

ASSOCIATION ANALYSIS AMONG ITALIAN STUDENTS' PARTICIPANTS PROFILE, DISTANCE EDUCATION EXPERIENCE AND LEARNING PREFERENCES

S. Armenia¹, I. Messuri¹, G. Aretoulis², T. De Angelis³, L. Balleri³, G. Cecchi³

¹*Università Telematica degli Studi IUL (ITALY)*

²*Aristotle University of Thessaloniki (GREECE)*

³*Università Telematica Pegaso (ITALY)*

Abstract

Distance learning has been a critical approach for education during the last years. A lot of investments have taken place in the current years to support, promote and facilitate distance education. Within the online courses the main actors remain the students and instructors. Therefore, the current study focuses on the interaction among these two partners and investigates their mutual preferences from the point of view of students. To succeed in examining the students' preferences a structured questionnaire survey has been developed. This questionnaire records the participants' profile, distance education views and then examines the students own learning preferences, their fellow students' desired learning preferences and what the students consider as ideal teaching styles for their instructors. The survey managed to collect 222 responses. Then, the data has been inserted into SPSS, and created a database with variables that were equal to 124. Apart from the descriptive statistics, the focus is on the association analysis among the preferences stated in the questionnaire survey by the participating students. The findings present significant associations. A great number of associations were identified between the students' characteristics and learning preferences of the participating students as well as their stated preferences regarding the desired teaching styles of their instructors. It should be mentioned that in essence, the current study will present selected correlated learning and teaching preferences and try to explain the underlying facts. Among the pool of identified associations, it is interesting to highlight that a positive correlation exists among the learning preference to discern the material through watching a demonstrative presentation of the information and the two qualities / abilities of the instructor to carefully set priorities and then stick to them and furthermore the instructor's tendency not to easily allocate class time so that the most important things receive the most coverage.

Keywords: Distance Education, Learning Styles, Teaching Styles, Italian Students, Association Analysis.

1 INTRODUCTION

In recent years, the landscape of education has undergone a transformative shift with the widespread adoption and advancement of distance learning methodologies [1]. The rapid development of digital technologies, coupled with evolving pedagogical practices, has propelled distance education to the forefront as a critical approach to delivering knowledge and skills in diverse educational settings. This paradigm shift has not only expanded access to education but has also redefined the roles and dynamics of key stakeholders [2], particularly students and instructors, within the virtual classroom environment. The surge in investments and initiatives aimed at bolstering distance education underscores its growing significance and relevance in contemporary educational discourse. Institutions and educators worldwide have increasingly embraced online courses and remote learning platforms, striving to provide flexible, accessible, and engaging educational experiences [3]. Central to the success of these initiatives are the interactions and collaborations between students and instructors, which form the cornerstone of effective distance education. The focus of this study is to delve into the multifaceted interactions between students and instructors within the context of distance education, with a specific emphasis on understanding and analysing their mutual preferences and expectations. By elucidating these preferences from the vantage point of students, this research aims to contribute valuable insights that can inform the design, implementation, and refinement of distance education programs tailored to meet the diverse needs and aspirations of learners in virtual learning environments. Unlike traditional classroom settings, where face-to-face interactions are predominant, distance education necessitates innovative approaches to facilitate meaningful engagement and effective knowledge transfer across virtual platforms [4]. In this dynamic milieu, students assume active roles as autonomous learners while instructors adapt their pedagogical strategies to cultivate inclusive and interactive virtual learning environments [5]. The exploration of students' perspectives on their learning experiences and interactions with instructors is pivotal for

optimizing the efficacy and inclusivity of distance education. Students' preferences and expectations regarding instructional methodologies, communication styles, and learning environments significantly influence their engagement, motivation, and ultimately, their learning outcomes. Thus, understanding and responding to these preferences is fundamental to enhancing the quality and effectiveness of online educational endeavours. To achieve the research objectives, a structured questionnaire survey was developed and administered to a sample of (n=222) distance education students in the context of the Erasmus + Project "Optimizing Distance Learning Educational Programs" (ODLEP). This survey instrument was designed to capture a comprehensive array of variables, including demographic information, educational backgrounds, perceptions of distance education, and nuanced preferences related to learning and instructional dynamics. By harnessing the power of empirical data and statistical analysis, this study endeavours to unravel the intricate web of associations that underpin student-instructor interactions in virtual learning contexts. The subsequent sections of this article will delve deeper into the methodological approach employed, presenting a detailed overview of the survey design, data collection procedures, and analytical techniques utilized to elucidate the complex interplay of factors shaping student preferences and expectations within the realm of distance education. The findings and implications derived from this study promise to inform educational practitioners, policymakers, and stakeholders in their efforts to advance and optimize the delivery of distance education in alignment with student-centric principles and pedagogical best practices.

2 METHODOLOGY

Data on (n=222) Italian students involved in the study were collected through a questionnaire administered in CAWI (Computer Assisted Web Interview) mode. The use of CAWI ensured the confidentiality and accessibility of the survey, enabling faculty members to respond at their convenience while ensuring the integrity and validity of the collected data [6]. The questionnaire commenced with recording demographic information and educational background of participants, followed by inquiries into their general perceptions and experiences with distance education. Subsequently, participants were prompted to articulate their personal learning preferences, identify their expectations from their peers in the learning environment, and articulate their ideal teaching styles and methods preferred by instructors. Answers to questions about student satisfaction with teaching methodologies, learning strategies, and learning environments are identified by the following 5-point Likert scale: "Not at all", "Slightly", "Moderately", "Very", "Completely". In addition to employing descriptive statistical analyses to summarize the dataset, the study focused on conducting association analyses to unveil relationships among the various preferences articulated by participating students. The aim is to discover significant associations between students' characteristics, their learning preferences, and their expectations of teachers' teaching styles. Analyses of the contingency tables with related Chi-square tests will then be presented to assess the significance of the associations between variables. All analyses were conducted with IBM's SPSS statistical software. Fig. 1 shows the schema used to visualize the relationships between students' attributes, students' own learning preferences, fellow students' learning preferences and instructors' teaching preferences.

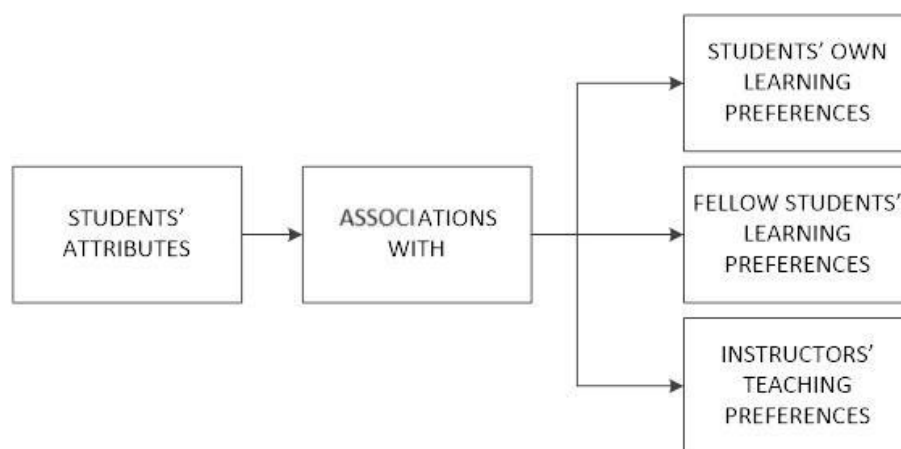


Figure 1. Scheme for the study of associations between student variables.

In this paper the focus will be on the significant associations among students' attributes and learning preferences.

3 RESULTS

Frequency distributions for variables regarding students' demographics and academic background are shown in Table 1.

Table 1. Descriptive statistics for the sample of the students involved in the research

		<i>n</i>	%
Age class	19-25	28	18,8
	26-35	63	28,6
	36-45	60	27,2
	46-55	57	25,9
	Over 55	14	6,5
Gender	Female	159	71,6
	Male	63	28,4
Marital status	Married	89	40,0
	Single	120	54,1
	No answer	13	5,9
Education level	PhD	4	1,8
	Master of Science	30	13,5
	Undergraduate	188	84,7
Occupational Status	Student	33	14,9
	Unemployed	15	6,8
	Employed in private sector	123	55,4
	Employed in public sector	51	23,0
Total		222	100,0

The quantitative variable of age can be summarized by the following indices of position and variability: Min: 19; Max: 68; Mean: 39,3; Median: 38,5; Standard Deviation: 10,8.

Figures from 2 to 5 represent significant associations between certain student characteristics and their learning preferences.

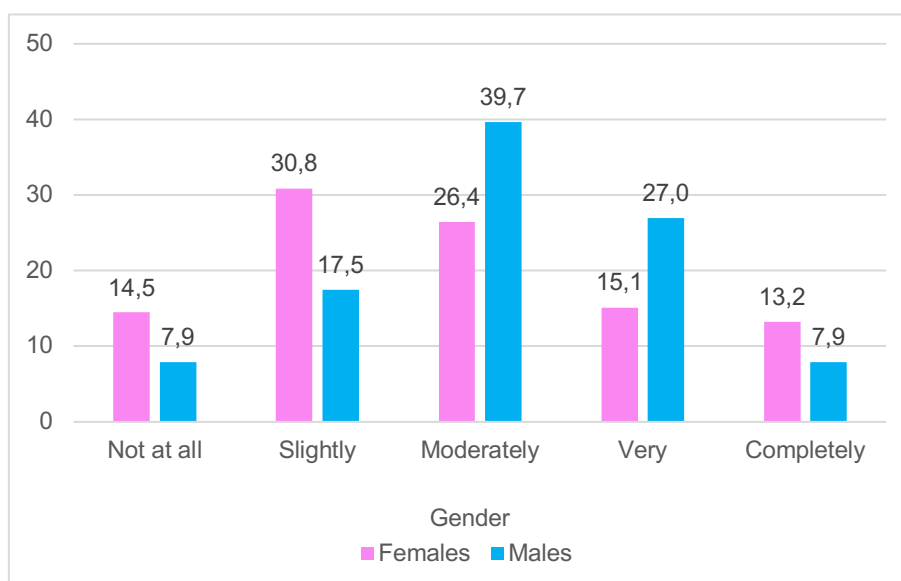


Figure 2. I have a preference for tasks, projects, and situations that require adherence to and observance of existing rules and procedures. I like to minimize change and avoid ambiguity. Percentages by gender. χ^2 : 11,660. Degrees of freedom: 4. P-value: 0,020

Percentage distributions by gender show that males tend to prefer projects and situations with well-defined rules and seem less inclined to change. Females, on the other hand, are more open to changing and less defined situations. An exception is the “Completely” mode, which sees a slightly higher percentage for females, in contrast with the trend described above. It could be an indication that males tend to give less extreme answers, the percentage of males who responded “Moderately” is in fact much higher than that of females; while females tend to give more extreme responses.

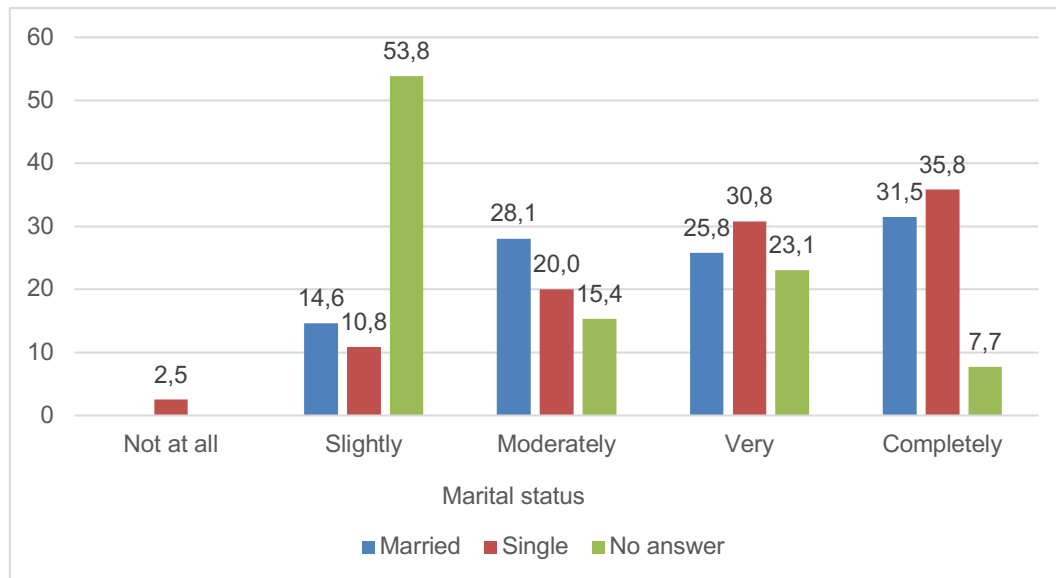


Figure 3. I can better conceive the instructional material through performing the practical, experimental and object manipulation via something more of a physical process (simulated or real). Percentage by marital status χ^2 : 22,450. Degrees of freedom: 8. P-value: 0,004

Figure 3 shows that in general students appreciate practical applications and that they involve experiments and the use of objects. In fact, the percentages are higher for the “Very” and “Completely” categories than for the “Not at all” or “Slightly” categories for all students, except for those whose marital status is unknown, of which just over 50% responded “Slightly”. It should be remembered that there are only 13 of these. However, it is noticeable that singles prefer practical and experimental activities more than married students. The percentages of “Very” and “Completely” are higher for singles, while those of “Slightly” and “Moderately” are higher for married students.

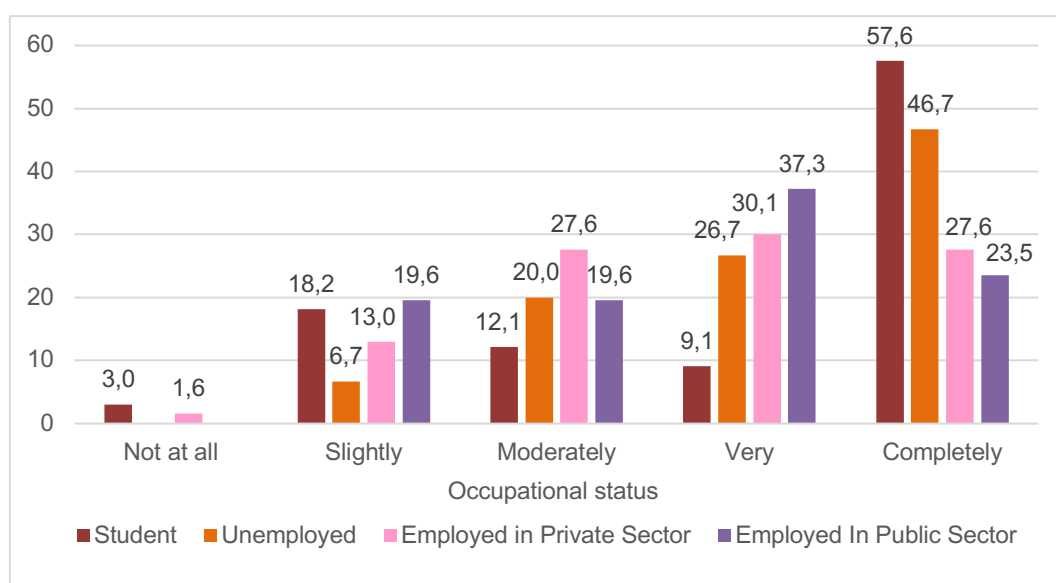


Figure 4. I can better conceive the instructional material through performing the practical, experimental and object manipulation via something more of a physical process (simulated or real). Percentage by occupational status χ^2 : 22,166. Degrees of freedom: 8. P-value: 0,036

As far as the distribution by occupational status is concerned, students and the unemployed have a high percentage of "Completely" answers, more than 50% for students; while employed students have higher percentages in "Slightly", "Moderately" and "Very" answers.

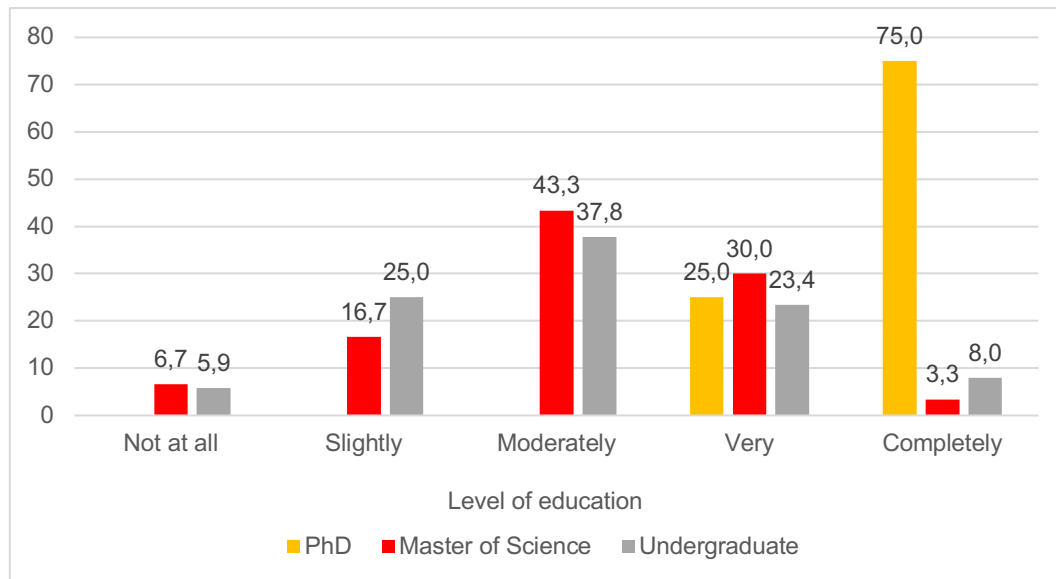


Figure 5. I have preference for tasks, projects, and situations that allow working with competing approaches, with multiple aspects or goals that are equally important. Percentage by education level. χ^2 : 25,868. Degrees of freedom: 8. P-value: 0,001

The distributions of students who are undergraduates or who hold a Master of Science degree can be approximated by a Normal distribution with regard to the preference of activities, projects and situations that allow them to work with a competitive approach and with multiple purposes of equal importance. On the other hand, those who have a doctorate strongly prefer this type of activity. In fact, two-thirds of PhDs answered "Completely", while the other third answered "Very".

4 CONCLUSIONS

The findings of this study shed light on the diverse preferences and expectations of distance education students regarding instructional methodologies, learning environments, and interaction dynamics with instructors. The study reveals significant gender-based differences in learning preferences. Males tend to exhibit a stronger inclination towards projects and tasks characterized by well-defined rules and structures, showing a preference for stability and minimizing change. In contrast, females display a higher openness to change and ambiguity in learning contexts, emphasizing adaptability and flexibility in their educational experiences. Students' marital status also plays a discernible role in shaping learning preferences. Singles demonstrate a heightened preference for practical, hands-on instructional approaches involving experiments and object manipulation. This inclination towards active learning methods underscores the value singles place on experiential and applied learning strategies within the virtual classroom. Students' employment status and learning patterns are significantly dependent. Students and the unemployed show a marked inclination to fully engage in hands-on, hands-on learning experiences. In contrast, busy students show a more nuanced response, balancing practical engagement with theoretical understanding. The level of education attained by students strongly influences their learning preferences. Undergraduate students and Master of Science graduates show a preference for tasks and projects involving competing approaches and multiple equally important goals. Intriguingly, students with a PhD. overwhelmingly favour complex and multifaceted learning activities, emphasizing the intellectual rigor and challenge inherent in advanced educational pursuits. These findings underscore the importance of tailoring distance education programs to accommodate the diverse learning preferences and expectations of students. Educators and institutions can leverage these insights to optimize instructional methodologies, promote inclusive learning environments, and enhance student engagement in virtual classrooms. By aligning teaching strategies with students' individual preferences, distance education can realize its full potential as a dynamic and responsive educational paradigm capable of meeting the evolving needs of learners in a digital age. Moving forward, future research endeavours should continue to explore the intricate interplay between student

characteristics, learning preferences, and instructional dynamics in distance education. By refining our understanding of these associations, educators and policymakers can foster innovative educational approaches that empower students to thrive in virtual learning environments, ultimately advancing the accessibility, quality, and effectiveness of distance education on a global scale.

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