The University Learning Experience: A Dual Approach to Understanding Study Habits and Attendance Patterns

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ABSTRACT

The pandemic has transformed the traditional perception of university life, revealing alternative learning methods and prompting a shift in students' attitudes towards education. With emptied classrooms, students now navigate flexible schedules, recorded lectures, and increased autonomy in learning. This departure from traditional learning motivators, such as intellectual curiosity, is attributed to economic and social pressures. Distance learning has become integral, challenging the assumption of mandatory classroom attendance. Students, embracing a blend of online and in-person classes, prioritize value over physical presence. This paradigm shift presents universities with the dilemma of reengaging students while balancing tradition and innovation. To address this, understanding student perspectives is crucial. Through a comprehensive questionnaire involving 344 students across scientific and humanities disciplines, this study explores preferences, challenges, and expectations, aiming to inform future educational models.

CCS CONCEPTS

• **Social and professional topics** → **Cultural characteristics**; • **Applied computing** → **Interactive learning environments**; **E-learning**.

KEYWORDS

University class attendance, study habits, study behavior

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1 INTRODUCTION

Until a few years ago, it was normal to think of university students on campus, immersed in academic and social life. The university campus was a microcosm where studies, friendships, and opportunities for personal growth intertwined. However, the pandemic has revolutionized this vision. By emptying university classrooms, the pandemic has shown that an alternative way of learning is possible. It revealed unexpected benefits such as flexible schedules, the ability to review recorded lectures, and greater autonomy in the learning process [7, 12, 13].

Nowadays, students are struggling to return to classrooms, but this phenomenon is not completely new. Students' attitudes towards learning have changed significantly over the past forty years[11]. In the 1970s, intellectual excitement and the desire for knowledge were the main motivations for attending classes; students saw the university as a place to explore ideas, challenge conventional thinking, and grow intellectually. Over the years, there has been a growing trend towards a more instrumental approach to education. Education is now often seen as a means to an end—obtaining a diploma, securing a job, and advancing in a career. The reasons for this shift are manifold, reflecting economic and social pressures. The rising cost of education, increased competitiveness in the job market, and the need to balance study, work, and personal life have led many students to evaluate classes based on their perceived value.

As a result of this shift, assuming that students will attend university classrooms is inaccurate. It is not merely a matter of personal preference but a structural transformation involving both institutions and students [6]. Distance learning has rapidly transformed the concept of learning, with digital platforms—once considered only support tools—becoming the backbone of education. Students have had to adapt to a new routine, learning to manage their time, attend online classes, and take virtual exams. Many have discovered a preference for a combination of in-person and online lessons, finding in this flexibility a balance between autonomous learning and direct interaction with teachers and peers. Furthermore, students who previously spent on housing, transportation, and meals on campus have been able to save significantly on the costs associated with in-person university life.

In general, universities now face new questions about the sustainability and effectiveness of traditional education. These questions

are on the agenda of many universities worldwide. Some institutions are considering making classroom attendance mandatory, but this solution negates many of the benefits students have found in online learning, such as cost reduction, management of complex personal schedules, and personalized learning. Consequently, this approach could prove counterproductive. Finding a balance between tradition and innovation, might be a reasonable approach to meet the expectations and needs of contemporary students, but is this approach reasonable also for students?

To help outline a model of future education, this article explores the behaviors of university students concerning lifestyle, teaching, exams, and technologies. Through a quantitative-qualitative questionnaire, we analyze students' points of view on what they appreciate or dislike, what they propose to improve the educational experience, and how they think technology will influence university teaching. A total of 344 students, belonging to 2 different undergraduate programs (one scientific, Computer Science, and one humanity, Communication Science) and to 3 different Italian universities, participated to our questionnaire. The data analysis paint a picture of modern students as autonomous and digitally savvy. Students prefer to studyat home alone, also due to the lack of space in the universities. This trend may also indicate a desire for autonomy and self-directed personalised learning. Moreover, students expressed a common preference for in-person classes since they are perceived as more effective and essential for learning and to maintain human contact and the social experience of university.

The remainder of this paper is organized as follows. In Section 2 we present recent studies that investigated student's behavior towards classroom attendance; in Section 3 we present details of our questionnaire. Section 4 shows details of the experimental settings and of the obtained results. Conclusions are drawn in section 5.

2 RELATED WORK

Other research works in literature have studied the behaviour of students attending to universities lessons. Sloan et al studied the reasons for non-attendance within Undergraduate Programmes at a post 1992 UK university [4]. They asked to 373 students from two different degrees to answer to a survey which contains both open and closed questions. Students identified formal lectures as the less engaging didactical method where levels of interest and motivation were the two most important factors for attending. Several widely held beliefs about causes of poor attendance, e.g., paid work, gender difference, and the posting of materials on e-learning platforms, are not strongly supported by this study. Instead, the study reveals that recognition of the impact of attendance on grade is associated with higher levels of attendance so one useful strategy for teachers might be to present evidence to students to demonstrate this link.

Green [8] analysed the situation during the COVID-19 pandemic. The author interviewed 226 students about the efficacy of hybrid learning delivery methods. The author categorized students' preferences for remote (via video conferencing), in-person (face-to-face (F2F)), or HyFlex (an on-demand combination of either in-person or remote) learning modalities and examined the association with performance. The result shows that attendance choices affect a student's self-reported engagement, coursework participation, and exam performance. In particolar, students that preferred to attend in-person or hybrid lectures obtained better results in the examinations.

Other studies address the impact of attending on students' performance [1–3] thus showing that the importance of class attendance does not change when topic or region of teaching change. AbuRuz [1] found a significant correlation between attendance and academic performance of undergraduate nursing students at a private university in Amman, Jordan. The study showed that students who have higher absenteeism rates have lower Grand Point Average (GPA) regardless to academic level. They also discovered a correlation with gender: male students have higher absenteeism rates and lower GPAs than females. Ancheta et al [2] analysed class attendance and academic performance of the L3 Omani undergraduate students in their English courses and found out that almost 71% of them had poor attendance frequency. Even this study showed that there is a significant relationship between class attendance and better student performance: as the absence of the student increases, the mark also decreases of at least 1 mark. It is concluded that students' class attendance is very critical in terms of learning as it affects students' achievement. Andrietti [3] collected data from students enrolled in an introductory macroeconomics course taught at a public university in Italy using proxy variables regressions to capture the effect of unobservable student traits possibly correlated with attendance. Even in this case, a positive and significant effect of attendance on grade was found.

On the other hand, Zogheig goes in a different direction in [15] stating that compulsory attendance in communication skills classes offered at colleges of engineering a Middle Eastern university has no significant relationship with students' overall performance in those classes. Students were complaining that compulsory attendance prevents them from performing well in such courses. The author suggested that making students' life easier would not only improve their status at the educational level but would also create a feeling of comfort and satisfaction among family members and friends. In the same way, Mackintosh-Franklin analysed performance of nursing students and showed that the correlation between attendance and final grade does not always hold. In [10] she found that students with 100% attendance and engagement were more likely to achieve an A grade but the findings indicate achievement is nonlinear and maybe related to higher motivation more than to attendance.

A solution to the universal challenge of students attendance was proposed in [14] interviewing 36 university teachers and 48 students from two universities, one located in Macao and one in Portugal. Most of the respondents recognized the importance of attendance but had varying viewpoints. Both teachers and students suggested that the nature of the discipline and the flexibility of the policy should be considered when making a policy on attendance. Teachers and students hope that teachers can improve their course design to motivate and attract students to attend their classes.

Lucey and Grydaki [9] examined the effect of implementing an incentive scheme on seminar PPA (prior preparation and attendance) and performance focusing on a cohort of international postgraduate students over two academic years in two conversion economics (quantitative and non-quantitative) modules at a Scottish business school. The results show that the scheme leads to an increase in the class PPA in both modules and in the probability of

Course	Tot#	I%	II%	III%	ooc%	Average year of study
Com-Re	80	2.5	36.25	50.0	11.25	2.7
Cs-Mo	41	75.0	17.5	2.5	5.0	1.375
Cs-Pd	171	71.35	19.3	6.4	2.9	1.41
Cs-Bo	53	13.2	64.16	18.9	3.8	2.13

Table 1: Student distribution over years

passing the quantitative module, however academic performance is affected at a lesser extent.

3 METHOD

To gather detailed information about university students' study habits and class attendance, we developed a comprehensive questionnaire, incorporating both quantitative and qualitative dimensions, with a total of 50 questions.

The quantitative questions delve into various aspects of students' study habits and preferences. They explore study location (such as home, library, or department), study habits (whether alone, with friends, or in a group), lifestyle (living arrangements and employment status), studying methods (timing and utilization of AI tools), use of study materials (including personal notes and AI assistance), note-taking methods, attendance patterns, focus levels, reasons for attendance or absence, understanding of topics, and previous academic performance.

The qualitative questions specifically delved into the learning experience to capture nuanced insights, perceptions, and subjective experiences that may not be adequately captured by quantitative measures alone. These questions aim to gather insights into students' perceptions of in-class lessons, including likes, dislikes, and suggestions for improvement. Additionally, students' opinions on online-only university lessons are explored to gain a comprehensive understanding of their preferences and experiences in different learning environments.

4 EXPERIMENTAL SETTING

4.1 Participants

The questionnaire was disseminated via the GForm platform, extending invitations for voluntary participation to three universities: Universities of Modena and Reggio Emilia (UniMoRe), of Padua (UniPD), and of Bologna (UniBO). Its distribution aimed to gain insights into the behaviors of students from two distinct academic disciplines: communication sciences (humanities track) and Computer Science (STEM track). Participants completed the questionnaire remotely, without supervision, ensuring unbiased responses. Specifically, the questionnaire garnered responses from 80 communication sciences students and 265 computer science students (with 171 UniPD, 41 UniMoRe, and 53 UniBO).

The gender distribution of the participants is very different between the humanities and Computer Science ambits. The majority of the humanistic students are female (71%) while the majority of the computer scientists are male (79%). The unbalance between males and females is a known problem in STEM degrees [5] and not a problem of the sample.

The students' distribution over the years (Table 1) of the courses is also very variable in the 3 universities, but still concentrated on the bachelor programs. Computer scientists in Padua and Modena-Reggio Emilia are mainly first-year students (71.35% and 75.0% respectively) who therefore have gained little experience of university life and group exams. The humanist students are mainly in their third (50%) and second (36.5%) year of study and therefore very expert in the university. In Bologna there is an intermediate situation between the previous ones, mainly second year students (64.16%) who have already had to take some exams consisting of group projects. If we assume that the out-of-course students are enrolled for the fourth year, the average time spent in university (fifth column of Table 1) ranges from 1,375 years for Cs students in Modena-Reggio Emilia to 2.7 years for humanities students. Finally, we must note here that we have two groups of students from the University of Modena and Reggio Emilia, but humanities students are located in Reggio Emilia (Com-Re) while computer science students reside in Modena (Cs-Mo).

4.2 Study Location

The majority of students prefer to study at home (from 61% to 94.9% as sum of always and often options), in particular the humanities students (Table 2). This preference for studying at home may stem from the comfort and familiarity of the environment. The second choice instead varies between Department (from 5% to 26.8% as sum of always and often options) and library (from 13.2% to 28.7%). The lower frequency of studying at the Department and the library may be attributed to factors such as physical distance from home and the resources available in these locations. Computer science students seem to prefer Department more than humanities students (in average, 21.7% versus 5.0% as sum of always and often options); probably, the topic of studying may require the use of computers in the lab or may require discussions with colleagues. However, some contingent situations can influence students' choices. In the case of University of Padua, the increasing number of students limits the availability of space where to study. For this reason, the lower preference to study at home (76,6% against 95%) is surprising. Analogously, at the University of Modena, where one of the Department study rooms is currently unavailable due to renovations.

4.3 Study Habits

The predominant preference appears to be studying alone (from 88.3% of Cs Padua students, through 96.25% of humanities students, to 100.0% of Cs Bologna students, as sum of always and often options) whereas studying with another person or in a group is less prevalent (Table 2). This inclination could signify students' favoritism towards individual focus or the limited availability of group study dynamics. Moreover, humanities students highlight the highest "always" option for studying alone and lowest preference for studying with another person or in a group. Instead, Computer Science students on average have double and quintuple values, respectively. In fact computer science students are required to work in groups for some exams or understanding the focus requires to engage discussion among colleagues. It is important to underline that these answers must be interpreted. E.g., some students from

		Home		Dept.	Library		Alone		With another		Group	
	Course	always	often	always +often	always +often		always	often	always +often	rarely +never	always +often	rarely +never
Location	Com-Re	53.7	41.2	5.0	13.7	Habits %	57.5	38.75	12.5	87.5	2.5	97.5
	Cs-Mo	17.1	43.9	26.8	26.8		43.9	53.66	26.8	73.2	14.6	85.4
	Cs-Pd	25.7	50.9	15.8	28.7		42.1	46.2	21.1	78.9	12.3	87.7
	Cs-Bo	41.5	52.8	22.6	13.2		56.6	43.4	13.21	86.6	9.4	90.6

Table 2: Study Location & Habits

Course	Alone	Family	Partner	Students
Com-Re	6.25	76.25	10.0	7.5
Cs-Mo	2.44	79.73	0.0	26.83
Cs-Pd	4.1	79.53	1.75	14.62
Cs-Bo	13.21	75.47	5.7	5.7

Table 3: Lifestyle: living with

Course	Full-time	Part-time	Contract	Tot work	No work
Com-Re	7.5	20.0	10.0	37.5	62.5
Cs-Mo	0	9.76	7.32	17.07	82.93
Cs-Pd	4.1	21.64	9.36	35.09	64.91
Cs-Bo	9.43	20.75	7.54	37.74	62.26

Table 4: Lifestyle: working

Course	Close to exam	After lesson period	During lesson period
Com-Re	23.75	61.25	15.0
Cs-Mo	12.2	34.15	53.66
Cs-Pd	15.79	25.73	58.48
Cs-Bo	9.43	39.62	50.94

Table 5: Studying methods

Course	Delve into topics	Expedite learning	Simulate exam	Not AI
Com-Re	13.75	21.25	7.5	57.5
Cs-Mo	29.27	26.83	12.20	31.71
Cs-Pd	20.47	18.71	6.43	54.39
Cs-Bo	39.62	22.64	3.77	33.96

Table 6: Using AI tools

Bologna responded that they study "often" either alone, with another person or in a group. This explains why the sum of responses of a group can exceed 100%, as is the case of Bologna.

4.4 Lifestyle

Lifestyle is very similar for all groups of students: students live with family (average 78%) (Table 3) and without significant work commitments (about 70% in average). About a third of them are engaged in some form of work (Table 4), while a smaller percentage (less than 6%) has more demanding work commitments. Only the youngest group (Cs student of Modena Reggio Emilia) appears less engaged with work. It is noted that humanists and Cs Bologna students live less with other students than the other two groups. It could mean that there are fewer who have moved to the university location from other cities. And, therefore, there are more who move daily between home and the university city. The living situation might be explained by two causes: many students come from cities close to the university; the lack of student dorms, and shortage of rooms to let, or their high prices.

4.5 Studying Methods

The study habits of all groups of computer science students are really different from the group of humanist students. Computer science students mainly (Table 5) study the subject during the lesson period (about 54%) or at its end (about 32%). Only 14% of these students focus only close to the exam. On the contrary, humanist students study the subject at the end of the lesson period (61%), while some only focus close to the exam (24%). The use of artificial intelligence tools (Table 6) separates students in two groups: more than half of Cs students from Modena and Bologna uses AI as a helping tool during study, especially to delve into topics covered in class (35% average) or to expedite learning (24%). On the contrary, among humanist students and Cs students from Padua, less than a third uses AI tools. Probably other reasons (different curricula or characteristics of the students) determine these differences.

4.6 Studying Materials

From the standpoint of studying materials (Table 7), there seems to be some difference especially between humanities and Cs students and it could depend on how the subject is explained and what teaching materials are provided by the professors. In fact, compared to Cs students, humanist students use books more (54% vs 30%), and colleagues' lecture notes (42% vs 22%), and of strangers (36% vs 17%); instead, they use their own notes less (62% vs 80%) and, in particular, they use the professor's slides little (64% vs 97%). Perhaps humanist professors distribute their slides in smaller quantities. Conversely, computer scientists use their own notes and professors' slides more and books less. However, there are common factors: recordings of lessons are appreciated but not in the same way. Some oddities emerge: the Cs-Mo use few recordings while the Cs-Bo use many even if few professors distribute them now: the Cs-Bo students

	Com-Re	Cs-Mo	Cs-Pd	Cs-Bo
Own notes	62.5	87.8	75.44	77.36
Colleagues' notes	41.25	14.63	28.66	15.09
Notes	36.25	2.44	27.49	7.55
Profs' Slides	63.75	100.00	92.98	98.11
Slides	7.5	9.76	14.62	3.77
Books	53.75	36.59	36.26	24.53
Recording	73.75	26.83	50.29	73.58
AI tools	15.0	34.15	19.3	35.85

Table 7: Studying materials

Course	**Attend classes**	**All lessons**	**Partially**
Com-Re	77.5	37.5	63.75
Cs-Mo	92.68	85.37	46.34
Cs-Pd	97.1	85.38	38.01
Cs-Bo	86.79	35.85	16.98

Table 8: Attending classes

probably use old recordings created from the time of Covid[1]. About a quarter of the students also uses artificial intelligence tools like ChatGPT as an aid for studying.

4.7 Attendance

The majority of students claim to have attended classes during the semester under study (Table 8) and the percentage of those who follow is higher for the younger groups of students (from 97.1% of Cs-Pd to 77.5% of Com-Re students). A significant percentage reports attending all lessons and the percentage is higher for the younger groups of students (from 85.37% of Cs-Mo to 35.85% of Cs-Bo students). In-person classes appear to aid concentration (greater than 40%), although a substantial proportion (about a fifth) notes no difference or prefers the recorded format (Table 9). There is one exception: Cs students of Bologna prefer recorded classes (41%). Cs students report as main motivations for attending (Table 10) to acquire knowledge of the content (more than 70%) and because they find the exam easier (more than 51%). Humanist students claim, as motivations for attending, to socialize (41.25%) and to follow their peers' lead (33.75%) but they also show the greater percentage of students (13.75%) that does not attend classes. Another motivation for attending is to engage in class discussions. Humanistic students present the greatest reasons for not attending lessons (Table 11), in particular irrelevance to passing exam (31.25%) and distance from home (47.5%). Other reasons for non-attendance include unclear explanations, class boredom, timetable issues, uncomfortable classrooms, transport issues and family responsibilities.

4.8 Understanding

A large number of students admit that they don't fully understand the topics covered in class. A different perception is noted between

[1]We must note here that only for Com-Re students the recordings of all the lessons are available; in all the other cases, the professor can autonomously choose to record or not the lessons.

Course	**Recorded classes**	**In-person classes**	**Not difference**
Com-Re	28.75	40.0	31.25
Cs-Mo	14.63	68.29	17.01
Cs-Pd	21.64	52.63	25.73
Cs-Bo	41.51	30.19	28.30

Table 9: Aid concentration %

	Com-Re	Cs-Mo	Cs-Pd	Cs-Bo
Non attending	13.75	2.44	4.68	5.66
Obligatory	3.75	4.88	1.17	0
To follow friends	33.75	26.83	26.9	15.09
Socializing	41.25	39.03	39.77	26.42
To acquire knowledge	42.5	78.05	71.93	69.81
Non-attenders are penalized	11.25	4.88	0.0	1.89
Exam easier	26.25	70.73	52.63	50.94
Engage class discussions	20.0	21.95	15.79	32.08

Table 10: Motivation for attending (%)

	Com-Re	Cs-Mo	Cs-Pd	Cs-Bo
Attending	13.75	78.5	63.16	45.28
Irrelevance to passing exam	31.25	4.9	10.53	1.89
Boredom	0.2	14.63	15.2	13.21
Unclear explanations	18.75	12.2	16.96	15.09
Timetable issues	11.25	4.88	8.77	7.55
Uncomfortable classrooms	5	4.88	7.02	11.32
Transport issues	8.75	7.32	12.28	7.55
Distance from home	47.5	4.88	14.62	15.09
I don't know anyone	12.5	2.44	2.92	3.77
Work	20	2.44	5.85	16.98
Family responsibilities	7.5	2.44	2.34	11.32

Table 11: Motivation for non-attending (%)

Com and Cs students. A larger percentage of Cs students does not fully understand the lessons, ranging between 52.05% and 63.41% (Table 12) and claim (Table 13) the main causes are insufficient prior knowledge (from 60% to 85%), which is necessary to understand the lessons, and insufficient proficiency of the teacher who is not able to explain effectively (from 30% to 41%). It should be remembered that Cs students attend lectures more, believe that attending lectures is important to pass the exam, and study during the lecture period. This could indicate that computer science subjects are more complicated to understand, and this could explain why Cs students seem to understand lessons less. On the contrary, a lower percentage of Com students does not fully understand the lesson and claim the main causes are (again) insufficient prior knowledge (40%) and insufficient proficiency of the teacher (21%). The insufficiency of prior knowledge can be interpreted either as a criticism directed

Course	All	Partially
Com-Re	66.25	33.75
Cs-Mo	36.59	63.41
Cs-Pd	47.96	52.05
Cs-Bo	41.51	58.49

Table 12: If you attended the courses, did you understand all the topics?

	Com-Re	Cs-Mo	Cs-Pd	Cs-Bo
Distraction	6.25	2.44	2.92	7.55
Insufficient prior knowledge	40.0	85.37	64.33	60.38
Audio issues	23.75	0	8.77	5.66
Poor visibility	15	0	14.62	13.21
Short Explanation	1.25	4.88	0	1.89
Inadequate teacher proficiency	21.25	31.71	40.94	30.19

Table 13: Reasons for not understanding

at teachers who did not explain preliminary concepts or even as a self-criticism of students for not having learned enough in schools. It should also be underlined that students may not have sufficient experience to understand the teacher's competence. Both Cs and Com students report that other causes of not understanding are poor visibility and audio issues. These are problems due to the structure of buildings and systems, but are also partly caused by student behavior: background chatter disturbs the listener; sitting in chairs at the back of the classroom out of shyness or to be with friends and leaving the first desks empty, limits the ability to see the lesson correctly. No apparent correlation exists between understanding and high-school grade (in Italy, it goes from 60 to 100). In fact, for each university, we calculate the average high-school grade of the subgroup of students who do not understand and the average of those who understand. These value pairs are very close, always in the range between 84.07 and 87.91. Sometime, the average score of those who don't understand is higher than those who understand. Moreover, there is no difference between Cs and Com students. Finally, the standard deviation in the subgroups ranges from 10.66 to 12.47. These large standard deviation suggests that, in each subgroup, student high-school grades spread across the entire range allowed (66-100) for Italian schools.

4.9 Technologies

Lecture recordings serve various purposes, but the top two for all student groups are "catching up on missed lectures" (from 54% to 81%) and "deepening understanding of unclear concepts" (from 50% to 87%). The third position, however, changes depending on the study method: students who attend lectures less and study mainly close to the exam and after the lesson period (Com-Re) use the recordings for "binge-watching" (39%) and "speed-up watching" (35%). This allows them to speed up their study. On the contrary, students who attend lectures the most and who prefer to study during the class period, use the recordings for "topic familiarization". This is the case of the 3 groups of Cs students who are always above 24%.

The use of note-taking methods is very different for the 4 groups of students considered. Older students mainly rely on computers (Com-Re 64%, Cs-Bo 49%) and use handwritten notes as second choice. Younger students, however, prefer handwritten notes (Cs-Mo 73%, Cs-Pd 53.2%) and tablets as second choice: maybe at school they weren't used to taking notes on computers. In Padua, more than 13% do not take notes whereas the other groups stay under 5%. Correlations between the use of technology and understanding of lessons do not emerge clearly for all groups of students.

4.10 Qualitative Analysis

Within the questionnaire, we introduced qualitative questions specifically delved into the learning experience to capture nuanced perceptions and subjective experiences. These were open questions in which the students could provide any answer they felt like giving and with no predefined suggestions on the possible answers. In the following of this section we report on the analysis of the answers to these questions.

4.10.1 What did you not like of the lessons you attended?

- **Lesson Length and Engagement:** Students from both Com-Re and Cs-Pd mentioned that lessons are excessively long, with some lessons being described as boring or repetitive. They suggested shortening lesson length and increasing engagement, particularly through more interactive teaching methods.
- **Clarity of Explanations:** A significant number of students across all groups reported issues with the clarity of teachers' explanations. Lectures were often perceived as too fast-paced, not engaging, or assuming prior knowledge that students did not have. In some cases, students highlighted a lack of alignment between lecture content and exam requirements.
- **Teaching Materials and Classroom Conditions:** Students from Cs-Bo particularly criticized the absence of lecture recordings and the disorganization or incompleteness of slides and handouts. Additionally, students from various programs reported practical issues such as insufficient power outlets, non-functioning monitors, and overcrowded rooms. Audio problems and lack of space were also mentioned by Com-Re students.
- **Teacher Competence and Interaction:** Perceptions of teacher competence varied, with some students (Cs-Bo) describing instructors as incompetent or monotonous. There was a general call for more active student engagement and interaction during lessons, as highlighted by Com-Re students.
- **Practical Concerns:** Practical issues such as the costs and time associated with transportation were noted by Cs-Bo students, emphasizing the need for better logistical support and resources.

4.10.2 What did you like of the lessons you attended?

- **Interaction and Socialization:** Students across all degree programs emphasized the importance of interaction with

teachers and peers. Com-Re students particularly appreciated how this interaction enriched their learning experience and fostered active participation. Cs-Pd and Cs-Bo students valued the opportunity to ask questions and socialize with peers, which they found crucial for a conducive learning atmosphere. Cs-Mo students also highlighted the importance of teacher-student and peer interactions in their overall satisfaction.

- **Clarity and Quality of Teaching:** The clarity of teachers' explanations was highlighted as a fundamental element in facilitating understanding of topics, especially by Com-Re and Cs-Bo students. They appreciated teachers' ability to explain subjects clearly and engagingly, often mentioning the use of anecdotes and real-life examples. Cs-Pd students noted that teachers' clear explanations and exam-related suggestions made exam preparation easier.
- **Engagement and Motivation:** Engagement in learning activities was another common theme. Com-Re and Cs-Pd students appreciated when teachers used motivational techniques and technological tools like Kahoot and Wooclap to make lessons more interactive and engaging. Such methods were seen as important for maintaining interest and active participation in the classroom.
- **Classroom Environment:** The physical presence of classmates and the overall classroom environment were considered positive factors, particularly by Com-Re and Cs-Pd students. They valued the social aspects of learning in a physical classroom, which promoted a sense of community and collaboration. Cs-Bo students also found the learning environment and socialization opportunities highly beneficial.
- **Teacher Attitudes and Support:** Students across all groups expressed appreciation for teachers' positive attitudes and availability to provide additional support and clarify doubts. Com-Re students particularly valued the positive attitude and willingness of teachers to offer extra help. This sentiment was echoed by Cs-Mo students, who appreciated teachers' competence and availability for explanations.
- **Learning Resources:** The availability of supportive materials such as slides, recordings, and other resources was highly valued, especially by Cs-Bo students. They found these materials beneficial for revising and understanding the course content, enhancing their overall learning experience.
- **Competence and Passion of Instructors:** Students recognized the competence and passion of their instructors as significant contributors to their learning. Cs-Mo students particularly valued instructors who were knowledgeable, enthusiastic, and dedicated to teaching. This recognition was also prominent among Cs-Bo students, who appreciated the instructors' ability to explain topics clearly and engagingly.
- **Practical and Interactive Teaching Methods:** Practical approaches and interactive teaching methods were highly valued, especially by Cs-Bo students. They appreciated when lessons included practical applications and interactive elements that made learning more engaging and relevant to real-world scenarios.

4.10.3 *Provide suggestion to improve the quality of a lessons.*

- **Practical Examples and Real-Life Cases:** Com-Re students suggested integrating practical examples and real-life cases during lessons to make topics more understandable and relevant to everyday life. Cs-Pd students asked to use of real-life examples and anecdotes in teaching. Cs-Bo students advocated for combining theoretical lessons with practical examples and labs to enhance understanding. Cs-Mo students strongly advocated for increasing the number of practical applications and exercises, while minimizing the focus on theoretical aspects.
- **Quality of Teaching Resources:** Com-Re students recommended improving the quality of teaching resources, such as slides, audio recordings, and videos, to make the material more accessible and engaging. Cs-Pd students highlighted the need for better video recordings, particularly for students who have jobs or live far from the university. Cs-Bo students supported recording lessons and making them available online for review.
- **Personalization and Flexibility:** Com-Re students proposed personalizing the learning experience by reducing the duration of lessons, adapting schedules, and customizing teaching materials based on students' needs. Cs-Pd students also suggested reducing the duration of lessons to enhance focus.
- **Lessons content:** Cs-Bo students suggested including 10-minute breaks every 50 minutes of lesson time to help maintain high levels of concentration. Cs-Mo students expressed a preference for minimizing the teaching of purely theoretical aspects of their disciplines, favoring a more application-oriented approach.
- **Recording and Accessibility:** Cs-Bo students appreciated the availability of recorded lessons, allowing them to review topics covered in class at their own pace, which is particularly useful for revision and catching up on missed classes. Cs-Mo students also supported the provision of video recordings for all lectures.

4.10.4 *Will the future be online video lectures?*

- **Preference for In-Person Classes:** Com-Re students hoped the future would not be dominated by online video lectures, citing the loss of human contact and the social experience of university life. They affirmed that in-person classes are more effective and essential for learning. Cs-Pd students preferred in-person lessons, emphasizing the importance of maintaining human contact and the social experience of university. Cs-Mo students echoed a preference for in-person classes due to their effectiveness for learning and the irreplaceable social aspects of university.
- **Hybrid Model:** Com-Re suggested a combination of both online and in-person classes to maintain the benefits of each format. The second preferred solution of Cs-Pd was the flexibility to attend both online and in-person classes according to students' needs. Many Cs-Bo participants believed that a hybrid model combining online and in-person lessons would be ideal, allowing flexibility while retaining the benefits of in-person interaction.

- **Importance of Recorded Lectures:** Cs-Pd students recognized the value of video recordings for those who cannot attend lessons or as a study aid. A few Cs-Mo students supported online lectures mainly for economic and spatial reasons, appreciating the availability of recorded lessons. Several Cs-Bo participants emphasized the importance of having recorded lessons available for review and for students who cannot attend live sessions.
- **Flexibility and Accessibility:** Some CS-Bo participants saw online lessons as a flexible solution, especially beneficial for commuters and those with difficulties attending in-person classes.

5 CONCLUSIONS

This study allows us to offer a sociological description of today students, based on the provided habits. Today's students exhibit a pattern of behavior reflective of contemporary socio-cultural trends. The preference for studying at home suggests a shift towards individualized learning experiences, possibly influenced by technological advancements and the comfort of domestic environments, or the lack of space in the universities. This trend may also indicate a desire for autonomy and self-directed learning among students. The inclination towards solitary study aligns with broader societal trends of individualism and self-reliance, where personal autonomy and independence are highly valued. It reflects a departure from traditional communal learning environments towards a more personalized approach to education. The prevalence of students living with family members underscores the significance of familial support structures in modern society. Despite pursuing higher education, many students continue to reside with their families, emphasizing the importance of familial bonds and the role of family in providing emotional and financial support during the educational journey. The engagement in part-time work among a significant minority of students highlights the intersection of education and employment in contemporary life. This phenomenon may reflect economic realities, where students balance academic pursuits with the need to contribute financially to their households or gain practical work experience.

Unfortunately, students often do not fully understand the topics covered in class. Even if one of the main reasons is insufficient prior knowledge, no correlation was found between the level of understanding and the high-school grade.

The reliance on technological tools for note-taking and studying reflects the pervasive influence of digital technology in modern education, but even in this case, no apparent correlation exists between the level of understanding and the note-taking method. Although this result, students' proficiency with digital devices underscores the importance of digital literacy in today's knowledge-based economy.

All student groups suggested increasing what they appreciate more, i. e., more active student engagement and interaction also as a help to improve clarity of the lesson. Tools like Wooclap or Kahoot are really appreciated as the use of anecdotes or real-life case studies. Students also asked to improve the classroom environments which are often overcrowded. Moreover, they express appreciation for teachers' positive attitude and availability to provide additional support and clarify doubts.

Although students appreciated the availability of video recording of the lessons, and asked for them when not available, as aid for study especially for workers, there was a common preference for in-person classes since they are perceived as more effective and essential for learning. Moreover, students reported the importance of maintaining human contact and the social experience of university.

Overall, these trends paint a picture of modern students as autonomous, digitally savvy individuals who navigate a complex landscape of academic, familial, and employment responsibilities. Their study habits and lifestyle choices are shaped by broader societal shifts towards individualism, digitalization, and economic pragmatism.

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