

OPTIMIZING DISTANCE LEARNING EDUCATIONAL PROGRAMS: THE RATIONALE AND METHODOLOGY OF AN INNOVATIVE AND EFFECTIVE FRAMEWORK

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Abstract

Background: The project "Optimizing Distance Learning Educational Programs" (ODLEP) aims to boost the distance educational programs in Greece, Romania, Italy and Serbia by creating an innovative framework for selecting the most suitable instructor for a given group of students for a competent and successful online distance learning program. **Methods:** Six participating Institutions (Aristotle University of Thessaloniki, University of Macedonia, University of Ioannina, Universitatea Lucian Blaga Din Sibiu, Università telematica Degli Studi, Univerzitet U Nisu) from four European countries partnered to establishing a theoretical framework and deliver an online platform and policy recommendations for the successful matching of instructor/educator with students for online courses. A series of questionnaires evaluating desired characteristics of instructors (personality, teaching styles and preferences) and students (personality, learning styles and preferences) were completed by 257 Instructors (Age: M=49.6, SD=10.1; Sex ratio M/F: 55/45%) and 644 students (Age: M=33.6, SD=11.1; Sex ratio M/F: 52/48%) as of September 2023. **Results:** The rationale and processes selected to provide the best approach to match students and Instructors is presented in detail. Interestingly, the vast majority of Instructors (85%) prefer face to face educational approaches, whereas students seem to accept distance education very well, as 41% opted for distant educational over face-to-face approaches. Almost all instructors (98%) have delivered at least one semester of distant education courses (range: 1-50), whereas almost half of the students have attended at least one semester of distant education courses (range: 1-42). **Conclusions:** This is an ongoing project expected to be completed in January 2025. Our preliminary results indicate that distance learning is of interest to almost all educators and a significant proportion of students. There is, therefore, a need to delineate how educators and students think about distance learning, what their expectations are and how they prefer to deliver and acquire knowledge and training. Knowledge on these factors will facilitate the best possible match between students and instructors in online courses and will contribute to successful distant learning experiences.

Keywords: Distance Learning, personality, learning styles, preferences.

1 INTRODUCTION

Distance E-learning programs constitute an integral part of the educational process [1]. However, distance Learning "is moving faster than our empirical understanding of e-learning" [2]. The project "Optimizing Distance Learning Educational Programs" (ODLEP) aims to understand the human factors that contribute to successful distance learning experiences and to boost the distance educational programs in Greece, Romania, Italy and Serbia by creating an innovative framework for selecting the most suitable instructor for a given group of students for a competent and effective online distance learning program. More specific aims of the project include the detailed systematic assessment of the required characteristics for the most suitable instructor/educator for online class/course in the partners' countries as perceived by students and the characteristics, teaching styles, skills and preferences of the educators. The next aim includes the formulation of a procedure for evaluating, scoring and summarizing all aspects of the instructors' profile, so that the desired characteristics for each candidate instructor can be easily and readily assessed. Subsequently, and based on the synthesis of the course/class students,

the proposed framework will facilitate the ranking of available instructors, based on multicriteria analysis approaches, in order to select the optimum instructor. An online platform that will put into practice the above described ODLEP's methodological approach will further simplify the successful selection of instructors/educators. In the present paper a brief description of the study methodology, procedures and participants is provided. Furthermore, findings and conclusions are also analysed and presented in detail.

2 METHODOLOGY

2.1 Participants

Six participating Institutions (Aristotle University of Thessaloniki, University of Macedonia, University of Ioannina, Universitatea Lucian Blaga Din Sibiu, Universita telematica Degli Studi, Univerzitet U Nisu) from four European countries partnered to establishing a theoretical framework and deliver an online platform and policy recommendations for the successful matching of instructor/educator with students for online courses. Two hundred fifty-seven Instructors (Age: M=49.6, SD=10.1; Sex ratio M/F: 55/45%) and 646 students (Age: M=33.6, SD=11.1; Sex ratio M/F: 52/48%) participated, as of September 2023, as a convenience sample from the 4 collaborating countries.

2.2 Procedures

A series of on-line questionnaires evaluating desired characteristics of instructors (personality, teaching styles and preferences, skills) and students (personality, learning styles and preferences) were completed by all participants. Personality assessment was performed using the model of the Five Personality Factors [3]. Learning/teaching styles, skills and preferences were assessed with questionnaires developed for the present study. All participants were above eighteen years of age and gave their informed consent, before entering the study. The study was approved by the Research Ethics and Ethics Committee of the Aristotle University of Thessaloniki.

The two questionnaires (for instructors and for students) were implemented based on two platforms, either google forms and the platform of lime survey. The two questionnaires share a number of common questions which were needed in order to exist a direct comparison of the views and approaches. More specifically, the two questionnaires have the following structures as described below:

In the case of instructors' research questionnaire, the latter includes 100 questions, and it consists of the following discrete parts:

- Introductory note on the Specific Research Survey
- Instructors' Attributes
- Instructors' Distance Education Experience
- Instructors' Preferred Teaching Styles
- Preferred Learning Styles of Students as Considered by Instructors
- Instructors' Personality (Big Five Personality Traits and Facets)

The questionnaire survey in the case of instructors has a great analogy and correspondence to the students' questionnaire. Participating instructors responded to the questionnaire which was specifically constructed for the goals of the current study.

The first part recorded the characteristics of the participating instructors, including their general attributes and in essence their profile. Then an additional number of questions were introduced to assess distance education experience from the instructors' viewpoint. The next part of the questionnaire covered teaching styles. These teaching styles originated from the work of Sternberg and Zhang [4]–[6] [5], [7] based on *The Theory of Mental Self-Government*. Students learning styles based on Sternberg and

Zhang [7] were also included and then follows a number of additional statements based on VARK Learning Styles by Arbabisarjou et al. [8], that included: Kinesthetic, Auditory, Read/Write, Visual and Multiple styles.

The last part of the questionnaire consists of the personality questionnaire based on the big five personality traits and facets by McCrae & Costa [9], which in turn assesses the personality of the instructors and is available in multiple languages at: <https://ipip.ori.org/> [10]

In the case of students' research questionnaire, the latter introduces 124 questions, and it consists of the following discrete parts:

- Introductory note on the Specific Research Survey
- Students' Attributes
- Students' Distance Education Experience
- Students' Preferred Learning Styles
- Fellow Students' Preferred Learning Styles as considered by the participants
- Preferred Teaching Style of Instructors as Considered by Students
- Students' Personality (based on the Big Five Personality Traits and Facets)

The questionnaire for the students was organized with a focus on the current research objectives, needs and requirements. An initial part was designed to record the characteristics of the students, more specifically their general attributes and in essence the questionnaire captures their profile. Then a number of questions were added to record and highlight distance education experience. All the introductory questions were created based on relevant studies and the experience of the research team in the specific subject. The next step was to present to the survey participants the required learning styles. These learning styles originated from the work of Sternberg and Zhang [5], [7] based on *The Theory of Mental Self-Government* and then follows a number of selected sentences based on VARK Learning Styles by Arbabisarjou et al. [8], that included: Kinesthetic, Auditory, Read/Write, Visual and Multiple styles. The last section introduces the personality questionnaire. The latter is based on the big five personality traits and facets as proposed by McCrae & Costa [11]. The aim was to evaluate the personality of the respondents and the specific questionnaire is freely available in multiple languages at: <https://ipip.ori.org/> [10].

2.3 Data Analysis

The data which was recorded was appropriately parameterized. The processed data were mostly of categorical nature and a small amount of data remained quantitative. Two discrete databases were produced in SPSS. The database related to the students included 124 variables / columns and 646 lines / participants. Similarly, the database for the instructors had 100 variables / columns and 257 lines / participants. Data were analyzed using SPSS. The analyses that took place included descriptive statistics, correlation analysis and independent sample t – test analysis. The Descriptive analyses summarized the data collected at this preliminary stage, while correlation analysis identified a number of associations among participants' profiles and their preferences. Finally, independent sample t-test analysis highlighted the statistically significant differences among male and female participants, instructors or students, and their teaching and learning preferences.

3 RESULTS

3.1 Sample characteristics, experience and skills

Two hundred fifty-seven Instructors (Age: M=49.6, SD=10.1; Sex ratio M/F: 55/45%) and 644 students (Age: M=33.6, SD=11.1; Sex ratio M/F: 52/48%) participated, as of September 2023 (Fig.1,2). Most Instructors (81%) were Professors (Full, Associate or Assistant Professors) working at public

Universities (85%). Only 29% of the instructors were certified for distance education programs, while 31% had taught at least two semesters in distance educational programs and equally often to domestic and international students. Most (69%) reported having more than average computer skills. Most students were undergraduate (72%), either at their final or 3rd year of studies. Forty-two percent of students have attended courses for at least two semesters in distance educational programs. In contrast to instructors, less than half of the students (48%) reported above average computer skills. The following figures present some main characteristics and attributes associated with the participating students and instructors. Figures 1 and 2 present the nationality of the instructors and students.

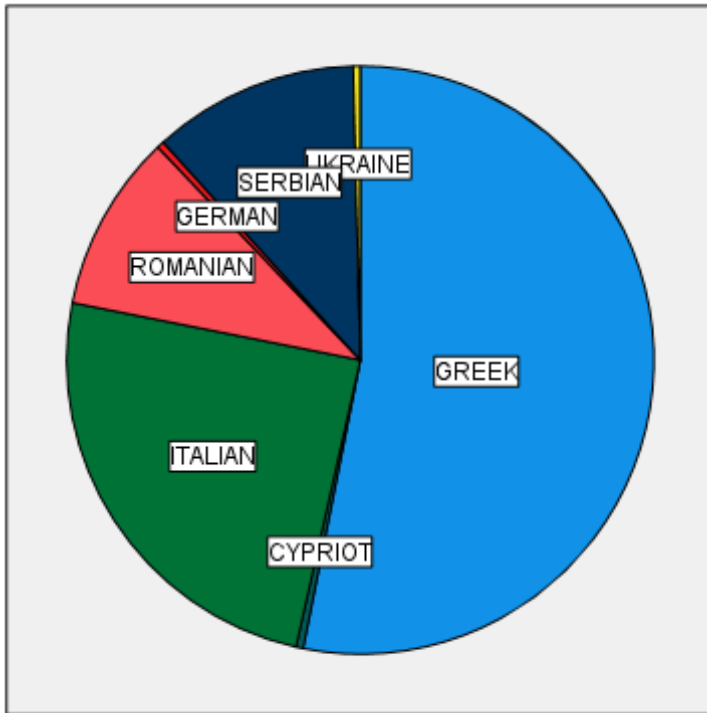


Figure 1. Percentage of Instructors per nationality.

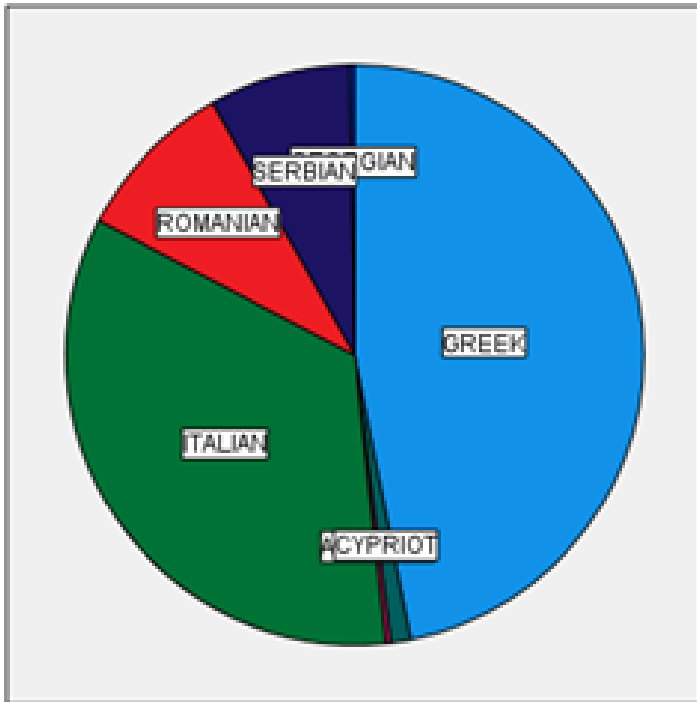


Figure 2. Percentage of Students per nationality.

Regarding the marital status, it becomes evident that the majority of the instructors (67,19%) are married, while 25,39% of them are single as presented in the following Figure 3.

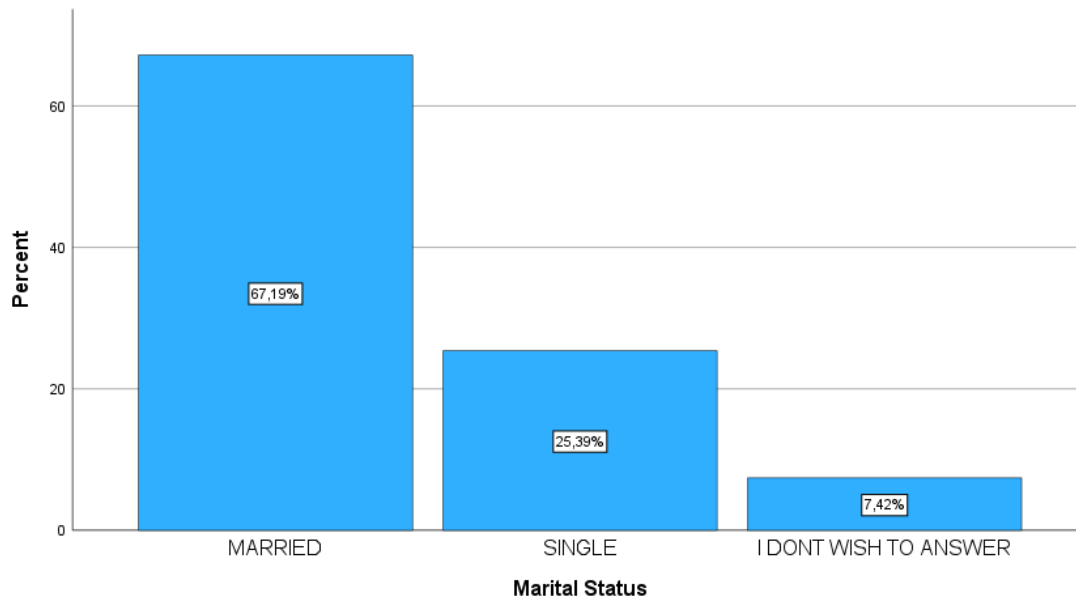


Figure 3. Marital Status

In the following Figure 4 it is shown that 36,73% of the participants have two children, 30,20% have no children, while 27,35% of them have one child.

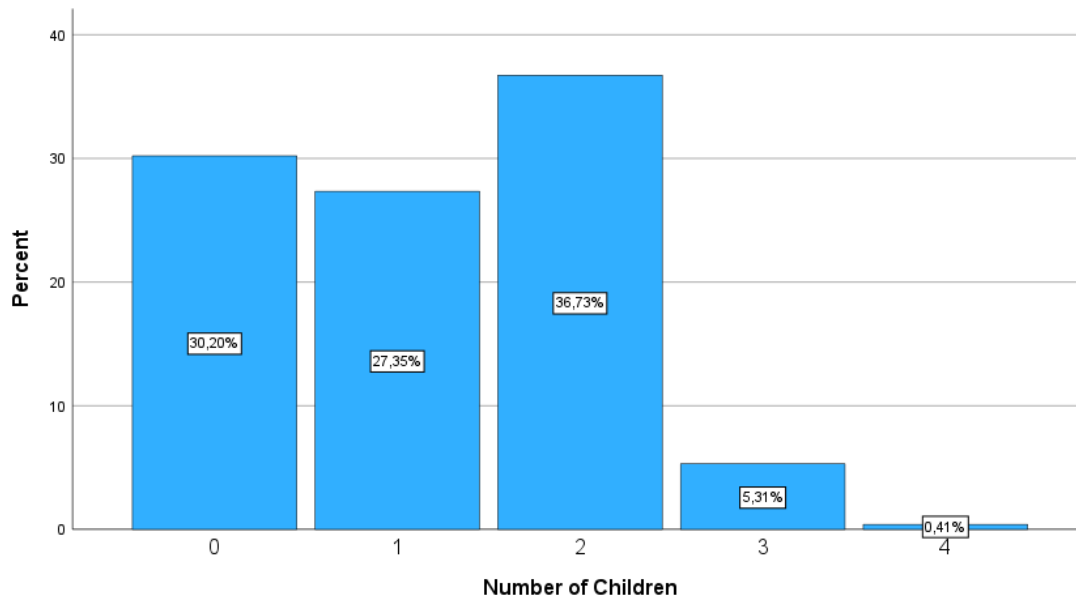


Figure 4. Number of Children

As far as the participants' position / professional title is concerned, it is noteworthy that 38,28% are Professors, while 23,05% are Assistant professors (Figure 6).

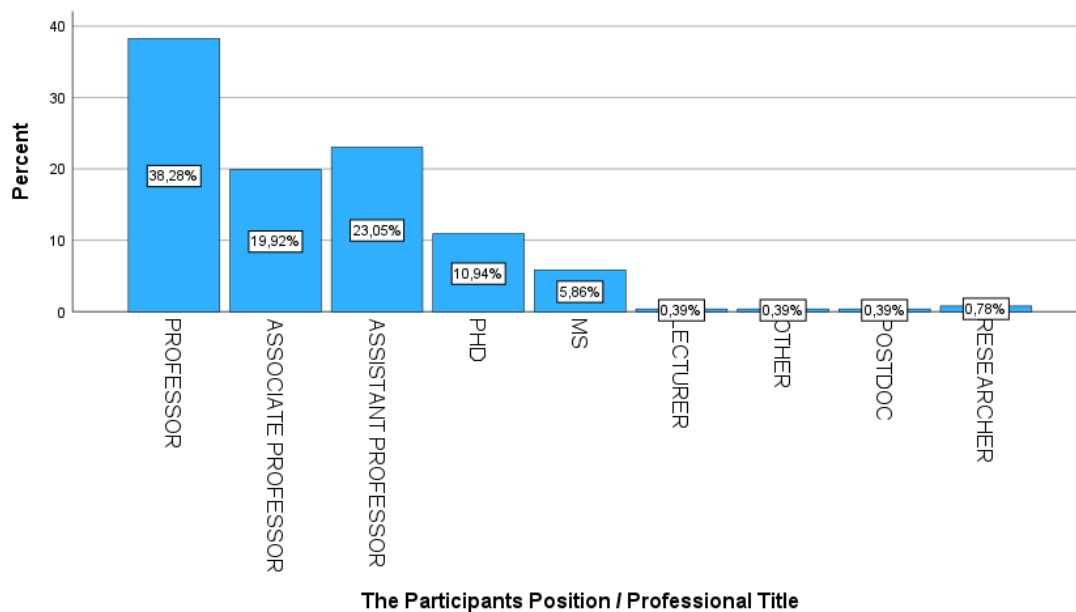


Figure 6. The Participants' Position / Professional Title

More specifically, regarding the participating students, it is true that as far as the level of the computer expertise of the participating students is concerned, the majority (40,93%) of students have an average level of computer expertise.

3.2 Beliefs about distance education

Regarding the beliefs about distance education, although most educators prefer face to face educational methods (85%), they acknowledge that distance education is efficient (82%). When it comes to distance education, they prefer smaller groups of students (77%). In contrast to educators, just over half of the

students (59%) prefer face to face educational methods, and the vast majority (90%) consider distance education efficient. Similar to instructors, students prefer small groups in online courses (79%).

3.3 Teaching styles

Twenty-nine percent of the instructors have a preferred way of doing things, do not like to do things in other ways and insist on teaching in traditional ways (14%), while most reported that they like to teach in new ways and to try new teaching techniques (89%).

The attributes that seem to be more preferable by the instructors regarding their students include:

- Students that better discern the material through watching a demonstrative presentation of the information.
- Students that can better conceive the instructional material through performing the practical, experimental and object manipulation via something more of a physical process (simulated or real).
- Students that have preference for tasks, projects, and situations that require creation, formulation, planning of ideas, strategies. These students like to decide what to do and how to do it, rather than to be told.

Students have a preference for instructors that teach in new ways and to try new teaching techniques and those that seem flexible in their teaching approaches.

The mean years of undergraduate studies are 3,7 years, the mean years at university master degree are 0,7, and at the PhD 0,28 years. Regarding the rest of the responses, the mean number of semesters of distance learning education attended equals to almost 2,6. Moreover, the mean number of courses with tuition fees completed with distance learning education programs are 2,9 while the mean number of courses without tuition fees completed with distance learning education programs are 3,71. The majority of students with 71,8% are undergraduate students and at the same time, the majority of the students (36,2%) that participated are employed in the private sector.

It is worth mentioning that 87,5% have not attended courses in a foreign university, being physically present abroad. Distance learning as an education method is considered as average efficient to most efficient by 36,7% of the students. Furthermore, it is interesting to mention that 59% of the students prefer face to face teaching and 61,5% tend to keep their camera off. In general, 78,3% prefer smaller groups of students (<30 students).

4 CONCLUSIONS

At the time of the analysis, preliminary descriptive data on ODLEP project has been collected and the relevant literature has been reviewed and summarized. These initial analyses show that the majority of instructors and students have experienced and participated in distance educational procedures and they consider them effective. Certification for distance education programs among instructors remains limited, although according to their reports, their relevant technical skills i.e., computer knowledge, are above average. On the other hand, half of the students' report having below average computer skills, which may hinder their participation in online learning courses. Both educators and students seem to be willing and interested to try new teaching and learning approaches. At the next step an in-depth analysis of teaching styles and learning preferences will be performed and personality characteristics will be analysed. The relationships between personality, teaching/learning styles and preferences, skills will then be explored. Cross-cultural differences as expressed by potentially different findings in the four participating European countries will subsequently be investigated. Despite several drawbacks, distance learning makes education accessible to ever larger numbers of person [12]. However, its success relies heavily to the learners characteristics [13]. The ultimate goal is to address the issue of personalized education by providing insights into the human factors that contribute to successful learning experiences.

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