIT)", Erasmus+ program; Action type KA220-HED - Cooperation partnerships in higher education. The methodology for pilot testing includes two phases: the first one – with 105 HE STEM teachers and the second 24 of them will put the skills into practice with interaction with 480 students from the 4 Universities, partners in the project. A blended approach has been selected for the external piloting of the platform and training contents of the HIIT project. The main purpose of the HIIT-Pilot Survey-Teachers is to get first-hand feedback from the 105 teachers as users on the online learning space and the learning content that the HIIT consortium will make available to all HE engineering teachers and professionals. From the participants in the piloting evaluation 8 (2 per pilot country) will be selected for a guided interview/dialogue, to gain deeper insight in their experience with the program, learning content and e-platform. A total of 24 HE teachers from the participants (6 per university partner) who participated in the learning activity and/or pilot testing will be mobilized to apply the skills and competences acquired and apply at least one of the tools in their online teaching activity. This will allow partners to assess and evaluate the impact on students in a real-life teaching environment.

Keywords: Instructional Technologies, Pilot Testing Methodology, Innovative Approaches

JEL Codes: I21

INTRODUCTION

The pilot methodology is under a project "HE Teachers and Institutions and Instructional Technology (HIIT)", KA220-HED - Cooperation partnerships in higher education, Fig. 1.

The target group is HE STEM teachers who do not know how to take maximum advantage of learning technologies and digital tools in subject-specific teaching and learning as well as their Institutions. The recent sudden shift to online and distance learning requires a different approach to instruction (especially when it comes to practice or lab-based courses).
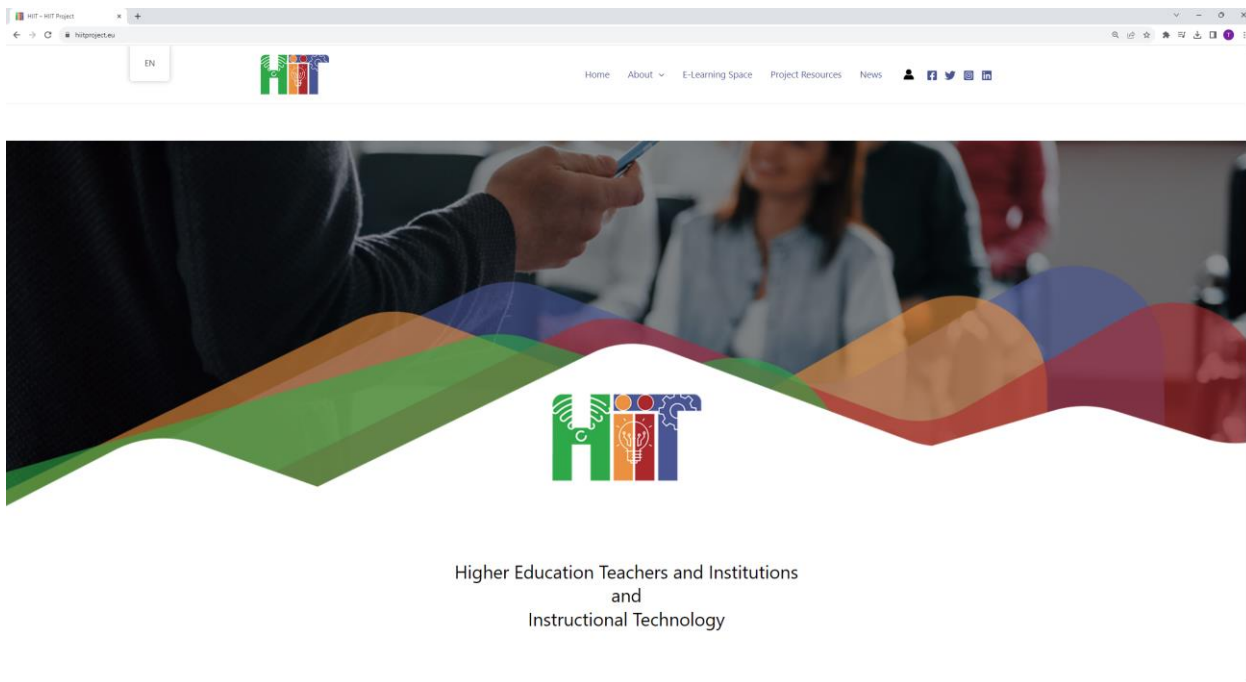
Fig. 1. The website of the project

HE STEM teachers must change their perspective to ensure that learners are not left behind. HE teachers are predominantly research focused and specialists in their specific domain. They are currently ill equipped with the skills, competencies and capacity required to absorb the principles of good educational design needed to create bespoke materials in short time frames. HIIT therefore aims to equip HE STEM teachers with the ability to integrate instructional technology into their courses by teaching them how to design, develop, use, manage, and evaluate the process of learning mediated by technology applications. It will also show them how instructional technology can increase the inclusiveness of students with learning barriers.

The aim of the paper is to present a pilot testing methodology for assessment of the e-learning platform, content courses and learning activity with the students.

EXPOSITION

The piloting testing will provide useful information and feedback on the created learning contents through online questionnaires, which will be disseminated by partners among the main target groups of the project.

The proposed evaluation is mainly focused on the external piloting of the HIIT training programme and platform including HE teachers and university students. It aims to help partners understand if the desired objectives and quality standards of the training have been either achieved or, however, not fully met.

In this way, if necessary, it would be possible to evaluate future improvements to the learning platform and its training contents and to draw up corresponding guidelines for recommendations and improvements on further reports.

HIIT piloting phases

The phases of the methodology are two:

1. HE STEM teachers 105 (20 each for NUIG; EGE; RUAK & UBI plus 25 from EOLAS associated partners and wider network) use the e-learning space to acquire the skills and competences needed. They will provide, through a survey, their feedback on quality, usefulness and relevance of the contents.

2. Subsample of 24 HE STEM teachers that participated in the first stage (6 each for NUIG; EGE; RUAK & UBI) will put the skills into practice, and/or design a course or lesson plan to realize and

evaluate their taught subject on-line, bearing in mind the learning contexts and circumstances, and will apply this in their interaction with 480 students (120 for each university).

The participants in the pilot testing phases will be selected according to the criteria defining the HIIT target group: "HE STEM teachers, and they will be most intensely and frequently involved in the activities in the participating countries".

For the piloting activities, the partners have engaged in awareness raising and recruitment activities with the HE teachers from the start of the project, and have already identified those who have expressed more interest in the project and have shown willingness to adopt new approaches in their teaching activities.

No formal criteria are established, the project team has interacted intensively with the HE teachers, perfectly placed to evaluate their adequateness for the participation in the activities.

For each skill there are 5 questions with four answers which could be "1 - not at all", "2 - little / low", "3 – average", "4 – very/high". The maximum points are 20, minimum – 5. There is a scale for evaluation of the learner's skills depends on the received points.

HIIT piloting objectives

The objectives of this evaluation methodology focus on the following fundamental questions:

1. Do the training contents developed by the HIIT consortium meet the needs and expectations of the target group (i.e. university teachers specialized in Engineering education) in terms of boosting their creativity and innovative skills, as well the one´s of their students in their on-line educational activity?

2. What would be the main improvements to be implemented in the e-learning platform and/or in the training courses offered?

3. How can the HIIT training improve the professional activity of its target group and thus the acquisition of transversal skills and abilities of engineering students who are ultimately the main beneficiaries of the training?

4. How do HE teachers and students feel after the external piloting of the HIIT programme in the classroom?

HIIT piloting methods

A blended approach has been selected for the external piloting of the platform and training contents of the HIIT project. In this sense, the participants in the piloting should be able to navigate the e-learning platform independently, testing the contents and utilities provided therein and, in parallel, they will have the opportunity to assess the different courses developed by the consortium and all the creativity tools that make up the HIIT methods and the Toolkit (with a wide range of methods and tools aimed at strengthening the Instructional technologies skills of Higher Education teachers in on-line engineering education).

In order to assess these different aspects, it is proposed to carry out two online surveys aimed to assess the level of satisfaction of the participants and their opinions or recommendations in this respect.

The online forms will be disseminated by all partners among the participants of the pilot that they have managed to engage. Once the necessary information has been collected (it is estimated that approximately 105 participants will take part in the external piloting phase), a country report will be drawn up, summarising the main conclusions drawn from the analysis of the responses obtained and, finally, RUAK will prepare a joint report in which all the relevant information for the purposes of the evaluation will be combined and summarised including remarkable conclusions and proposed improvements.

The tools proposed to carry out the evaluation of the training will be created in English, as this is the language in which the training is offered on the e-learning platform. The translation and dissemination of the quality surveys in their local languages is at the disposal of the consortium partners, aiming to facilitate the understanding of the tool and the data collection among participants of the testing activity.

The guided dialogues/interviews are held preferably in the week after the finalization of the learning activity.

HIIT pilot testing with teachers

The main purpose of the HIIT-Pilot Survey-Teachers is to get first-hand feedback from the 105 teachers as users on the online learning space and the learning content that the HIIT consortium has made available to all HE engineering teachers and professionals (as well as to any other user who wants to learn about creativity and innovation techniques in on-line contexts and how to apply them, who will also benefit from the instructional technology courses and materials available at the platform).

In order to assess the online learning platform and test the HIIT learning content, the methods and tools participants must be registered with their email address and password of choice in the HIIT online platform.

In order to carry out a proper evaluation of the functionalities of the platform, participants in the external testing phase will be asked to fill in a set of questions on the user experience in relation to the HIIT platform.

HIIT pilot testing with students

The students will give feedbacks related to HIIT techniques.
The pilot testing with teachers and students is realized in google forms like fig. 2 and fig. 3.
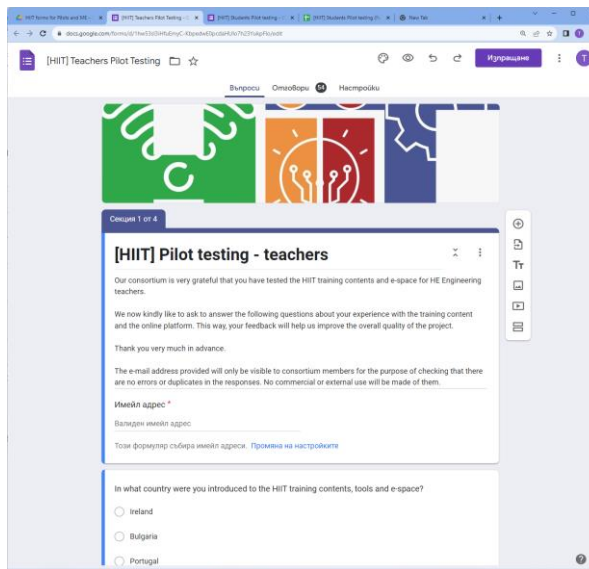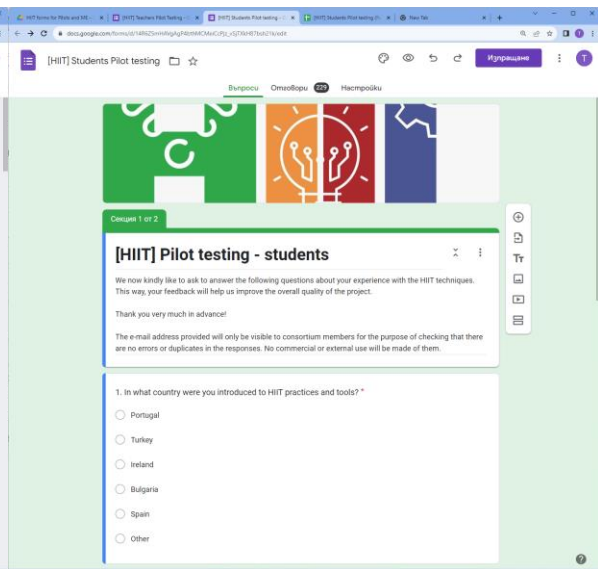

Fig. 2. Pilot testing for teachers   Fig. 3. Pilot testing for students

From the participants in the piloting evaluation 8 (2 per pilot country) will be selected for a guided interview/dialogue, to gain deeper insight in their experience with the programme, learning content and e-platform. The aim of these dialogues is to gain better insight into the adequateness of the using e-platform and contents to acquire the foreseen skills and competences, and to drill into the impact the HIIT results and learning programme have had on the participants.

The recommended time for the activity is 30 to 45 minutes, providing sufficient time for the participant to express their thoughts.

1. What part of the e-learning platform and learning content did you find most useful and interesting, and why?

2. Did you miss something in the content, activities or resources? If yes, explain what and why you think it should have been included.

3. How do you think the participation in the program has changed your skills and competences and attitudes towards changing your teaching approach?

4. Do you think that you will apply on a regular basis what you have learned in your teaching/training activities? Please explain why?

5. How do feel the change in teaching approach will impact your students in terms of motivation and skill acquisition?

HIIT pilot questionaries analysis

The SPSS software will be used for analysis of the questionaries. To analyse for simple percentages, we can use the "Frequencies" command. The Frequencies method (Analyse, Descriptive stats, frequencies) can be used to calculate the total number of votes for each type of transport by putting the five variables into the variables box. The percentage columns are of interest, the "Valid Percent" is calculated after the missing values are ignored. The "Statistics" button on the Crosstabs dialog lets you request the Chi-square statistics. Chi-square is a statistical test used to examine the differences between categorical variables from a random sample in order to judge the goodness of fit between expected and observed results.

CONCLUSION

The pilot testing methodology for HIIT target groups is designed. There are integrated two main parts for assess the online learning platform and test the HIIT learning content, the methods and tools. The objectives are to help partners understand if the desired objectives and quality standards of the training have been either achieved or, however, not fully met. The target groups are 105 teachers and 480 students.

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