

THE CHALLENGES OF CONDUCTING ONLINE INQUIRY-BASED LEARNING AMONG TERTIARY LEVEL EDUCATION

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Abstract

Online learning has become important approach in education nowadays, that requires practical changes at all levels of education. These educational changes can be best noticed through students who have experienced three phases on learning in higher education: Pandemic era-the isolated learning from homes, hybrid learning-home combined with in-class learning, and the recent/traditional phase: all-in-class learning. As such, 159 students/future teachers participated in the study in order to see the differences regarding online learning and their attitudes towards inquiry-based learning (IBL) in English classes. The results reveal that future teachers did not have any previous experience in online learning before Covid-19 and they are not eager to learn online, however, if they have to, then inquiry is their best learning as it triggers their critical thinking and self-paced learning, especially focused in the 'Exploration Phase'. The study concludes that inquiry-based learning via online is considered very powerful, however, teachers need to effortlessly embrace novice, 'ad-hoc' practical educational changes, as these current development practices require pedagogical training practices for online teaching, in line with substantive application of the online teaching tools.

Keywords – Undergraduate, Inquiry-based learning, English language, Online learning.

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1. Introduction

The rise of Covid 19 led to the tremendous change in worldwide teaching systems, that urged unconventional teaching, a higher level of technology specialization, and diversity and adaptability of teaching topics in the new way of teaching i.e. online teaching and learning, and enable the educative institutions to use a variety of online platforms (Bączek, Zagańczyk-Bączek, Szpringer, Jaroszyński & Woźakowska-Kaplon, 2021; World Bank Group, 2020; Lau, Tang, Chau, Vyas, Sandoval-Hernandez & Wong, 2021; Alsoud & Harasis, 2021; Office for Civil Rights, 2021; Khan, 2021; Özüdoğru, 2021).

Western Balkan countries (Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia) and their education systems were also affected with this global pandemic outbreak. Moreover,

education in these countries had already faced serious challenges even prior to the global pandemic breaking out (World Bank Group, 2020). These rapid measurements were taken in order to provide the fastest, the easiest and the “catchiest” way to acquire new knowledge in the application of online learning.

Based on Eurydice report (2019), Balkan Countries had had a high number of hours for teaching information and communication technologies (ICT) which were of help for the pandemic era, for the mandatory online learning. Unfortunately, there is no data about Kosovo in this report. Kosovo as a small country in the Balkan Peninsula, even before COVID-19 pandemic, had undertaken adequate policies to support HEI to incorporate all necessary elements for modern education that would fit society’s needs, wishes and lacks as teaching conditions and resources are both seen as a major factor, as well as used as a tool to support the change of the situation of the teacher development (Saqipi, Asunta & Korpinen, 2014). Similarly, to other countries, the HEI in Kosovo issued instructions for online teaching, i.e. how to teach in the Google platform (World Bank Group, 2020). In addition, Limani, Hajrizi, Stapleton and Ratkoceri (2019), conclude that Kosovar higher education institutions did have strategies for the use of ICT in learning, however, not all of them had the exact knowledge to apply it, as the implementation of digital technology in HEIs is not considered “an easy mission” (Limani et al., 2019: page 57).

In fact, nowadays teachership includes ability, global knowledge and specific knowledge, i.e., subject knowledge that is constantly changing, Konan (2010). Based on Kolb’s experiential learning model (Kolb & Kolb, 2005) which includes experience, observation, conceptualization and experimentation within the cycle of learning, then it is beneficial if we pay attention to these activities during online learning. And, as such, it is worthy to raise questions about how these students of the 21st century want to learn (Gholam, 2019) and can learn in specific circumstances i.e., how do HE students “develop a relevant critical approach toward the use of ICT” (Eurydice, 2019: page 50) and conduct ‘real learning’ while learning online.

In the context of English as a Foreign Language in higher education policies, this study focuses on online types of courses that encapsulate diverse specific topics by combining global (and local) teaching and learning competencies at a Higher Education Institutions (HEI) in Kosovo and students’ perceptions regarding online Inquiry Based Learning (IBL).

1.1. Changes in the Online Learning Process

Considering the complexity of learning via online learning, then implementing online IBL is considered ‘a must’. Especially in countries that are traditionally loyal to old teaching methods and practices, yet that have started using technology in their teaching, and have made drastic changes in teaching to enable communication and activities with students by using various platforms (Limani et al., 2019). Since it is the educators’ job to apprentice young people into the practices of generating more knowledge (Friesen & Scott, 2013), this study aims to understand how HE students conducted IBL in the context of online learning, considering that IBL is valuable and challenging as it triggers students’ critical-thinking, problem-solving, and analytical skills (Baldock & Murphrey, 2020) that is, “IBL engages students in the learning process and maximizes learning” (Gholam, 2019: page 113), pointing out that similar inquiry-based investigations have been widely embraced in college curricula (Gormally, Brickman, Hallar & Armstrong, 2009). In addition, IBL is best understood by Bybee’s (2009) 5Es, which succinctly explain IBL in each phase: Engagement phase, Exploration phase, Explanation phase, Elaboration phase and Evaluation phase.

Taking into account Guido’s (2017) seven benefits of inquiry-based learning: Curriculum Content Reinforcement, “Warms Up” the Brain for Learning, Promotes a Deeper Understanding of Content, Helps Make Learning Rewarding, Builds Initiative and Self-Direction, Works in Almost Any Classroom, Offers Differentiated Instruction, then it would be beneficial to inquire about the extent of these factors in online learning in English classes. A palatable definition about IBL is given by Friesen and Scott (2013: page 14), pointing out that “a range of inquiry approaches to education move away from passive transmission-based pedagogy”. In addition, Aditomo, Goodyear, Bliuc and Ellis (2013) point out that IBL

encourage students' critical thinking related to their ideas and the impact on their practice. As such the study aims to address the following questions:

- To what extent are the students satisfied with online education activities?
- What are the issues that they usually experience in online learning?
- Can the students conduct inquiry-based activities online? If yes, how?
- Is online IBL wanted by the students nowadays?

2. Method

This research was conducted at a higher education institution, the Faculty of Education in Mitrovica, Kosovo. It included quantitative and qualitative data. The aim of this research was to examine the learning process at this HI, the students' attitudes towards online learning activities, and IBL conducted online. It is qualitative research since it is concerned with students, targeted in understanding their own world during pandemic, adding constructivist meaning in view of their experiences (Saqipi et al., 2014).

2.1. Participants

The population of the research consisted of 159 students of the Faculty of Education (future teachers, hereafter), including Preschool and Elementary department. Based on the Faculty Curriculum, English language is a mandatory course, taught at the 1st and 2nd year. HEIs in Kosovo do not have any language entry test for undergraduate programs, however, a foreign language course is mandatory for all Faculties, including the Faculty of Education, as well. As English is taught since grade one (6 years old), by reaching the tertiary level, the students should at least have knowledge for B1 level of CEFR. Based on the data obtained from the final exams registered in the Electronic System for Student Management of the University, the participants' English knowledge level was B1.1 for the first-year students/participants, whereas the second-year students had average level of B1.2.

2.2. Instruments

By encouraging future teachers to respond to the online questionnaire, the study sought to interconnect the conditions of inquiry-based learning practices in EFL online classes. Thus, the authors, who were also teachers of the participants in the study, utilized Bączek et al. (2021) questionnaire. However, it was modified and adapted based on the research needs. In addition, it was assessed by the fourth author.

Structured questionnaires were sent to the participants via an online environment. The questionnaire was accessed online from June, 1 2020 to October, 31 2021. Prior to its launch, the future teachers were fully informed about the research aim and agreed to voluntarily participate. The research included two phases: The first phase - online questionnaire that included 20 questions regarding students' perception of online learning (Bączek et al., 2021) and in the 21st question they could add a comment related to online learning and teaching. The demographic data of the participants was not taken into consideration, as the university includes a very homogenous group: all Kosovar Albanians from three regional cities. In our case, as the participants were from the Faculty of Education, all females who had continued higher education immediately after finishing high school, their age was 18.5-21.

The 2nd phase included the interview with 18 future teachers regarding IBL activities in English classes. That is to examine student engagement in their learning (Aditomo et al., 2013). Although there were only 18 interviewees, the researchers consider that this number fulfills the criteria for this kind of research. It is based on Lapan, Quartaroli and Riemer (2012), as cited in Syahril, Nabawi and Safitri (2021) who mention the sufficient number of interviewees in the use of semi-structured interviews. These interviews provide more discussion than straightforward responses which are needed to collect information in the quantitative study. As frame of reference, the interview questions considered Baldock and Murphrey (2020: page 239) questions, however, adapted to the study aims. All in all, based on the information needed, the interview questions were designed to overcome these future teachers' unwillingness to answer,

then determined the question wordings and question the order of each question. Finally, the interview questionnaire was prepared for reproduction.

2.3. Cronbach's Alpha

Regarding the dimensions in the instrument and the reliability index of the variables is best described by utilizing Cronbach alpha. In our case, the Cronbach's alpha is 0.8429, which expresses a high level of internal consistency of the variables.

Cronbach's alpha	Cronbach's alpha based on standardized items	No. of items
0.8429	0.8429	20

Table 1. Cronbach's alpha

2.4. Data Analysis

As the study dealt with two instruments, the data were analyzed in two phases: In the first phase, the result of the questionnaire regarding students' approaches towards online learning perceptions was quantitatively analyzed through IBM SPSS Statistics Viewer, and presented in percentage; Whereas the second phase included Content Analysis (Saqipi et al., 2014; Syahril et al., 2021), by transcribing and scanning the responses regarding online learning and inquiry-based learning. Precisely, data analysis was carried out by three researchers, whereas the fourth researcher monitored the procedure and challenged the work. As in order to reach comprehensive data and proper interpretation, "data analysis must be carried out by more than one person" (Burla, Knierim, Barth, Duetz & Abel, 2008; Schreier, 2012, as cited in Syahril et al., 2021: page 299). After the verbatim transcription in word document, the scanning phase was conducted by scrutinizing each responders' question. As there were only 18 responders who volunteered to answer those 10 questions, the researchers individually examined all the responses and then compared them. Finally, similar data identified from the three researchers' notes was submitted to the results. The future teachers who volunteered to be interviewed were identified as S1, S2, ...S18.

3. Results

The practices that promote critical thinking, reflection, questioning, collaboration, communication, and research (Gholam, 2019) are demanding in learning. However, in the data obtained such thing is not evident. The students responded that they lacked confidence in collaboration with friends, and online learning was not really the most desirable.

If we analyze the first question regarding students' experience in online learning, 71% of the participants agree that they had not had online learning experience at all, prior to Covid-19 pandemic outbreak. This leads us (researchers) to see evidence of the lack of application of novel teaching methods required in the 21st century. Likewise, it is in line with the interview responses (see the interview sessions) that to students, online learning meant preparing seminar papers, projects. They also pointed out the problem of internet connection as an issue in online learning, although they have technology means to attend online classes through laptops or phones. In fact, the responses show that they mostly rely on their phones, as tools for online learning, which again show that they have (some) conditions to learn. In addition, responses of statements "7. Online learning is not difficult", "8. I like the way I learn online", and "9. Learning online is easier than learning in the classroom" show that these future teachers are not satisfied with this kind of learning, certified by the next statement, statement 10 "I like in-person learning and teaching", in which almost 90% of the responders long for real classroom learning activities, as they consider that in online learning classes it is harder to concentrate and they hesitate to become active participants in lessons, as shown in statement 12, 13,14, and 15. The result is that they also have no confidence in passing the final exam. 72% of responders also disclaim that "Learning online nothing changes. It's the same as in regular classroom learning", this shows that they are mainly used to classroom learning, although this statement (statement 18) is in line with the first statement responses, where 71% claimed that they did not have any

experience with online learning before the Covid-19 pandemic. This dislike of online learning is also confirmed by the following statement 20 “Online learning is monotonous. I would not like it for further studies”, desiring traditional, face-to-face, classroom learning.

Perceptions of online learning			
Nr.	Question	Yes%	No%
1	I have had experience with online learning in the past (before Covid-19)	28.9	71.1
2	I am concerned about online learning	50.3	49.7
3	Connecting to online learning takes us a while.	55.3	44.7
4	I have the conditions to attend online learning.	86.2	13.8
5	I use my laptop for learning	58.5	41.5
6	I use my phone for learning online	69.8	30.2
7	Online learning is not difficult.	40.9	59.1
8	I like the way I learn online.	35.2	64.8
9	Learning online is easier than learning in the classroom	11.9	88.1
10	I like in-person learning and teaching	89.9	10.1
11	I am more passive student when learning online	59.1	40.9
12	It's hard to concentrate when learning online	70.4	29.6
13	I do not have the courage to chat with colleagues and the teacher while learning online	52.8	47.2
14	Online learning has limited our conversation or expression	61	39
15	When learning online I do not often use the book (hard copy), but only listen.	67.3	32.7
16	Learning online has not enabled me with much knowledge outside of the lecture presented.	56.6	43.4
17	I doubt I am sufficiently prepared to pass the exam.	52.2	47.8
18	Learning online nothing changes. It's the same as in regular classroom learning.	27.7	72.3
19	Online learning has not helped me in my professional development.	48.4	51.6
20	Online learning is monotonous. I would not like it for further studies.	64.8	35.2

Table 2. Future teachers' Perceptions of Online Learning

Regarding the 21st question, in which these future teachers could add a comment regarding online learning, the data reveal discomfort, dislike, and negative attitude towards online learning. Precisely, out of 159 students/participants, only 48 added a comment regarding online learning. Demotivation, monotonous classes, dislike, boredom in online classes are mentioned by 37. Eight participants added positive attitudes while learning online, whereas only three students had high opinions about online learning, adding challenges to start a new way of learning, more collaboration, self-discipline and being more focused.

The second phase of the study included interviews with 18 future teachers, who volunteered to respond to the questions (Table 3), which are based on Baldock and Murphrey (2020: page 239).

Interview Questions for Future Teachers' Perspectives of Inquiry Based Learning	
Number	Question Text
1	When did you start online learning?
2	What is your opinion about online learning?
3	Do you have difficulties while learning online? What kind: Learning environment, Internet connection, Family members/noise, Lack of interactions with other students and teachers, technical problems?
4	Are you able to conduct any online inquiry-based learning?
5	What are the advantages /disadvantages of online learning?
6	Describe inquiry-based learning in your own words?
7	Do you feel that online inquiry-based learning opportunities have improved your critical thinking skills? How so?

Interview Questions for Future Teachers' Perspectives of Inquiry Based Learning	
8	What do you think is most beneficial about inquiry-based learning opportunities in online learning?
9	What did you like most/least about inquiry-based learning opportunities in online learning?
10	Is it better to be taught the background information before the inquiry-based learning opportunity or do you prefer that the teacher gives you the connections after the activity?

Table 3. Interviews regarding IBL.

As mentioned, the second phase included Content Analysis (Saqipi et al., 2014). The data of the interviews was transcribed then scanned.

The interview responses truly certify the questionnaire data. One student mentioned (S17):⁹ *When we have to prepare seminar papers, projects, or to present a specific topic, we use the internet and discussed with friends I do not learn best while having online classes. I cannot not express myself as I want to, as an active student. Actually, I know and I am prepared for these dull classes, although the teacher tries to make classes active, us (students) always find a reason not to be active. We always complain that there are electricity problems/internet connection problems, noise from other family members at homes, ...Let that most students do not turn the cameras on, although teachers always ask to. I personally try to be engaged in group learning, preparing small projects or debates, where we are given time and we can search online material and prepare ourself for these presentations. It is really fun as we can share our homework/projects online and our friends can make questions regarding homework freely, knowing that the teachers are not in the group. Yes, definitely these inquiries enhance critical thinking. But still, only few are willing to participate in these online classes. However, I consider that IBL is an advantage in modern learning.”*

The latter sentence confirms Guido (2017), who points out that IBL creates a more engaged classroom, yet this student/future teacher indicates that only few are willing to participate in these kinds of activities when conducted online. Another interviewed participant has more positive attitudes towards online learning. She claims that online classes are well prepared which help her become more confident on searching relevant issues following curricula topics. She also pointed out (S7): *“Online classes are helping me become a better searcher on the internet (for a specific topic). Then I can read at my pace, or make/write questions first, before sharing them in the group.”*

According to the results, these students express feelings of frustration while being taught online, in addition the results reveal a lack of real learning and a lack of enthusiasm.

Nr.	Question	Responders
1	When did you start online learning?	18 students claimed that they started online learning immediately after Covid-19 burst out
2	What is your opinion about online learning?	18 responders do not like online learning
3	Do you have difficulties while learning online? What kind?	S1, S2, S5, S6 pointed out the internet connection S3, S4, S7-S13, S16, S17 the living and study environment was an issue; S3, S4, S15, S18 less interactions with students and the teacher

Table 4. Online learning issues

Based on the responses, the interviewed future teachers pointed out that they have been challenged with online teaching since the beginning of the Covid-19 pandemic. Whereas, the second question regarding online learning, the responders do not like this kind of learning, as shown in S1: *“I don’t think that it is as effective as in-person learning. I did not like online learning.”* Or S6: *“I find it boring, not interesting and personally think that it is difficult to get the hang of it from both sides (teachers and students).”* However, there were three students who added positiveness regarding this issue, such as in student’s response, S9: *“Although online learning during Covid-19 was a necessity, nowadays it is still not as effective as in-person schooling activity. After a relatively long period of online learning, we are somehow accustomed to online learning, which turns out to be an effective tool of learning, and we can easily continue in the next*

semester.” Generally, online learning issues are represented by S15: “At the very beginning, online learning was difficult in multiple ways. First and foremost, the switch of environment from education facilities to following attending the lectures and reading for hours in my bedroom was a challenge I faced difficulties to reconcile with. Second of all, home felt so comfortable that sometimes I kept losing concentration on my schooling tasks. Then, having been limited to sit in front of the laptop out was a challenge itself since it caused boredom. In addition, a negative aspect of my online learning was the lack of interaction with other students.”

Typically, this student did not like this kind of online learning, as it did not help her explore her own learning styles.

Nr.	Question	Responders
4	Are you able to conduct any inquiry-based learning?	S1, S2, S6, S9, S10-S18 claim that more sources were available that helped them with IBL; S3 mentioned: a perfect opportunity for me to engage in discussions with professors and students, to conduct research and to come up with conclusions. S4 mentioned different projects regarding the topics in English.
5	What are the advantages /disadvantages of online learning?	To 13 students, advantages were: safety from covid-19, no need to get ready and leave the house, less expenses; S3, S9 mentioned more sources, more time efficient, easier to submit homework and get grading. 16 students pointed out technical problems, less concentration, no motivation, no interactions as disadvantages
6	Describe inquiry-based learning in your own words?	S1: Conducting superficial research on specific topics prior to having the lecture, and presenting questions during the lecture. S7: Make students to go beyond superficial curiosity.

Table 5. Issues related to IBL

Regarding IBL issues during online learning, the responses are somehow scattered. In the interview sessions, these future teachers present the bright side of online learning via IBL. For example: S1:” In this regard online learning is easier, as more sources are available to us (through the internet), given online studies and we are not limited to school-books.”, or S8 (similarly to S3):” It is a perfect opportunity for me to engage in discussions with professors and students, and to conduct researches regarding the topic we are discussing about.” A clear example of conducting IBL during online learning is shown by S6: “Nowadays, we are able to meet other people/friends online, so all the learning is based on discussion, videos, pictures, links, and previous researches. I think that this benefits my knowledge towards English language practice because if there would be no online schooling, I wouldn’t get the chance to see all of those “materials”.” In this case, the responses certify that the students are able to conduct IBL online. Adding S4 response: “Yes, I prepare different projects regarding the topic we are about to discuss.”

One example of advantages and disadvantages is expressed by S9: “As for advantages, I find online lectures to be more efficient when it comes to engaging in discussions and being active learner. This way has happened because students felt freer to express their opinions when not in the presence of other students. Due to this engagement, lectures are sometimes even more productive than those held in-person. As for disadvantages, it may be said that technical errors are evident pretty often. Another disadvantage is constant insecurity feeling about the finals.” Regarding IBL knowledge, these future teachers gave simple but meaningful definitions, however, they all agree that IBL includes exploration while learning, especially in projects.

Concerning IBL and critical thinking, the students agree that critical thinking is triggered via IBL, as expressed by S5: “In spite of the fact that critical thinking process requires involvement in activities beyond online learning, it may be said that inquiry-based learning opportunities in online learning have had an impact in improving my critical thinking. This opinion is based on the fact that through online learning, I’ve had the opportunities to explore new methods of interpretation, analysis, evaluation, inference, explanation, and self-regulation skills which had a crucial effect on my abilities to see things differently.” Or as explained by S3: “It is easier to ask questions, when there is some knowledge on the

topic beforehand.” On the other hand, S9 expresses that critical thinking is more triggered by listening: S9 “No, I think that my critical thinking is at its best when I listen to different opinions and experiences in class not from Inquiry based learning.” These responses are in line with Gholam (2019), who examines and discusses the students’ collaborative learning journey, if they are offered chances to explore their interests, opinions, feelings, beliefs, and curiosities (Gholam, 2019: page 112) that reveal classroom culture, in our case IBL in online learning.

Nr.	Question	Responders
7	Do you feel that inquiry-based learning opportunities in online learning has improved your critical thinking skills? How so?	11 students agreed that they had the opportunities to explore new methods in online learning; 3 students pointed that they could get to hear questions from other students, that wouldn’t have thought of. 14 students mention interest in IBL in-person (after pandemic restrictions)
8	What do you think is most beneficial about inquiry-based learning opportunities in online learning?	S2, S9, S14-S18: It pushed us to search and find new information; S3, S5, S8-S13 pointed out that sources were accessible all the time
9	What do you like most/least about inquiry-based learning opportunities in online learning?	S2, S5, S7, S13: Students who are not comfortable speaking during in-person classes were engaged in discussions regarding projects; S6, S3, S10-S18. It pushed us to search and find new information
10	Is it better to be taught the background information before the inquiry-based learning opportunity or did you prefer that the teacher gives you the connections after the activity?	S2- S9, S11-S16 pointed out that it was better to be taught the background information before the activity, as it pressures you to have conduct research prior to the lecture, whereas if it is left after the lecture, the probability of prolonging the research is higher

Table 6. IBL impact on student learning

Following S12, who mentioned beneficials of online IBL: “IBL makes students think out of the box. This has also applied to me. More specifically, during online lectures and other activities, I have the opportunity to be involved into discussions. I do not believe I would take the courage to do in in-person lectures. This has always resulted in more fruitful and productive interactions.” In addition, the S9 response to this question supports the relation between critical thinking and IBL, S9:” It pushes us to search and find new information” which makes the students more critical about their learning. However, one limitation added by these students is a hesitation to participate in discussions, as pointed out by S14: “What I like least about inquiry-based learning opportunities in online learning is the undisputed fact of the student’s reluctance to participate. Additionally, the lack of portfolio is also an issue. Lastly, yet importantly, teachers’ mindset needs to be changed. Still, the best learning is in classes”, or S1: “Students who were not active, had excuses of technical problems, therefore there was no activity from their side. They are more into traditional learning”.

On the question if it is better to be taught the background information before the inquiry-based learning opportunity or if it is preferred that the teacher gives them the connections after the activity, fourteen future teachers claimed that they were keen to possess some basic knowledge before the activity. On the other hand, four students claimed that it was better if the teacher related the topic after the activity, as posed by the student S7: “I believe the information is more effective after the inquiry-based learning opportunity. This is because first, we had the opportunity to address scenarios, to pose questions of different kinds and to have a multidimensional approach. Second, the background information makes more sense when we have an idea of the bigger picture.” Naturally, the students will see benefits of learning only when teachers understand inquiry-based learning theory, and the application of appropriate teaching strategies and activities (Guido, 2017).

The responses given in these interview sessions definitely have shed light on the importance and the impact of inquisitiveness to learning English while being taught online, although online learning is (dis)liked by these group of students.

4. Discussion

Higher education students were taught online for the first time when Covid-19 pandemic burst it, which was something new compared to the traditional methods. Rapid changes made in education during the pandemic, performing transition from classroom and Book Assisted Learning (BAL) to online learning assigned more decision-making power to students on how to learn and what to learn. It is obvious that in such cases global academic discourses needed to be contextualized locally, through digital transformation (Limani et al., 2019).

Concerning the first study question dealing with the students' satisfaction with online learning activities, these future teachers dislike online learning and prefer traditional, face-to-face learning although they find it easy to work online, but not to learn online. The use of mainly mobiles as learning tools, experiencing internet connection difficulties, difficulties in finding quiet/appropriate home/environmental learning corner, experiencing less active engagement, and feeling less competent and confident are some factors that were evident in the study, which respond to the second study question regarding issues usually experienced in online learning. Moreover, the interviewees also revealed that they had environmental issues while learning online. Dunleavy and Milton (2009: page 16) point out that: "The transformation of learning environments through intellectual engagement holds the most potential for shifting patterns of engagement and achievement". This is also evident in six interviews, as the students revealed that if they conducted an inquiry learning then they were satisfied with their achievements. Not only language enrichment, but also becoming more critical thinkers and more tolerant. As such, it is certain that this kind of learning i.e., online learning during pandemic, has triggered new ways of learning, which the students seem fearless to take actions in this kind of learning, although they had just started a new learning journey. Based on Guido's (2017) seven benefits of inquiry-based learning, the results of this study indicate that building initiative and self-direction, and the promotion of deeper understanding of content are evidenced especially in interviews, but it does not successfully work in online classrooms, which is also the response to the fourth study question if online IBL is wanted by the students nowadays.

In addition, the third question: Could they conduct inquiry-based activities? If yes, What inquiry? And how? The study reveals one of 5Es (Bybee, 2009) phases: E-Exploration phase and its activities are being conducted in online learning, as IBL. In fact, IBL is superficially conducted although online learning manuals are offered, and the teachers are able "to provide students with experience and convenience to access teaching materials, answer questions, and doing other academic activities" (Alsoud & Harasis, 2021: page 1411). These future teachers are able to conduct online inquiries related to English as Foreign Language and they are satisfied with these achievements of this kind, as it is easier for them to get the chance to see all of that online "materials". In addition, they have opportunities to conduct IBL which empowers student voice and choice (Gholam, 2019), as shown with the students' responses, specifically in question Q9 and Q10.

Most significantly, the findings of this research reveal that inquiry-based learning among future teachers who were fully involved mainly in exploring, analysis of the question, thinking critically and then posing questions, promote active engagement, which is in line with Aditomo et al. (2013) who claim that IBL promotes their knowledge creation. Similarly to Bączek et al. (2021) findings, the future teachers' responses show that online learning is something new to them. Almost 70% had never experienced any form of online learning before the COVID-19 pandemic, which are also in line with findings in other countries (Alsoud & Harasis, 2021; Hebebcı, Bertiz & Alan, 2020; Özüdoğru, 2021).

What is more, Western Balkan countries need to make opportunities to make education more effective, as well as, inclusive and resilient (World Bank Group, 2020). Knowing the fact of the importance of online learning discipline nowadays, and identifying the students' needs and wants, and the modification, adaptation and application of the 'ad hoc' Covid-19 pandemic activities that suit the students' differences have naturally contributed to the students' abilities to develop and enhance their academic performance. Sadly, but true, student responses clearly reveal that they do not really learn much in online classes, although these future teachers conduct various explorations. Based on Guido (2017), who points out that

IBL creates a more engaged classroom, the data reveal that future teachers are slightly satisfied with online IBL and active engagement in class. In comparison, students reveal that the inquiry-based activities given, project-based learning do not make them more confident and more curious to learn in online classes, although Baldock and Murphrey (2020) consider that IBL is valuable and challenging as it triggers students' critical-thinking, problem-solving, and analytical skills.

Contrary to Gormally et al. (2009) who pointed out that inquiry instruction has been widely incorporated and lauded for enhancing student learning in recent years, the findings of this study shed light into online learning and IBL, revealing that in general, online learning was not liked and wanted by these future teachers, however, in relation to IBL, these future teachers like conducting IBL, exploration phase, precisely. Because good and feasible teaching is that teaching that always starts with questions regarding the topic. The students in this way are actively engaged to find the answers, searching for more facts, relating what they already know, with what have just learned. As defined by Guido (2017), IBL aim is to develop students' various abilities i.e. analysis, synthesis and evaluation of the information, the results do not show interest in online learning, but in IBL, which is related to project-based learning. Furthermore, project-based learning, as pointed out by sixteen future teachers ascertain that IBL helps relate the former knowledge with the new one to create new subjective realities (Aditomo et al., 2013). Through projects presented online, the students delve into new concepts, building knowledge from the previous one, which is also in line with the new teaching methodology. Although as mentioned by one student, there is a need for more teacher training practice for this kind of teaching and learning.

5. Conclusion

The unprecedented impact of the teaching actions regarding online learning is also evident among tertiary level education students. The modification and adaptation of teaching has definitely intimidated and triggered current education. This study noted that online classes have not satisfactorily impacted future teachers' English Language learning and they are eager to continue face-to-face, traditional teaching and in-class learning. This article suggests that these undergraduate students do not possess adequate knowledge and skills for e-learning for their academic and professional purposes. In addition, although online teaching has been in the headlines in the field of education nowadays (Limani, et al., 2019), the study has also evidenced teachers' lack of online teaching methodology. Findings suggest that future teachers do not see any benefit while being taught online, however, projects conducted and presented online, and inquiry-based learning opportunities once they understand the inquiry-based learning process make them think more critically about that specific topic. Then this kind of inquiry helps them seek more collaboration among students.

As such it concludes that the students/future teachers reacted negatively to online learning: lack of self-confidence, passive learning, lack of concentration, lack of online learning experience, lack of technology are elements that make this kind of learning disliked. However, more positive attitude towards inquiry-based learning was evident in this case, although even students/future teachers reported that not all students are involved in such queries. The inquiry-based learning is the students' favorite inquiry, although the students encounter difficulties in conducting the desired level of the IBL. The evidence proves that the IBL activities in English language classes conducted online, are interconnected in order to support the students' learning performance. The students possess the necessary tools i.e., technology to face the demands of the shift of learning from classroom learning to online learning. However, the expectations of this kind of teaching and learning were low, which resulted in a clear need for teachers' and students' instructional practices.

This study's innovation and originality lie in correlation of IBL and online learning issues among these future teachers nowadays, which are important to be trumpeted among scholars worldwide. Strategic point of view of this study involves scientific contribution on triggering e-learning issues among educational institutions, teachers and Information Technology systems. As such, the study suggests rapid initiatives for the enhancement of pedagogical training practices for online teaching, to improve their efficiency in teaching, and complement their gaps for preponderant teaching practices. The online teachers' 'visibility'

in order to post discussions and facilitate conversations, teachers' 'analytical approach' to ask students for feedback, or 'teachers' leadership' for online learning practices will fill the gaps of modern learning and make both parties, teachers and students, more confident in the use of modern technology for online learning followed by its teaching peripherals, as well as what classroom to create, and what online material to use.

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References

- Aditomo, A., Goodyear, P., Bliuc, A.M., & Ellis, R.A. (2013). Inquiry-based learning in higher education: Principal forms, educational objectives, and disciplinary variations. *Studies in Higher Education*, 38(9), 1239-1258. <https://doi.org/10.1080/03075079.2011.616584>
- Alsoud, A.R., & Harasis, A.A. (2021). The impact of Covid-19 pandemic on student's e-learning experience in Jordan. *Journal of Theoretical and Applied Electronic Commerce Research*. 16(5), 1404–1414. <https://doi.org/10.3390/jtaer16050079>
- Bączek, M, Zagańczyk-Bączek, M, Szpringer, M, Jaroszyński, A, & Woźakowska-Kapłon, B. (2021). Students' perception of online learning during the COVID-19 pandemic: A survey study of Polish medical students. *Medicine*, 100(7), e24821. <https://doi.org/10.1097/MD.00000000000024821>
- Baldock, K., & Murphrey, T.P. (2020). Secondary students' perceptions of inquiry-based learning in the agriculture classroom. *Journal of Agricultural Education*, 61(1), 235-246. Available at: <https://files.eric.ed.gov/fulltext/EJ1249827.pdf> <https://doi.org/10.5032/jae.2020.01235>
- Burla, L., Knierim, B., Barth, K.L., Duetz, M., & Abel, T. (2008). From the text to coding: Intercoder reliability assessment in qualitative content analysis. *Nursing Research*, 57, 113-117. <https://doi.org/10.1097/01.NNR.0000313482.33917.7d>
- Bybee, W.R. (2009). The BSCS 5E Instructional Model and 21st Century Skills. *A Commissioned Paper Prepared for a Workshop on Exploring the Intersection of Science Education and the Development of 21st Century Skills*. The National Academies Board on Science Education. Available at: https://sites.nationalacademies.org/cs/groups/dbassesite/documents/webpage/dbasse_073327.pdf
- Dunleavy, J., & Milton, P. (2009). *What did you do in school today? Exploring the concept of student engagement and its implications for teaching and learning in Canada*. Toronto: Canadian Education Association. Available at: <https://education.alberta.ca/media/3069762/cea-2009-wdydist-concept.pdf>
- Eurydice (2019). *Digital Education at School in Europe*. Available at: https://eacea.ec.europa.eu/national-policies/eurydice/content/digital-education-school-europe_en
- Friesen, S., & Scott, D. (2013). *Inquiry-based learning: A review of the research literature*. Paper prepared for the Alberta Ministry of Education. Available at: <https://galileo.org/focus-on-inquiry-lit-review.pdf>
- Gholam, A. (2019). Inquiry-based learning: Student teachers' challenges and perceptions. *Journal of Inquiry & Action in Education*, 10(2), 112-133.

- Gormally, C. Brickman, P., Hallar, B., & Armstrong, N. (2009). Effects of inquiry-based learning on students' science literacy skills and confidence. *International Journal for the Scholarship of Teaching and Learning*, 3(2), 16. <https://doi.org/10.20429/ijstl.2009.030216>
- Guido, M. (2017). Inquiry-based learning definition, benefits & strategies. Available at: <https://www.prodigygame.com/blog/inquiry-based-learning-definition-benefits-strategies/> (Accessed: October 2017).
- Hebebcı, M.T., Bertiz, Y., & Alan, S. (2020). Investigation of views of students and teachers on distance education practices during the Coronavirus (COVID-19) Pandemic. *International Journal of Technology in Education and Science (IJTES)*, 4(4), 267-282. <https://doi.org/10.46328/ijtes.v4i4.113>
- Office for Civil Rights (2021). *Education in a Pandemic: The Disparate Impacts of Covid 19 on America's Students*. US Department. Available at: <https://www2.ed.gov/about/offices/list/ocr/docs/20210608-impacts-of-covid19.pdf>
- Khan, M.A.(2021). COVID-19's impact on higher education: A rapid review of early reactive literature. *Education sciences*, 11, 421. <https://doi.org/10.3390/educsci11080421>
- Kolb, A.Y., & Kolb, D.A. (2005). Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning and Education*, 4(2), 193-212. <https://doi.org/10.5465/amle.2005.17268566>
- Konan, N. (2010). Computer literacy levels of teachers. *Procedia Social and Behavioral Sciences*, 2, 2567-2571. <https://doi.org/10.1016/j.sbspro.2010.03.374>
- Lapan, S.D., Quartaroli, M.T., & Riemer, F. J. (2012). *Qualitative research: An introduction to methods and designs*. Jossey-Bass.
- Lau, Y., Tang, Y.M., Chau, K.Y., Vyas, L., Sandoval-Hernandez, A., & Wong, S. (2021). COVID-19 Crisis: Exploring community of inquiry in online learning for sub-degree students. *Frontiers in Psychology*, 12, 679197. <https://doi.org/10.3389/fpsyg.2021.679197>
- Limani, Y., Hajrizi, E., Stapleton, L., & Ratkoceri, M. (2019). *Digital transformation readiness in higher education institutions (HEI): The Case of Kosovo*. Elsevier. <https://doi.org/10.1016/j.ifacol.2019.12.445>
- Özüdoğru, G. (2021). Problems faced in distance education during Covid-19 Pandemic. *Participatory Educational Research (PER)*, 8(4), 321-333. <https://doi.org/10.17275/per.21.92.8.4>
- Saqipi, B., Asunta, T., & Korpinen, E. (2014). Understanding the context of teacher professionalism in education systems undergoing transition – Kosovo case. *Procedia - Social and Behavioral Sciences*, 112, 635-646. <https://doi.org/10.1016/j.sbspro.2014.01.1211>
- Schreier, M. (2012). *Qualitative content analysis in practice*. Thousand Oaks, CA: Sage.
- Syahril, Nabawi, R.A., & Safitri, D. (2021). Students' perceptions of the project based on the potential of their region: A Project-based learning implementation. *Journal of Technology and Science Education*, 11(2), 295-314. <https://doi.org/10.3926/jotse.1153>
- World Bank Group (2020). The economic and social impact of Covid-19. *Western Balkans Regular Economic Report*, 17.

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