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"MISS HAVING IN-PERSON CLASSES" – UNIVERSITY STUDYING DURING THE COVID-19 PANDEMIC

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Abstract. *Introduction.* Managing the formal education system during COVID-19 has become an unwanted challenge for the academic community. Without sufficient time for preparations, different models of distance education were applied. The aim was to ensure the continuity of teaching, to encourage the process of distance learning, and to enable their evaluation.

Aim. This study *aimed* to analyse the opinions of students from the Department of Early Childhood Education (hereafter ECE) at the Faculty of Humanities and Social Sciences (hereafter Faculty), University of Split, on their study conditions during the COVID-19 from March 2020. It was assumed that learning in an online environment encourages the development of new learning strategies. Family and work status and residence of students (in the place of study or outside it) were taken as predictor variables in assessing the quality and conditions of the study.

Methodology and research methods. The research was conducted online at the end of the 2020 academic year when students gathered online teaching experiences. The Google Apps tool was used in the data collection process. The Ethics Committee of the Faculty at the University of Split gave its consent to the implementation of this research. During online teaching, all students are informed about the purpose and course of research. Research included 68,75 % students (n = 156) studying at the ECE Department. The following aspects were investigated: forms and frequencies of distance learning; the possibility of students' response to study obligations (due to closed libraries); difficulties, advantages and possibilities of conducting online teaching; students' dissatisfaction with the quality of the organisation and implementation of online teaching, and opportunities for quality development.

Results. Findings identified difficulties in the lack of ICT competencies of both students and teachers, mixed-use of different platforms, workload and lack of adequate literature. Students assessed the greater availability of teaching materials and more reachable teachers as positive, and experience of discussions on social networks as one of the useful ways of distance learning. By exchanging the content of teaching materials, they developed new learning strategies and showed possible new adaptations to learning using social networking. Students' dissatisfaction with online teaching could be interpreted by their subjective reasons and contextual conditions.

Scientific novelty. The data processed in this research are triangulated with worldwide research on study conditions during lockdowns. It can be concluded that regardless of the previous lockdowns basic use of ICT (sending and receiving seminar tasks over e-mail), most higher education institutions were not ready for an overall transition to online teaching. The findings point to the need for systematic research into the possibilities of applying new technologies in the study process (learning, availability of relevant sources, networking of scientists,

and quality exchange of information).

Practical significance. Given that before the COVID-19 at this Faculty there was no similar research, nor experience with any online teaching forms, it is difficult to determine the extent of the change. Nevertheless, it is possible to conclude that the teaching staff did not have adequate ICT competencies for the implementation of quality online teaching. The quality of teaching in this research was contributed by more reachable teaching staff and their willingness to cooperate. In the changed living conditions as a consequence of the pandemic, it is possible to expect further changes in the way of studying. The insight and analysis of students' opinions through this research could contribute to the development of the quality of the teaching process in any given crisis.

Keywords: lockdown, network environment, online teaching, e-teaching, e-learning, social networks, learning strategies.

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«НЕ ХВАТАЕТ ОЧНЫХ ЗАНЯТИЙ»: УНИВЕРСИТЕТСКОЕ ОБУЧЕНИЕ ВО ВРЕМЯ ПАНДЕМИИ COVID-19

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Аннотация. *Введение.* Управление системой формального образования во время COVID-19 стало нежелательным вызовом для академического сообщества. В отсутствие достаточного времени для подготовки применялись разнообразные модели дистанционного обучения. Предпринимались усилия для обеспечения непрерывности процесса преподавания, стимуляции обучения и возможности их оценивания.

Цель. Целью данного исследования был анализ мнений студентов кафедры раннего и дошкольного образования факультета гуманитарных и социальных наук университета г. Сплита об условиях обучения во время COVID-19 начиная с марта 2020 года. Предполагалось, что обучение в онлайн-среде способствует развитию новых стратегий обучения. Семейный и рабочий статусы, как и место проживания студентов (по месту учебы или за его пределами) рассматривались как переменные-предикторы для оценки качества и условий обучения.

Методология и методы исследования. Комитетом по этике факультета гуманитарных и социальных наук Сплитского университета было дано согласие на проведение этого исследования в онлайн-режиме в конце 2019/2020 учебного года, когда студенты уже имели опыт обучения онлайн. Данные были собраны с помощью Google Apps. Во время онлайн-занятий студентам была предоставлена информация о целях и способах проведения исследования. В выборку вошли 68,75 % (N = 156) студентов, обучающихся на кафедре раннего и дошкольного образования. Анализировались: формы и частота дистанционного обучения, возможности выполнения студентами своих учебных обязательств (в связи с закрытыми библиотеками), трудности, преимущества и возможности онлайн-занятий; сте-

пень удовлетворенности студентов качеством организации и проведения онлайн-обучения и возможности повышения качества образовательного процесса.

Результаты. Результаты исследования указывают на недостаток ИКТ-компетенций у студентов и преподавателей, проблемы с использованием различных онлайн-платформ, отсутствие соответствующей литературы и, по самостоятельной оценке студентов, слишком высокую учебную нагрузку. Студенты положительно оценили доступность учебных материалов (предоставленных наставниками) и более доступное общение с учителями, а также опыт совместных дискуссий в социальных сетях, которые оказались полезным методом дистанционного обучения. Обмениваясь учебными материалами и данными, относящимися к содержанию программы обучения, они разработали новые стратегии научения и приспособились к обучению в онлайн-среде. Недовольство онлайн-обучением можно объяснить в первую очередь субъективным отношением студентов и общими контекстными условиями.

Научная новизна. Обработанные данные сопоставимы с международными исследованиями условий обучения во время локдауна. Можно сделать вывод, что большинство вузов независимо от предыдущей практики (онлайн-коммуникации студентов и преподавателя) не были готовы к полному переходу на дистанционное обучение. Результаты проведенной работы указывают на необходимость систематического исследования возможности применения новых технологий в учебном процессе (обучение в сетевой среде, доступность релевантных источников, создание сетей ученых и студентов, развитие систем обмена информацией).

Практическая значимость. Учитывая, что до COVID-19 на факультете гуманитарных и социальных наук не проводилось подобных исследований, сложно определить объем изменений. Тем не менее можно сделать вывод, что преподаватели не обладали необходимыми компетенциями в сфере ИКТ для обеспечения качественного онлайн-обучения. Открытость преподавательского состава и его готовность к сотрудничеству способствовали оцениванию качества обучения во время локдауна. В изменившихся вследствие пандемии условиях жизни можно ожидать дальнейших изменений методов обучения. Полученные результаты анализа мнений студентов могут стать ориентиром для повышения качества учебного процесса в условиях любого возможного следующего кризиса.

Ключевые слова: локдаун, сетевая среда, онлайн-обучение, электронное преподавание, электронное обучение, социальные сети, стратегии обучения.

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Introduction

Managing the formal education system during COVID-19 has become an unwanted challenge for public education policymakers and the academic community. Without sufficient time for preparations, different models of distance education were applied. The aim was to ensure teaching continuity, to encourage distance learning, and to enable their quality evaluation. The formal education system relatively quickly switched to online teaching with understandable initial misunderstandings.

In the newly created atmosphere, we all "agreed" to use e-technology to enable the educational process to take place, so it would be useful to define the terms of e-education used in this research paper. E-learning is learning in the virtual world – it means searching for information independently, networking with others. E-teaching is teaching and interactive learning in the virtual world, so it includes teaching and correspondence and exchange of information at the level of the student-teacher relationship, while online teaching is a process of learning and teaching in the virtual environment.

The analysis of the online learning process is necessary because it represents the starting point for better designed, more purposeful and better future actions. According to the United Nations from April to June 2020, the closure of educational institutions covered 94 % of education systems in more than 160 countries worldwide UN [1]. The UN Secretary-General Guterres described that particular time as a "generational catastrophe" that highlights inequality and mostly affects those who are already vulnerable (at risk of economic deprivation and social exclusion). Burgess and Sieverts [2] estimate that the global closure of educational institutions and transition to online teaching has resulted in disruptions in the learning and studying process, especially for individuals of lower socioeconomic status, and teacher errors in evaluating and assessing achievements. The authors also believe long-term consequences will increase educational inequalities.

The certainty of the current and possibility of future crises suggest the importance of online education and e-learning. With frequent discussions about the effects of information and communication technologies (ICT), online teaching has emerged as the optimal solution for learning. However, with several positive advantages, ICT and learning in a network environment have limitations and risks [3]. The task of public education policy, institutions and professional staff is not only to organise online teaching but to ensure a secure online environment, develop ICT competencies and encourage self-organised learning and critical thinking [4, 5].

New epidemiological conditions are reflecting in everyday's life culture. If we consider culture as construction of values and norms recognisable in behaviours and communication, relationships and artefacts, ways of distributing authority and solving problem situations that are characteristic of society and certain time, then one of the outcomes of the COVID-19 would be redefining the culture of education and studying. The author Ladson-Billings [6] regardless of the pandemic, points to the need for "culturally relevant pedagogy", thus promoting the idea of adapting pedagogical action to the (current) culture of the specific community. Changes in norms and consequent behaviour justify changes in teaching and learning culture. Caraballo, Lozenski, Lyiscott and

Morrell [7] highlight the possibilities for change toward social equality. They estimate that the development of socio-critical literacy of students is a potential for research and analysis of the existing context, promoting cooperation, generating ideas and joint projects of students, scholars and community. In the conditions of online teaching, this implies dynamic learning and critical involvement; quality relationships and constructive communication, and the culture of teaching practice, especially in the education programmes of educators (preschool teachers, teachers, professors). It is therefore justified to analyse students' perceptions of study experience during COVID-19 lockdowns. The findings of this research are the starting point for the development of the quality of studying – the application of different forms of learning and teaching, the need to develop the competencies of teachers and students, and the need for networking of scientists in researching new study opportunities.

Literature Review

1. Online Teaching – a Challenge, Opportunity or Obstacle

Online teaching is a form of distance education that takes place via the Internet [8]. Most of the teaching content is delivered online [9]. Prerequisites for the implementation of online teaching are appropriate ICT equipment, competencies of ones who are using it, and a quality Internet network. Online teaching imposes new dynamics of education and redefining the relationship between teachers and students and students with each other [10]. Contextual conditions are also important - housing and family environment, and social support. Due to the objective vulnerability of the individual, it is reasonable to assume the need for social support in terms of information and (psychological and epidemiological) counselling [11].

The implementation of online teaching moves away from the classic concept of teaching and the dominance of teachers in direction of active learning [12]. Active learning, as a process of independent search for information and its critical analysis, requires greater involvement of individuals [13, 14]. Such learning includes metacognition as understanding and analysing process and need for personal learning, recognising opportunities and ability to overcome obstacles, gathering and processing information, seeking and using someone else's help, and leadership if needed. The demands of contemporary education, summarised by Michnick Golinkoff and Hirsh-Pasek [15] as collaboration, communication, critical thinking, creativity, and self-confidence, correspond to dynamics of active learning. The same authors believe these are predictors for future careers that at this point, we cannot even predict. Authors Bulić and Kostović Vranješ [16], in addition to the above, also assume independence,

organisation and responsibility to be the features of active learning. Moving away from authority submission (teacher or information) maximises the diversity of ideas and generates creativity.

2. Advantages and Limitations of Online Teaching in a Network Environment

Analysing online teaching, Anderson and Dron [17] estimate that it is important to acquire and retain the interest of learners. The same authors also suggest the importance of comprehensive and timely informing students, the use of stimulating guidelines for further research, monitoring and evaluation of the process with regular feedback. E-learning advocates the networking of individuals who freely share information, knowledge and ideas, discuss and explore opportunities [10, 18]. Siemens [12] concludes that the development of ICT can facilitate communication and learning of individuals and society, and advocates the systematic application of network technologies for research and networking in which the individual takes responsibility for personal learning. The concept of networking in education includes the availability of information and knowledge but also implies building a specific relationship recognisable by the need to redefine availability and respect for leisure time and privacy of individuals, given the relationship between students and teachers, and students with each other [19]. A significant predictor of networking is intrinsic motivation, which Siemens [12] describes as the need to make personal "network connections" based on interest, reflection, logic, and reasoning. The connection of internal and external factors, personal experience, knowledge and environment can be interpreted as social constructivism.

Networking is not appropriate to interpret as a passive network connection but as a participation in an active exchange of information, discussion and analysis of data. Through joint networked interactions, communities of individuals-participants who recognise individual abilities and exchange resources are structured [20]. Through the acquired skills and argumentative discussion, it is possible to create a "look ahead" and thus contribute to curriculum development. Changes in the concepts of learning and teaching are gradually redefining the concept of study. Systematic learning, active approach, research and scientific study are expected [21]. Continuous interaction of students and teachers is assumed through joint analyses and discussions as aspects of the studying as process quality. Siemens [12] highlights student-teacher interactivity, high expectations; reciprocal cooperation of students with mutual respect for diversity (high abilities in certain areas), and active learning with time dedicated to learning.

The use of online communication channels and scientific resources available on the web is encouraged. The learning process is accepting as a value and the desired outcome (competence "learn how to learn"). Scientific literacy assumes a construct of functional knowledge, skills and affirmative attitudes, which Šuljok [22, p. 86] associates with responsible decision-making that will promote a balanced "economic, political and cultural development of society".

The process of applying new ICTs and teaching within a network environment also initiates new learning strategies. They can be interpreted as specific activities that an individual or group uses to facilitate and accelerate learning, make it more fun, effective, controllable and transferable [23]. New learning strategies in the network environment are recognisable by greater independence and purposeful networking, data mining processes, collaborative filtering, data analysis and reduction, and information exchange. They include cognitive and metacognitive processes of discovery, research, monitoring, study, evaluation and creation [24] and discussion, generation and re-examination of new ideas [25]. Meanwhile, new platforms for teaching, communication and learning are being developed.

Critical education pedagogy recognises students as persons with the right to participate in personal education and the power to influence outcomes [26]. Education should therefore be based on the development of critical literacy [20]. At the same time, acceptance of the principles of culturally relevant pedagogy directs teaching staff to understand youth culture, encourage student independence and responsibility, and empower students to initiate social change [6].

Numerous studies before lockdowns have highlighted the benefits of online teaching in an online environment recognisable in the availability of learning resources, flexible organisation of learning time and networking [4, 16, 17, 27]. Doubts about the use of ICT most often apply only to younger children [28–30].

Other research conducted in Croatia finds that most students have a positive attitude towards e-learning, and the level of ICT competencies of all stakeholders (students and teachers) stands out as the most important predictor of that positive attitude. For students, who have rated their ICT competencies as high, the next significant predictor is functional status, so part-time students are more inclined to learn in a networked environment than full-time students. For students with lower ICT competencies, gender is a more significant predictor, making female students more receptive to e-learning [31]. Additional benefits of learning in the online environment are most often recognised as teacher accessibility and the ability to manage learning time [9]; and fast access to information (including teaching materials) with a higher level of self-responsibility [16]. Partially contradictory findings are stated by Gabrilo and Rodek [32], in whose research the participants generally recommend "learning via Internet",

but perceive it as less effective than classical learning that is carried through traditional forms of teaching. These findings suggest a partial implementation of online teaching in classical live face-to-face (f2f) teaching.

Research by Chao, Jiang, Hsu, Chiang, Ng, and Fang [33] indicates how students of appropriate ICT competencies in a networked environment have better achievement in dimensions of originality, creativity, and flexibility than in classical live f2f teaching. Computer-mediated communication is perceived as a wealth of linguistic multicultural diversity and communication signs [33]. Networking generates the attitude that knowledge is stored in (network) "friends" [19], so Kop [34] as a prerequisite for e-learning cites the ability and skill of the individual to join an online community and build a sense of belonging to that community.

Anderson and Dron [17] emphasise that in an online environment, a teacher does not have superior control over the learning process, so teachers should always encourage further research, but also critical analysis, filtering and data reduction ability [17]. Grassian and Kaplowitz [35] point to the importance of teachers in designing a learning environment in which student can maximise their potential. Van Schagen Johnson et al. [29] conclude that the online teaching process also generates teacher creativity because according to Corbett and Spinello [19], the teacher him/herself has the opportunity to learn.

Some of the online teaching advantages can be interpreted as pragmatism. The fact that online teaching does not require the same physical location of participants reduces travel and other costs and can make organisation easier for students who are working [30, 36]. The limitations of the network environment are related to competencies (especially ICT and self-regulated learning), socio-economic status, and individuals' age. Limited experience and specific online vulnerability are associated primarily with preschool children and younger pupils [28, 30].

3. Studying in a Network Environment During Lockdowns

Learning opportunities in a network environment (during lockdowns) indicate inequality due to none/availability of educational opportunities. Individuals in vulnerable conditions (risk of poverty, low socioeconomic family status, poorer family functioning) have poorer educational conditions and lower educational opportunities [2, 37, 38]. In addition to not having sufficient technical resources, they are more exposed to stress due to financial vulnerability and social distance [2, 37].

The initial closure of educational institutions mainly caused time loss without organised online teaching, which negatively reflected on the continuity of learning stated Burgess and Sieverts [2].

The analysis of available research indicates new possibilities of online teaching, which the author Kim [8] describes as a joint (virtual) monitoring, e.g. analysing and evaluation of the educational process of kindergarten in which students of early and preschool education, practitioners and teachers participate equally. Although Kim [8] cites affirmative outcomes of such learning, this may be questionable from the standpoint of protecting children's identities and personal data.

Time is an important aspect of the learning process. Intensive learning in a short period of time usually has poorer outcomes than learning in a longer period of time, with the possibility of checking information (functional knowledge) [39, 40]. Responsibility for the quality of educational outcomes reminds us of the need for constant and systematic monitoring and critical analysis of the teaching process [41].

Specific teaching conditions during lockdowns limited the ability to evaluate and assess students' achievements. Testing of the knowledge was limited to online tests and various "inside institutional solutions", while the effect of cumulative assessment was lost. Murphy and Wyness [42] point to the problem of "predicted grades" (based on previously known achievements) which are generally lower for individuals at risk of social exclusion. However, Burgess and Sievertsen [2] indicate that certain solutions, such as dropping out of the classical tests may be useful for students, e.g. Piopiunik, Schwerdt, Simon, and Woessman [43] state that during the lockdown in Norway, all high school students received certificates with the possibility of accessing described educational outcomes to potential employers to identify their strengths.

The overall outcomes of online teaching during lockdowns in Croatia are still being investigated. The author Batarelo Kokić [44] assumes that learning in an online environment has contributed to the development of independence and self-efficacy of the individual, as well as recognition of the importance and multiple possibilities of e-education. Sablić, Klasnić and Škugor [45] find that online teaching is a multiple burden for teachers, which can have a direct negative impact on students. The research by Vinogradac, Vukičević and Mraović [46] is encouraging, showing no decline in young people's trust in the Croatian education system, unlike in surrounding countries. Nevertheless, research findings generally suggest the need to preserve the mental health of young people, especially in situations of new waves of COVID-19 [11, 46, 47].

The aim of this research was to gain insight and analyses students' experiences during online teaching as one of the starting points for the development of the quality of the teaching process. The problems of research include the selection of optimal forms of teaching and strategies for learning,

and distance teaching and e-learning, as well as the study conditions of the participants in this research.

It was assumed that:

H_1: There was a statistically significant difference in the way students learn before and during lockdowns.

H_2: Learning in an online environment encourages the development of new learning strategies.

H_3: Family, work status and students' residence in the sample are predictor variables for assessing the quality and conditions of the study.

Materials and Methods

1. Sample

The research sample included 156 out of all 224 enrolled students, which represents 68.75 % of all student years attending classes at the Department of ECE, University of Split. The sample of participants included both undergraduate and graduate students of ECE (Table 1). The majority of participants, 74.35 % live with their parents and are unemployed (66.2 %); while 12.82 % live in an (extra) marital union with children, which possibly make it difficult to study due to more obligations and care. In addition to female students, 3 male ECE students also participated in the study, but no gender determination was requested in the questionnaire due to anonymous participation.

Table 1

Participants' status

Participants' status		**Number of participants in relation to the academic year they attend**	**Family status**				**Work status**	
			Living with parents	**(extra) marital union without children**	**(extra) marital union with children**	**Lives alone**	**Un employed**	**Employed**
Study/ Academic year	1.	34 85 %	31	1	1	1	32	2
	2.	20 50 %	19	0	0	1	19	1
	3.	34 85 %	29	2	2	1	26	8
	4.	54 84.37 %	31	9	11	3	22	32
	5.	14 36.84 %	6	1	6	1	4	10
Total		156 68.75 %	116 74.35 %	13 8.33 %	20 12.82 %	7 4.48 %	103 66.02 %	53 33.97 %

Most of the students included in sample reside outside of the place where they study (n = 91; 58,33 %), and 71,42 % (n = 65) travel daily to classes. Place of residence was explored as one of the predictors of daily rhythm during regular classes.

2. Research Instrument

The Corona/UP-UDC Learning Questionnaire was constructed for research purposes following theoretical research and empirical insight into teaching. The instrument contained 4 criterion variables (residence, family and work status, and academic year of attendance) and 7 dependent variables formed as subscales: e-learning methods and frequencies (5 items, α = .68); availability of learning resources (6 items, α = .678); common forms of learning (11 items, α = .716); forms of learning during lock-down (9 items, α = .779), study conditions (14 items, α = .782); online teaching experience (9 items; α = ,715), development opportunities (14 items, α = ,819). The reliability of the whole research instrument by applying the Cronbach´s Alpha coefficient is .754, which is acceptable for this type of research. Participants were able to express their agreement or disagreement on a 4-point scale ranging from 1 ("strongly disagree") to 4 ("strongly agree"). To avoid the tendency of neutral responses, the scale did not have a zero point. The questionnaire also contained one open-ended question through which participants had the opportunity to argue their assessments or provide ideas. Most of them did not use this open question for further clarification.

3. Data Analysis

The collected data were processed using the statistical program Statistical Package for the Social Sciences/SPSS. For general description, measures of central tendency and scattering were calculated. A statistically significant difference in assessment between the groups was found using the t-test and the one-way ANOVA test. Factor and regression analysis was performed.

Results and Discussion

1. Organisation of Online Teaching

Research participants estimated that online classes were held in an average for 5 courses/subjects (out of a possible 7) while the average of 2 courses/subjects online classes were irregular (outside the usual terms and/or with a delay). For other courses/subjects (depending on the study/academic

year of attendance) only teaching materials are provided. Regardless of teaching method, in conditions of closed libraries, most teachers (on average 5 out of 7) provided students with teaching materials (PowerPoint presentations, scientific and professional papers, books in PDF format). Research students estimated that those were the most common ways to learn (M = 3.21; SD = 0.69). This is one of the reasons why the majority of participants stated that they were mostly (n = 108; 69.2 %) and partially (n = 36; 23.1 %) satisfied with the availability of teachers. Students generally did not self-provide recommended literature before libraries closed (on average for the 2.5 out of 7 courses/subjects), but downloaded materials from the web (for the 4 out of 7 courses/subjects). Nevertheless, the majority of participants (n = 124; 85.9 %) estimated that the teaching staff partially and/or exceptionally tried to adapt to new situations.

2. Learning Strategies

Research participants were asked to assess personal learning strategies (ways of learning and use of individual learning sources) and possible differences in learning before and during lockdowns (Table 2).

Table 2

Assessment of common ways of learning before and during online teaching (df = 155)

Common ways of learning before and during online teaching	**Before COVID-19**		**During online teaching**		**t**	**p**
	M	**SD**	**M**	**SD**		
Listening to lectures in class	2.76	0.722	2.81	0,895	- .656	.513
Actively participating in classes	3.05	0.777	2.61	0,873	2.547	.078
Using the recommended literature	2.85	0.780	2.63	0,939	- .602	.548
Using teaching materials	3.12	0.765	3.21	0,691	1.201	.232
Through preliminary assignments	2.42	0.834	2.73	0,890	1.,324	.276
Searching web sources	2.70	0.855	3.40	0,960	-3.717	.000
∑	16.589	2.319	17.269	2,931	-3.227	.002

Students estimate that they were more engaged in classes before COVID-19. During lockdowns, they learned more from web materials and through preliminary assignments.

A statistically significant difference in learning before COVID-19 and during online teaching was observed, using the *t-test* for repeated measurements, for web resource search activities (t = -3.717; p ≤ .000). However, the cumulative values of the assessment of individual learning modes indicate a statistically significant difference between learning before and during COVID-19 (t = -3.227; p ≤ .002). As new learning procedures during lockdowns, students singled out

the exchange of collected learning materials with other students (M = 3.01; SD = 0.89), following the discussion on social networks (M = 2.64; SD = 0.99) and active participation in discussions on social networks (M = 2.29; SD = 0.96).

3. Studying Conditions during Rigorous COVID-19 Measures

The assessment of studying conditions during online teaching is suitable for factor analysis (KMO = .733; χ^2 (45) = 383.725; p < .000). Using the principal components method, with Promax rotation of the basic solution, based on the Scree test, 3 factors were singled out (Table 2) which together explain 59.359 % of the variance. The first factor, which explains 32.785 % of the variance, can be interpreted as subjective difficulties (personal ICT competencies, equipment, housing conditions, and personal fears). The second factor is objective organisational conditions (non-availability of teachers and literature), and the third one is personal capabilities (personal time management, which can be interpreted as an internal locus of control).

Table 3

Structural Matrix

Structural Matrix Items	**Components**		
	Subjective difficulties	Objective conditions	Personal capabilities
Lack of appropriate equipment (quality computer, internet connection)	- .796		
Insufficient personal ICT competencies	.750		
Personal fears (uncertainty…)	.723		
Inadequate housing conditions (Impossibility to distance from noise, etc.)	.659		
Unavailability of teachers		.779	
Lack of class literature		.677	
Irregular teaching timetable		.659	
Inappropriate timetable (out of usual schedule, untimely information)		.649	
Teacher availability		.532	
Lack of social interactions as a form of learning		.458	
Too many study commitments		- .438	
Possibility to organise personal learning			.822
Safety (absence of fear from infection)			.680
More free time			.676

More free time was singled out by the participants as the most significant advantage of online teaching (M = 2.54; SD = 1.024), while insufficient ICT equipment (M = 3.10; SD = 1.033) and lack of social interactions (M = 2.83; SD

= 1.061) were singled out as difficulties. The research findings indicated that, apart from the fact that 21.8 % of participants (n = 34) estimated that they did not have sufficient ICT competencies, 32% (n = 50) of participants did not have adequate ICT resources.

The initial hypotheses assumed a connection between the assessment of study conditions and criterion variables. A statistically significant difference in the assessment of the importance of an individual factor was found only in relation to the academic year they attending (Table 4).

Table 4

The assessment of study conditions according to academic year of study they attend

Study Conditions	F	p
Subjective difficulties	.931	.448
Organisational conditions	2.909	.024
Personal capabilities	2.316	.060

Using the Bonferroni post hoc test, a statistically significant difference in the assessment of organisational conditions factor (non-availability of teachers and literature) was found between first- and second-year graduate students compared to undergraduate students ($p \leq .01$). The explanation may have been found in students' living conditions because the graduate courses were organised as part-time studies whose students are employed, and provide for their families.

4. Experience of Online Teaching

The findings of this research indicate that the majority of participants (53.8 %; n = 84) were dissatisfied and extremely dissatisfied with the organisation of online teaching. Considering epidemiological safety as a reason for switching to online teaching, the majority of participants (n = 84; 53.8 %) estimated that such organised teaching does not contribute to an overall feeling of security. Nevertheless, 37.2 % of participants (n = 58) believe that online learning partly contributes to the absence of fear of infection. No statistically significant difference was found in the assessments concerning the academic year of attendance, nor the employment status.

The majority of participants (n = 97; 62.2 %) think that they lack and extremely lack all-day social interactions. Arguing the assessments (through open-ended questions), the participants of this research (f = 17) mentioned the problems of insufficient ICT competencies of teachers, use of different (not unified) platforms for individual courses/subjects (f = 47), and the difficulty of finding recommended literature (f = 69). As advantages of online teaching,

participants in this research recognise flexible learning organisation as one of the aspects of self-regulated learning (f = 43) and the time they save by not travelling to the Faculty facility (f = 39).

Following the e-learning experience, research participants assessed what could contribute to the quality of teaching and studying in the near future (Table 5).

Table 5

Possible improvements in the quality of online teaching

Possible improvements	**M**	**SD**
Using a unique (only one) platform for online teaching	3.51	0.81
Availability of teaching materials	3.39	0.83
Facilitating the procurement of quality ICT equipment (for example, student vouchers for computer purchase)	3.33	0.83
Availability of individual lectures recordings (presentations)	3.19	0.96
Lectures by experts from other destinations (universities or institutions)	3.18	0.94
Online networking with practitioners (e.g. presentations and quality practice analysis)	3.17	0.95
Online short exams (quiz) to check understanding of learning content	3.17	0.91
Networking with students from other faculties (via online applications and social networks)	3.13	0.98
Education about the possibilities offered by ICT	3.06	0.96
Discussion on social networks as a form of shared learning	2.96	0.99
Online exams via web applications	2.96	1.04
Individual online teacher – student consultations	2.95	1.04
Online theoretical teachers' presentations	2.54	1.03
Online student seminar presentations	2.28	1.06

5. Predictors for Assessing the Quality of the Study

By applying multiple regression analysis, family and work status of all participants (undergraduate and graduate students), place of residence and academic year of studying proved to be statistically significant predictors on quality assessment of online teaching ($R = .266$; $F_{(4.151)} = 2.881$; $p \leq .025$). The predictor set interprets 5.1 % of the total variance. The most significant predictor is participants' family status (ß = .199; p = .022). Although the values of common variance are not high, they clearly indicate the importance of understanding the students' life context.

Table 6

Regression analysis of online teaching quality assessment

Model		Un standardised Coefficients		Standardised Coefficients	t	p
		B	Std. Error	ß		
1	(Constant)	20.203	.957		21.105	.000
	Academic/Study year	.242	.213	.106	1.136	.258
	Work status	- .461	.588	- .074	- .784	.434
	Place of residence	- .514	.318	- .128	-1.617	.108
	Family status	.670	.290	.199	2.314	.022

These findings partially confirm the hypothesis that family, work status and students' residence from the sample are considered predictor variables for assessing the quality and conditions of studying. The importance of family status as a contextual (pre) condition of learning has been recognised.

6. Students' Discussion on Research Findings

At the beginning of the first lockdown, 198 ECE students voluntarily joined the closed FB group intended for joint learning (thus making 88.83 % of all students at the ECE Department). Most students (about 80 %) participated in group activities. FB group published the descriptive findings of the survey. Interestingly, these findings demonstrated that through the online survey questionnaire, where anonymity was guaranteed, participants mostly avoided the possibility of discussion and/or comments through the open question while participating in the FB group, where their identities were revealed, the majority (n = 143; 91. 66 %) responded to the findings with a comment or a sign.

Commenting on the representation of certain forms of learning, students stated that they more often searched and exchanged scientific and other professional papers from the web. Within the FB group, they developed the practice of "opening topics" (according to the content of the course/subject) – by enclosing summaries of papers and e-links to thematic sources and discussions. As a benefit, they emphasised the availability of teaching materials ("There is nothing that professors will not give us now").

The real benefits of such a practice are questionable. This possibly encourages (mechanical, non-selective) memorisation of listed items of subject content, but also causes a lack of motivation for students to actively analyse (additional) learning materials. Some students found that behaviour more relatable to "old" habits ("Those who have been diligent and study "before" will have no problems now").

They interpret the advantage of online teaching as "saved time" ("I save at least 2-3 hours that I would normally spend waiting and travelling by bus to college") and a certain relaxation ("You can go to classes in your pyjamas"). Such opinions indicate the problem in the daily dispersion of online classes, i.e. the need to conduct classes according to a regular schedule.

Distance teaching is described by students also as burdensome and without a clear structure compared to classroom teaching. They primarily lack social contacts ("I miss that live communication; I miss discussions and learning now and here; I miss live classes"). At the same time, this is possibly one of the reasons for the willingness to engage in discussions in the FB group.

Commenting on the research data related to the studying conditions, the participants of the created FB group further argued the environmental conditions. Some students had aggravating family conditions ("The older daughter wants peace because she also attends the online classes. The baby is crying. The dog is barking, and I'm trying to follow the class"). However, they mostly stated that they were limited by the unavailability of adequate technical support (quality computer and internet connection speed).

The students further commented that they were overloaded with tasks in conditions of online teaching. One student stated: "We have a lot more responsibilities than usual. In talks with other students, it seems that everyone has more responsibilities than before". At the same time, they stressed that teacher instructions are usually insufficient and incomplete. The disorientation and/or missed self-evaluation of the education system is best described by the comment of a student who asked "Can all these messages, tasks, notifications, applications be put in order?" The existence of this perception is confirmed by other research during the lockdown in Croatia [47].

Some students also point to the problem of day structure - the ratio of online classes, e-learning and free time. They saw "targeting" as the problem because their priorities were "disrupted" during COVID-19. They concluded that it is necessary to "organise time and daily rituals" on a personal level.

As one of the advantages of online teaching/e-learning, students recognised social network communication through created FB group. It is possible that they experienced the activity on social networks as a ritual, which could be the reason for the (relatively) high engagement. The "closeness" of the group suited them, which was possibly an indicator of insecurity during public exposure. First-year undergraduate students said they "initially only followed what was happening". They also emphasised that they learned the most from the experiential examples of older students (usually graduate students).

"In the beginning, I have to admit, I was uncomfortable to express my opinion openly, considering that a large number of people were involved, with

whom I do not have any dipper contact. When I gain courage, it became easier. In fact, I think this is one of the biggest advantages - learning to express my opinion freely and engage in discussion without any discomfort, ... all because of learning. I'm slowly succeeding in that".

"Before commenting, I can read what other students think, and in what way".

"I'm practicing tolerance here. This is something that we, as teachers will have to promote in children as well, so it is necessary to show it by example".

"I like to affirmatively discuss... this way we learn from each other".

"I like discussions and critical comments. This became the highlight of the fun in "Ages of Corona".

Ultimately, students in the FB group stated that blended teaching and learning (f2f + e-learning) would be a good solution regardless of the pandemic. They were interested in the possibility of self-assessment through tests, and consider *"a good idea"* to publish abstracts of individual papers, and a link where the paper is available. Gradually, they began to accept online teaching because *"It lasts a little shorter than teaching "in person"*, which in their opinion is very good, because *"it's flexible"*. This note suggests the need to explore student concentration during lessons.

7. General Discussion

This research provided insight into students' opinions about studying during online teaching in the context of the COVID-19. Although the sample includes the majority of the ECE Department students in Split, it is not representative (size, structure and form of teaching) of the student population in Croatia. Nevertheless, collected and processed data are important for understanding students' paradigm as a starting point for the development of educational curriculum, and culture of studying. During the lockdowns, different universities started to organise their online teaching on different platforms (Google meet, Zoom, Teams, etc.) without any prior knowledge (how to use them), or prior courses for using them, for students and teachers. Our Faculty, prior to COVID-19 did not have any experience in using any platforms for teaching or learning. That fact, unfortunately, led to a situation of having no classes at all for some courses/subjects. Inadequate or non-existing interaction between students and teachers, besides exchange of teaching materials via e-mail, could be explained by the unpredictability of the situation, but also insufficient teacher competencies and lack of systematic self-evaluation. The closure of libraries has also limited the access to learning resources.

Difficulties were recognised in the lack of ICT equipment and competencies of students and teachers. As aggravating factors is the inconsistency of teaching form and contextual factors (unavailability of the necessary literature, fear).

This generates student dissatisfaction which negatively affects learning. The participants of this research recognised the flexible organisation of learning, networking, and availability of teaching materials as advantages. Also, *"saving time"* if they do not travel to college is considered an advantage of e-learning.

Students further more often searched and used available web resources, and exchanged different materials. They recognised networking and discussion on social media as new learning strategies. They also affirmatively evaluated greater (online) accessibility and connection with teachers. These results indicate the justification for further encouraging such practices and possible networking with scientists and students from other faculties. According to the same model, it is possible to organise virtual networking with practitioners, which can contribute to practice in lifelong learning.

Burgess and Sievertsen [2] see the solutions to problems generated during the closure of educational institutions and transition to online teaching in providing additional resources to institutions to compensate for gaps in education, especially towards individuals in vulnerable groups. How these additional resources would be used depending on the specific situations of the individual educational community. Providing additional financial resources would also help to organise practical classes for students with different vocational needs, which was missing during epidemiological measures. Although it is difficult to make up for a lost time, it could possibly contribute to the development of professional competencies of future preschool teachers of the ECE Department who participated in this research.

8. Practical significance

Online learning conditions were the problem in most countries during lockdowns [37]. In addition to subjective difficulties (inadequate housing conditions and insufficient ICT competencies), insufficient ICT resources were also a problem. The findings point to the need for public education policymakers to work with the private and public sectors to ensure quality internet and facilitate the procurement of computers. Nevertheless, the certainty of future online teaching points to the need to redefine relationships and determine the model of everyday communication while respecting the free time of the individual person [45].

Conclusions

The findings of this research confirmed the logically set hypothesis that changes in the teaching process during lockdowns also initiated changes in the ways of studying and learning. In this research, most participants expressed dissatisfaction with online teaching. Possible reasons could be a feeling of

inadequacy due to a lack of students' ICT competencies which previous research singles out as the most important predictor of online teaching acceptance. It is possible that the main source of dissatisfaction is a sudden change in living conditions, stress and a sense of vulnerability that generates resistance to online teaching [47].

A mental health survey in Croatia in 2020 indicates that more than half of the participants had pronounced the levels of depression, anxiety and/or stress, and every fifth person coped with severe or extremely severe depression [11]. Mental health in women was recorded as more impaired, which is a significant figure for the population of ECE students where 98.7 % of students are women. Professional psychological support to Faculty students and teachers was provided online, immediately after the outbreak of a COVID-19.

The possibilities of new long-term isolations require better preparedness based on the assessment of existing and the development of new models of support in education, such as organising and providing more systematic support to teachers and new learning strategies. The findings of this research suggest that such a strategy requires not only teacher education but also student education on ICT competencies and the use of various scientific sources.

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