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Instructional design for distance learning conducted by the National Institute of Justice consistent with the characteristics of the profiled target group of learners

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Abstract: This paper presents how target groups of business professionals work on the learning design construction for distance education. The chosen target group consists of jurist and the paper describes how this profession characteristic determines the core of the learning design in National institute of justice. In addition the paper offers a set of questions for each stage of learning design construction which are common for any profession target group.

Keywords: distance learning, instructional design, methodology, target group, jurists, ADDIE, National institute of justice

I. Introduction

Instructional or pedagogical design is the practice of maximizing effectiveness, efficiency and attractiveness of education and other related experiences for trainees. This includes plans and training models aimed at achieving the learning objectives. The development and the description of that consistency and arrangement of learning activities that trainees perform during the academic unit (course, module, lesson plans and so on..) in order to achieve certain educational purposes, including the means and mechanisms that support them, is called instructional design (ID) [7]. According to another well-known definition of Som Naidu (2003), pedagogical design is design related to the planning of educational activities that are tied to achieving specific, predefined learning outcomes.

The instructional design is particularly important because of the fact that coordinates functions of modern technology with the educational needs of the trainees [2]. It can be really well presented in distance form of education.

In Bulgaria the National Institute of Justice (NIJ) is the only public institution in Bulgaria for Continuing Vocational Training (CVT) of staff in the judiciary. The main objective of the National Institute of Justice is to improve the efficiency of justice through quality professional training and qualification of magistrates and court administration [4]. Current or continuous professional training of jurists is acting in order to build and continuously develop skills and competencies. Therefore the basis of the training relies on customizable principle and most of the training are not compulsory.

Distance learning as a form of ongoing training is offered by NIJ since 2009 and the currently developed methods of teaching and learning are one of Europe's leading institutional CVT for magistrates and court administration along with that of England and Portugal [8].

The report's main objective is to derive approaches to characterize the target group of distance learning carried out by the National Institute of Justice. The target group is seen as a key component of instructional design of training.

To achieve this objective the following tasks are set:

- To analyze the developed instructional design for distance learning of magistrates and court administration at the National Institute of Justice in terms of the influence of the specialization as a factor, and justify the choice of learning resources used in training;
- To propose key questions about displaying (determining) the characteristics of specialized target groups.

This report deals with the impact of the target group specialization when developing instructional design.

The function of the Introduction is to establish the context of the work being reported. This is accomplished by discussing the relevant primary research literature (with citations) and summarizing our current understanding of the problem you are investigating. State the purpose of the work in the form of the hypothesis, question, or problem you investigated; and, briefly explain your rationale and approach and, whenever possible, the possible outcomes your study can reveal.

II. Exposition

The well-developed instructional design is based on a learning model. In the given example with distance learning at NIJ, the instructional design is based on a cyclical learning model ADDIE (Analysis, Design,

Development, Implementation, Evaluation), where after each evaluation stage follows an analysis phase and improvements [1]. This is a general model that combines key components found in any other known models. ADDIE is applicable to any type of training, including web-based [10]. To be effective instructional design must be considered simultaneously by three key factors - the purpose of training, target group and available financial and human resource organization. Their proper definition and the definition of existing dependencies is part of an instructional design methodology. This study focuses on the analysis of the target group and putting the professional performance as a component of the design.

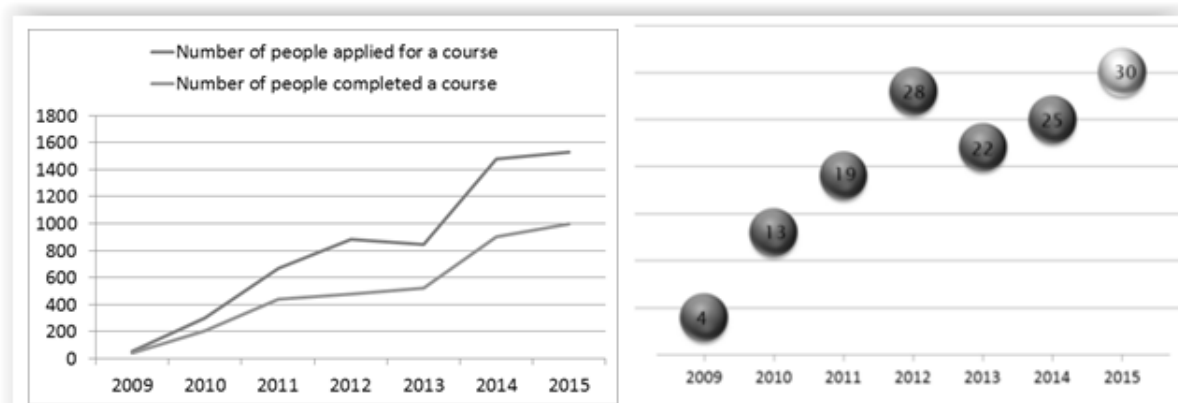
To be initiated and properly completed, any analysis must have objectives to achieve. The analysis of the target group aims to increase the effectiveness of the training as bringing out common for the chosen group distinctiveness. These distinctiveness should be considered when constructing an educational design. For example, features such as workload, mobility, work performance at high or low levels of stress, predictability of future tasks, average age of the trainees and others, defines the requirements how to structure a course or learning unit in a way the information to be most optimal transmitted and utilized respectively [5].

A distance learning key feature is that it is a "learner-centered". The challenge in front of any training methodology is to meet the individual learning style of each student (Kolb, 1970). A study of the target group of professionals focuses on the profession features itself and brings out one summarized learning style of the community. It should be considered not only the existing methods for adult learning [3], but also professiograms [2] and job descriptions. These three sources of information complement each other and help out a common learning style of the profiled target group (community).

Based on the specific professional characteristics the appropriate learning resources can be adequately chosen and structured in a manner that meets the course objectives.

In this paper the training methodology developed by NIJ will be reviewed in order to derive generalized learning style of the community. The methodology gives good results which can be detected by quantitative indicators presented in figure 1.

Figure 1. Quantitative indicators - Number of learners and number of courses



To conduct an analysis and to put a methodology is presumed that the main objective of any training it is to be effective, efficient and sustainable. On this basis, the responses to the consistent questions raised at the stage of analysis of the ADDIE model [1] are in a big help:

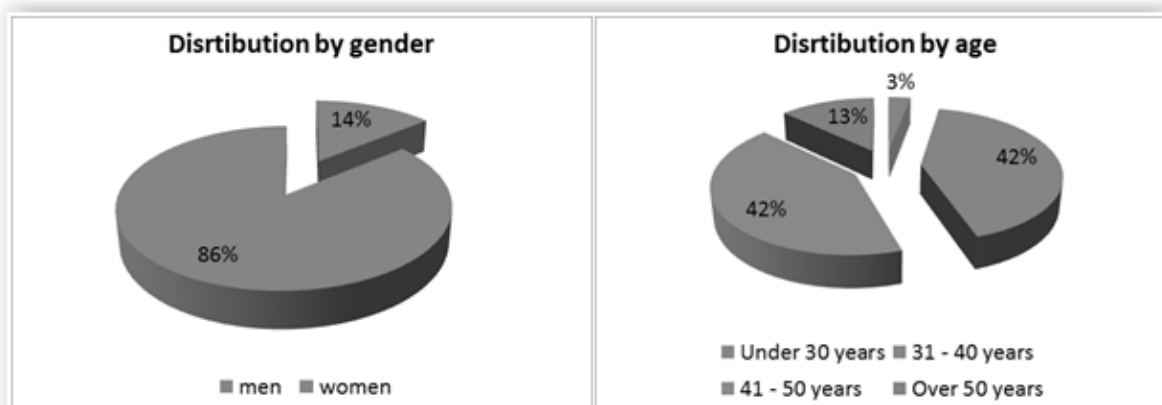
- Defining the target group - Who are your learners?
- Profiled characteristics of the target group - How can they be characterised?
- Motivation of the target group - How can they be motivated?
- Determining the knowledge of the target group - What do they know?
- Determination of baseline knowledge of the target group - What do they need to know?
- Identify suspected problems - What obstacles and difficulties exist?

III. Defining the target group

This is a general characteristic of the target group - sex, middle age, education degree, level of researched task involvement, etc. In the given example with the National Institute of Justice, all distance learning courses are aimed at practitioners already magistrates and court administration. In June 2015 a general target group study was conducted by a NIJ e-learning expert where the focus was on learners involved in distance courses[9]. A standardized written questionnaire via electronic form in Google Dox was used. The questionnaire was completed by 132 people from a total of 250 expressed willingness to participate in online courses listed. The number of completed questionnaires and their distribution in major categories ensures representativeness of the sample.

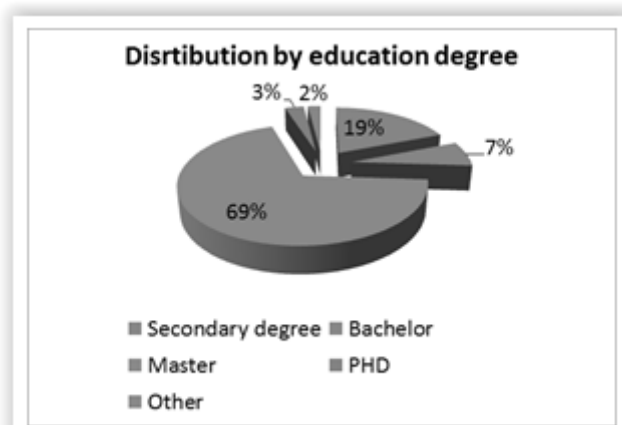
- Distribution by gender and age (figure 2)

Figure 2 Participants distribution by age and gender



- Distribution by education degree (figure 3)

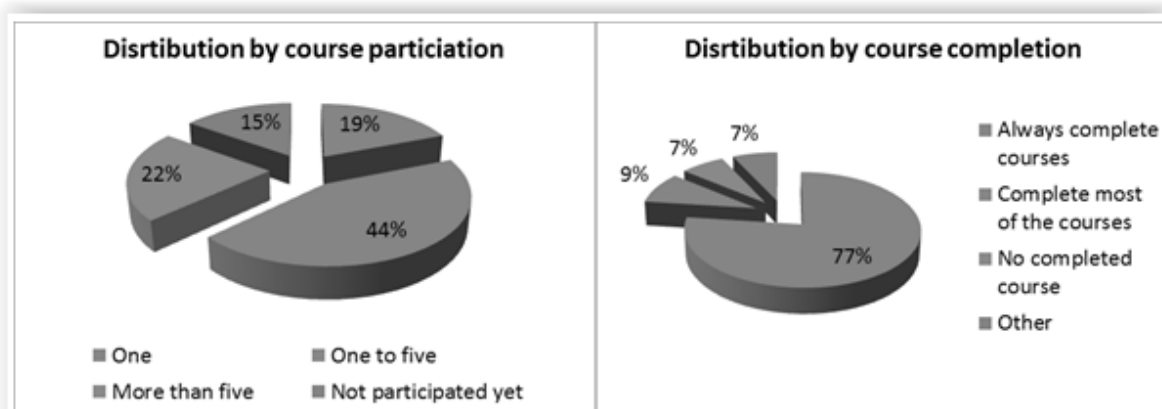
Figure 3 Participants distribution by education degree



Based on the collected information an overall profile of the included participants in the survey is brought out. These are professionals working in the judicial system in Bulgaria. The main group of them is in the range of 31 to 50 years (42% in the group 31-40 years old and 42% in the group 41-50 years), mainly women (86%). Educational qualification for 69% of the respondents is master degree. The majority of the whole group have been involved in one to five online courses for ongoing training (44%), but a significant part (22%) have participated in more than five online courses. From all participants engaged in the poll 77% of them graduate all the courses they participate in.

- Distribution by course activity and course completion (figure 4)

Figure 4 Participants distribution by learning activity



In most cases the general characteristics of learners is collected through registration forms on platforms for web-based learning. For the purposes of e-learning in NIJ an LMS platform Moodle was used to develop a web

training portal [4]. In this case, the registration form is used to collect profiled data on potential learners - office, institution, village, etc. Simultaneously the registration form is an automatic filter, which allows to register only persons who are staff of the judiciary. It is more accurately to say that using the properly customized LMS platform, The National institute of justice distributes e-learning qualification courses to its target group. In common the general characteristic of the target group is gaining through a set of defined questions. It is the basis for all subsequent analyses. No matter what the aim of the profiled question is, the analysis of all output data must be done on the basis of information from the general characteristics of learners. This general characteristic is needed on one hand to create a common idea among the organizers of the training of what are the basic needs of the learners and on other it is a tool for filtering general human stream on the Internet to specialized professional community.

IV. Profiled characteristics of the target group

The main method to gather information from the participants in the e-learning process is the feedback. The feedback is a powerful tool, which on one hand gives an answer how to choose a proper methodology for a qualification course and on the other to rate the same course quality. Therefore the gathering of information should happen one time on the entrance (input poll) in order to measure the attitudes and second time on the exit (outgoing poll) to evaluate the results.

The questions in the input poll must be built on basic and specific concepts such as available time resource, preferred media elements and interactivity, motivation and expected difficulties. It is good the questions to be closed and of the type "single choice". Overall the information from the incoming poll answers the question **"How to develop a proper methodology for training?"**. Outgoing poll verifies whether and how the proposed methodology meets the needs of the target group and how it can be improved. The questions are focused on learners satisfaction in the length of the course and learning units, the selection of used educational resources, quality of content and organization, and are mainly related to performance evaluation. They measure the participants' motivation level compared to the beginning as well as difficulties encountered. Prevalent open-ended questions collecting specific impressions and recommendations, as well as questions of a "rating" type. The information from the output poll answers the question **"Did I develop the proper methodology for this target group?"**

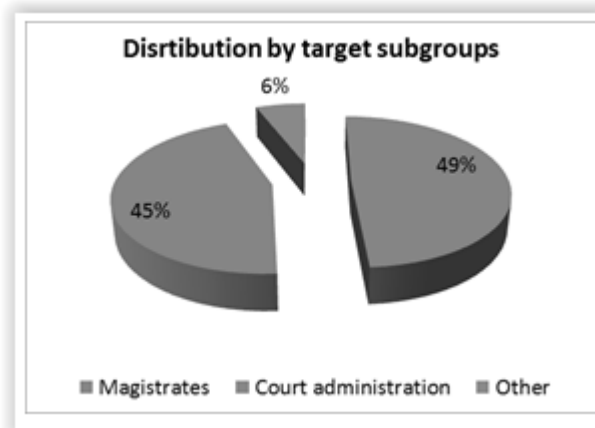
Through the built-in function modules and platform resources organizers conducting e-learning courses at NIJ developed the following two standard questionnaires to characterize the target group:

- Incoming poll 'Preferred work style' - generally available to all registered users of the platform. The results are anonymous.
- Outgoing poll after each conducted training - writable for this course participants. The results are anonymous.

The incoming questionnaire "Preferred work style" analyses the individual preferences of the learners and it is available for 18 calendar months. At the end of the period the answers and individual preferences are analysed by the organizers and mentors to make a summary of the community and to outcome a common profiled target group characteristics.

The first question is aimed at determining the affiliation of the learner to one of the two major sub target groups (figure 6) - magistrates (832 - number of registered magistrates in the web based platform) and judicial officers (768 - number of registered officers in the web based platform)

Figure 6 Affiliation of the learners to one of the two major sub target groups



On figure 6 is shown that the two professional communities of magistrates (49%) and officers (45%) are distributed relatively equally. This case allows the parallel development of two equal and interconnected methods for training. Due to the specifics of the legal profession most of the trainings conducted by the NIJ are open to all participants (magistrates and court administration). The developed methodology must satisfy the requirements of

all participants while follows the profile of each sub target group. The results of all subsequent issues are analysed considering the affiliation of learners shown in the figure.

The information collected by the following questions from the incoming poll is about:

- workload of participants (figure 7) - reports the optimum duration of the course itself, and one learning unit (module);
- preferred format of lecture materials (figure 8) - gives a suitable selection of media elements for this target group;
- preferred form of practical exercises (figure 9) - explores the appropriate level of interactivity (dialogue) for trainees;
- expectations / attitudes towards distance form of learning (figure 10) - reports the level of participants' readiness for this form of training and simultaneously draws attention of the organizers on what to focus on;

Figure 7 Workload of participants

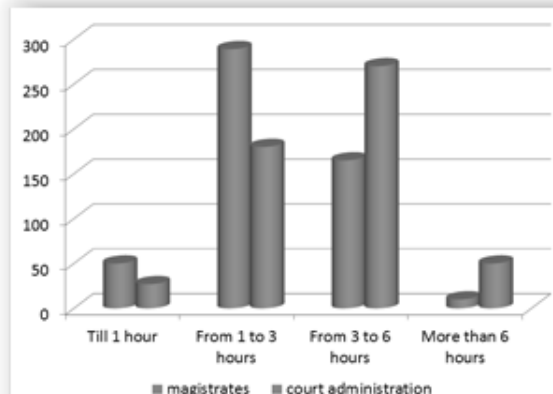


Figure 8 Preferred media elements

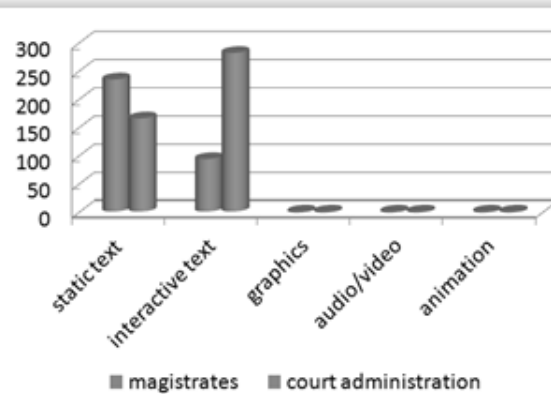


Figure 9 Preferred level of interactivity

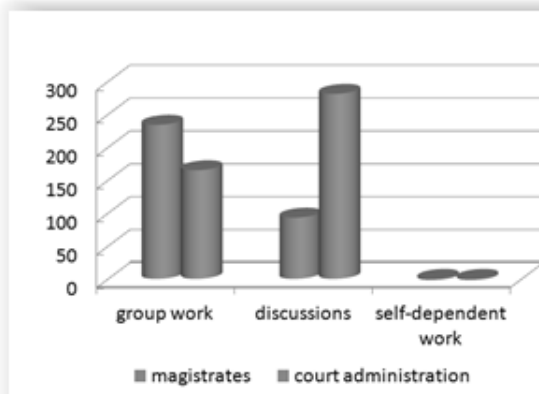
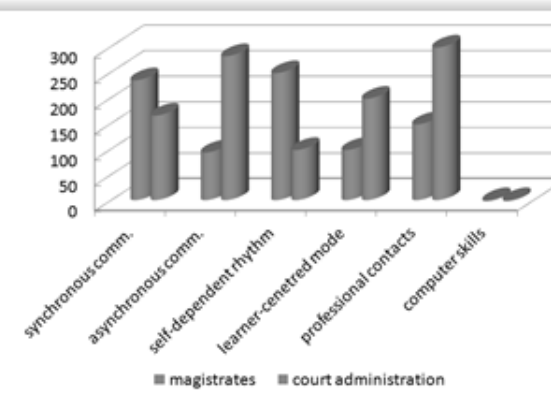


Figure 10 Attitudes towards e-form of learning



The trend from the answers of the incoming poll (figure 7 and figure 8) is that the group of magistrates has the highest workload and the least time resources to study the lectures. In contrast, the group of judicial officers offers a resource for longer courses and teaching units, but needs clear practical lessons and possibly short lecture materials with a clear theme separateness. Lecture materials offered in distance trainings at NIJ are developed in two formats: PDF format (static text) - meets a group of magistrates and allows for the preservation of material to work outside the course. E-book (interactive text) as the material is segmented into small pieces with a distinct structure as required by court officials.

The practical exercises (figure 9) also outline various requirements. The group of magistrates prefer group, discussion mode while the group of judicial officials has attitude to self-work exercises and direct connection with the teacher. In trainings at NIJ practical exercises are developed again in two formats - to each learning unit must attend a discussion forum where cases put a group discussion. Often it includes practical assignment for individual case study that is evaluated directly by the teacher.

The next question in the input survey (figure 10) provides information on the benefits that the target groups identified in distance form of learning. Most of the respondents pointed out as an advantage the possibility of asynchronous work at a convenient time. The preferred communication resources are asynchronous communication (forum, private messaging, e-mail). In case of manifest desire NIJ provides resources for conferencing between participants and teacher /form of a virtual classroom/. Pointing out the advantage or disadvantage in the chosen form of education gives a very clear idea on what the organizers in the developed methodology should be emphasized and what to avoid.

As incoming poll is accessible by all users of the web-based platform, it is also used as a tool to assess the overall navigation structure of the platform. The last question in this survey provides information on the common organization of the platform and whether it is sufficiently easy to use. The group of magistrates clearly states that require direct access to courses and learning materials for not wasting a time to navigate. The developed platform has a direct navigation - from the panel for authorization to list with courses to which the learner is enrolled to. It also provides direct access to additional systematic legal literature by developing the current system with single sign on (SSO) between the platform for e-learning and electronic library of NIJ.

The Outgoing poll is based on level course and should be completed by all learners. The results are anonymous. In the context to characterize the target group, this survey assesses the learners' attitudes and requirements for the quality of the already proposed service "distance learning". Participants assess the quality of curricula, teaching quality and organization of this course. This survey asked questions about the extent of covering the expectations of the learners from the course, the difficulties encountered and the degree of practical applicability of lessons learned [3]. The survey measured how far the course objectives have been achieved.

To analyse the results the responses from all outgoing questionnaires should be summarized. The objective is to assess whether it can be pulled out some common trend. Usually this type of poll at the end of training is called "Happy sheet" [11] because of the high emotional level after completing the course. That's why this survey is very useful if there is criticism. That outgoing feedback refers to be the needed "road sign" that points out in the right direction of development.

V. The Motivation of the target group

Figure 11 E-certificate for successfully completed e-learning course with unique number and QR code



The next key point in the analysis stage in ADDIE is about the participants' motivation. The motivation is underlying factor for the successful implementation of a distance learning. The methods for organizers to know about the motivation of the profiled target group are to observe in any possible way their practice and to understand fully the practical application of the lessons learned. Since the participants are adults, the most expected type of motivation is that one derived from need for personal development and career growth. In the case of NIJ, trainees enrol for courses voluntarily, so motivation is internal. The trainings are professionally oriented, so participants can look at them for knowledge and skills upgrade, for response to a specific problem or for socializing with colleagues. The selected platform for training and the course methodology should meet these expectations.

Important thing to take into consideration is whether there is a certificate of trainings and whether it is practically valuable. For the researched target group higher the number of successfully completed training at the NIJ higher the testimonial annual evaluation. There is a developed functional module for generating certificates when completion criteria in the course are achieved. The certificate is issued with a unique number, QR code and a mechanism to verify the authenticity of the certificate and if it is issued by the National institute of justice, Bulgaria (figure 11)

VI. Determination of knowledge of the target group

Clarifying the level of knowledge of learners apply mainly when the training course aims transmission of new knowledge and skills. Determining the entry level of learners' knowledge is extremely useful for the teacher. It helps to identify possible difficulties for the trainees, as well as to structure in correct sequence the provided lectures. A very useful tool for this purpose is the test set at the beginning of training. For the researched target

group the evaluation and determination of knowledge is left entirely in the hands of learners, through self-assessment tests, whose results are seen by themselves. If as course participants the professionals are divided into teacher and students, then in practice they are equal colleagues with different professional specialization. In this specific target group the input evaluation of the knowledge from a teacher would lower the incentive and motivation to learn. Therefore, to choose the right approach for identifying the incoming knowledge is to be answered the following questions: "What is the purpose of the training?", "How would affect a placement test motivation for learning?" and "What tools to determine problem areas in the knowledge available and adequate are they for specific target group?"

VII. Determination of baseline knowledge of the target group

The determination of baseline knowledge assessment represents the achievement of expected learning outcomes. Normally, the output level of knowledge is determined by the initial level of knowledge, but it is not mandatory. In NIJ the measuring the achievement of expected results is done through compulsory for all learners final test developed by the teacher. A properly designed tool for determining the required level of knowledge should reflect whether the objectives of the training are achieved, whether the expected results are justified, and how well educators and learners have done with training. To be properly determined baseline level of knowledge is necessary to have properly set objectives for each training as well as expected results

VIII. Identification of anticipated difficulties and obstacles

Reporting any difficulties of a target group when passing a e-learning course is associated with a good knowledge of both the characteristics of this group and the characteristics of distance form of learning. To identify problem areas one need to answer a series of questions such as: "Have potential learners internet access and sufficient computer literacy?", "Is a working language in the training determined?", "Do the peculiarities of the target group allow publication of personal and professional data on the Internet and how information should be protected and confidential? ", "Is it clarified the issue of copyright training materials? ", "Are there precautionary measures to protect the information? ". In the current example with NIJ some of these issues are regulated by rules and agreements which are provided for the consent of all participants in the process of e-learning. To overcome other difficulties are created operating procedures and are undertaken hardware and software measures. For a concrete example could serve specific feature of the studied target group regarding the lack of free time for training. As a solution NIJ provides mobile application platform for e-learning, whereby (installed on their mobile devices) learners can participate in training at time and are not dependent on the presence of computer

IX. Conclusion and need for further research

The determination of the characteristics of specialized target groups in trainings offered by the National Institute of Justice is a systematic process of information gathering, analysis, implementation and evaluation. Knowing the target audience shows how to develop the learning design and what resources to use in order to focus in the right direction, thereby to reduce the error rate and to increase tremendously the efficiency of learning.

The need for training is inextricably linked with the need to develop and move in the desired direction. To be competitive, professionals, regardless of their field of action are necessary to build knowledge and skills at a speed equal to or greater than that of the development of the social community or the market. Knowing the characteristics of the target group allows high quality of the education based on the specific needs of learning and consequently the specific need of social community and market. The high quality professional learning gives high quality of the end product or service.

What is important to be done in the close future is to summarize a common methodology that gives clues how to do an analysis of any target group of professionals. Based on these clues the right methodologies could be developed with less efforts and resources.

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