 TECHNICAL UNIVERSITY STUDENTS’ SELF-REGULATION IN ONLINE ESP LEARNING

Abstract. Facing restrictions during the Covid-19 global pandemic, university students are likely to experience difficulties in controlling their learning environments and taking right decisions. As a part of performance review, one of the most important soft skills, the ability to conduct self-evaluation will be needed for future professional growth of university graduates. Therefore, it is crucial to understand the issues related to self-regulation of technical university students learning English for Specific Purposes (ESP) online.

The aim of the study is to reveal peculiarities of technical university students’ self-regulation in online ESP learning. This study investigates aspects of technical university students’ self-regulation regarding their ESP course learning remotely. The quantitative method was employed to collect and analyse the responses of bachelor students of the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute” using a 5-point Likert scale and calculating the median (Mdn) and Inter-Quartile Range (IQR). The qualitative data aimed at further exploration of the issue was conducted through interviews, as well as oral and written feedback of students during the online lessons. We consider the second year of the Covid-19 quarantine as emergency education as there were no other options except studying online. Though universities adjusted to the changed environment and were better equipped in order to provide technical and methodological support for studying online, it was not possible to have regular face-to-face classes.
Reporting the findings of our research, most technical university students indicated agreement with all the statements on various aspects related to their self-regulation skills. The respondents generally hold strong opinions for the statements, especially about asking for help, listening actively and staying on the topic. However, one quarter of students who needed help, did not indicate that in class. In addition, some students underestimated their ability to help others. Therefore, ESP teachers should create supportive learning environment, provide additional materials for students and encourage them to help each other. Two thirds of the respondents in the research knew how to assess their performance at the lesson. Still, it is important for teachers to equip students with the necessary tools for self-assessment. Speaking was the most important skill for more than half of the respondents in our research, they also focused on Use of English in order to achieve good results at exams.

**Keywords:** technical university students, self-regulation, self-assessment, online, reflection, student autonomy

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**САМОРЕГУЛЯЦІЯ СТУДЕНТІВ ТЕХНІЧНОГО УНІВЕРСИТЕТУ ПІД ЧАС НАВЧАННЯ ПРОФЕСІЙНОЇ АНГЛІЙСЬКОЇ ОНЛАЙН**

Анотація. В умовах обмежень під час глобальної пандемії Covid-19, студенти технічних університетів відчувають труднощі з контролюванням свого навчального середовища та прийняттям зважених рішень. Здатність проводити самооцінку з точки зору перевірки ефективності є однією з найважливіших м’яких навичок, що будуть необхідними для майбутнього професійного розвитку випускників університету. Тому надзвичайно важливо зрозуміти питання, пов’язані з саморегуляцією студентів технічних...
університетів, які вивчають англійську мову професійного спрямування (ESP) дистанційно.

Мета дослідження — виявити особливості саморегуляції студентів технічного університету під час онлайн навчання англійської мови професійного спрямування. У цьому дослідженні вивчалися аспекти саморегуляції студентів технічних університетів, які опановували курс ESP онлайн. За допомогою кількісного методу було зібрано та проаналізовано відповіді студентів-бакалаврів Національного технічного університету України «Київський політехнічний інститут імені Ігоря Сікорського» за 5-бальною шкалою Лікерта та обчисленням медіани (Mdn) та міжквартильного діапазону (IQR). Якісні дані, спрямовані на подальше дослідження питання, проводилися шляхом інтерв’ю, а також усних і письмових відгуків студентів під час практичних занять онлайн. Ми вважаємо другий рік карантину через Covid-19 навчанням в екстремальних умовах, оскільки не було інших опцій, окрім навчання онлайн. Незважаючи на те, що університети пристосувалися до змінених умов і були краще оснащені для забезпечення технічної та методичної підтримки онлайн-навчання, регулярні очні заняття були неможливими.

Згідно з результатами дослідження, більшість студентів технічного університету висловили згоду з усіма твердженнями щодо різних аспектів, пов’язаних з їхніми навичками саморегуляції. Респонденти загалом висловлювали впевнену позицію щодо тверджень опитувальника, особливо щодо взаємодопомоги, активного слухання та концентрації уваги на виконанні завдання. Проте більшість студентів, які потребували допомоги, не говорили про це в класі. Крім того, деякі студенти недооцінювали свою здатність допомагати іншим. Тому викладачі англійської мови повинні створювати сприятливе навчальне середовище, надавати студентам додаткові матеріали та заохочувати їх допомагати один одному. Дві третини респондентів знали, як оцінити свою роботу на практичному занятті з англійської мови професійного спрямування, проте викладачі повинні навчати студентів користуватися необхідними інструментами для самооцінювання. Говоріння було найважливішою навичкою для понад половини респондентів дослідження. Також вони зосереджували увагу на Use of English (граматиці та лексиці) як необхідній складовій успішного складання іспитів.

Ключові слова: студенти технічного університету, саморегуляція, самооцінка, онлайн, рефлексія, автономія студента

Introduction. Studying online, a successor of learning by correspondence has already become inseparable part of education all over the world for a couple of decades. However, when the Covid-19 caused severe restrictions imposed in spring 2020, the number of students enrolled in distance education courses increased rapidly. For educational institutions in different countries online learning was the
only option possible (UNESCO, 2022). According to American National Center of Education Statistics, the number of bachelor students studying online was 186 percent higher in 2020 than in 2019 (NCEC, 2023). Education embodies survival in general, being one of the basic human rights, which were violated during the quarantine, when millions of people had to stay at home (Cahill, 2010, p.12). As far as education provides stability, creates opportunity for students to develop their academic, professional and life skills, any ways of ensuring continuity of educational process had to be employed (Winthrop & Mendenhall, 2006; Bodrova et al., 2023).

Distance education is associated with flexible learning and teaching opportunities. Using a number of technologies, which allow teachers to deliver instruction to students synchronously or asynchronously, it ensures regular communication between all the members of educational process. Technologies include but not limited to the internet, open broadcasts, closed circuit, cable, broadband lines, fiber optics, satellite, or wireless communication devices, audio conferencing (NCEC, 2023). Distance mode of instruction can promote learning efficiency due to a whole number of its features: high accessibility, flexibility and convenience of learning, provision of opportunities for language acquisition, development of autonomous learning skills, preparation for future career, advancement in the use of technologies (Lavrysh et al., 2022). There are always ways of improving online instruction and maximizing learning potential like introducing feedback loops, interactive recordings, learner navigation, office hours, to name just a few (DeMillo & Harmon, 2020; Petrenko et al., 2020).

While teachers developed materials for online courses striving for preserving the quality of education, self-regulation became an important issue for students, who studied from the comfort of their homes enjoying a higher level of independence, which is one of the features of distance education (Kustini, 2022, p.121). As far as self-regulated learning is related to academic achievement, creating right conditions for its development is one of the main goals for teachers (Zimmerman, 1990, p.7). Self-regulation cannot be imposed on students, and giving students more opportunities to take decisions is not enough. Teachers should encourage students to take more responsibility for their learning, demonstrate the advantages of being autonomous learners whilst gradually extending students involvement in learning (Harmer, 2007, p.21).

Self-regulation is the ability of students to keep control of their own learning by means of taking initiatives, using effective strategies, monitoring their understanding in order to deal with obstacles on the way of achieving their objectives (Kustini, 2022, p.121). Rather than passive recipients, active learners do not expect teachers to explain, they investigate issues or solve puzzles on their own (Harmer, 2007, p.21). Self-regulation includes learners’ awareness of environment setting, goal planning, time management, assistance seeking, task strategies and self-evaluation (Kustini, 2022, p.121). As a part of performance review, one of the most important soft skills, the ability to conduct self-evaluation will be needed for future
professional growth of university graduates. Facing restrictions during the Covid-19 global pandemic, students are likely to experience difficulties in controlling their learning environments and taking right decisions. It is crucial to understand the issues related to self-regulation of technical university students learning English for Specific Purposes (ESP) online.

The aim of the study is to reveal peculiarities of technical university students’ self-regulation in online ESP learning.

Methodology. This study investigates aspects of technical university students’ self-regulation regarding their ESP course learning remotely. The quantitative method was employed to collect and analyse the responses of 83 bachelor students of the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute” using a 5-point Likert scale and calculating the median (Mdn) and Inter-Quartile Range (IQR). The qualitative data aimed at further exploration of the issue was conducted through interviews, as well as oral and written feedback of students during the online lessons. The students participated voluntarily and provided their written consent to take part in this research.

Considering the mode of studying, online learning at Igor Sikorsky Kyiv Polytechnic Institute during the Covid-19 quarantine was characterized by fully online classes, mostly class-paced with some self-paced students. Student-Teacher ratio was about 30 to 1. Online assessment provided teachers and students with information about students’ progress, served as input to grade, and identified potential failures. Teachers were active instructors online, students were engaged in various activities like listening, reading, speaking and writing, problem-solving, role-playing, teamwork. Online communication occurred synchronously and asynchronously, feedback was provided by teachers, students or automatically (Google Forms, ClassTime, etc.)

Results and Discussion. It is important to distinguish between emergency and regular remote education. The instruction delivered online in a stressful environment without proper planning and preparation is emergency distance education (Hodges et al., 2020). In spite of the fact that lessons during first months of online learning were not planned or prepared properly, we consider not only the first, but the second year of the Covid-19 quarantine as emergency education considering the fact that there were no other options except studying online. Though universities adjusted to the changed environment and were better equipped in order to provide technical and methodological support for studying online, it was not possible to have regular face-to-face classes.

Reporting the findings of our research (Table 1), most respondents indicated agreement with all the statements (Mdn=2) except one (I was polite and respectful) with which the respondents strongly agreed (Mdn=1). The respondents generally hold strong opinions for the statements, especially for the statements about asking for help (IQR=0), listening actively and staying on the topic (IQR=0.5).
Table 1. Self-regulation survey for students studying English online

<table>
<thead>
<tr>
<th>Likert scale</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
<th>Median</th>
<th>IQR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I completed assignments on time</td>
<td>34 (41%)</td>
<td>31 (37%)</td>
<td>13 (16%)</td>
<td>2 (2%)</td>
<td>3 (4%)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2. I listened actively</td>
<td>21 (25%)</td>
<td>49 (59%)</td>
<td>11 (13%)</td>
<td>0</td>
<td>2 (3%)</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>3. I was polite and respectful</td>
<td>53 (64%)</td>
<td>28 (34%)</td>
<td>2 (2%)</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4. I followed instructions</td>
<td>30 (36%)</td>
<td>46 (56%)</td>
<td>6 (7%)</td>
<td>0</td>
<td>1 (1%)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5. I asked for help</td>
<td>14 (17%)</td>
<td>49 (59%)</td>
<td>16 (19%)</td>
<td>3 (4%)</td>
<td>1 (1%)</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>6. I helped others</td>
<td>27 (37%)</td>
<td>27 (37%)</td>
<td>9 (26%)</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>7. I stayed on the topic</td>
<td>15 (18%)</td>
<td>47 (57%)</td>
<td>17 (21%)</td>
<td>2 (2%)</td>
<td>2 (2%)</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>8. I knew how to assess my performance</td>
<td>21 (25%)</td>
<td>41 (50%)</td>
<td>21 (25%)</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>9. I am satisfied with my results</td>
<td>26 (31%)</td>
<td>40 (48%)</td>
<td>14 (17%)</td>
<td>3 (4%)</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>10. Especially important skills</td>
<td>Speaking 52 (63%)</td>
<td>Use of English 18 (22%)</td>
<td>Writing 9 (11%)</td>
<td>Listening 3 (3%)</td>
<td>Reading 1 (1%)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Time management is closely connected to self-management, when students prioritise their activities and allocate certain time to their completion. Besides planning, it is important to follow the schedule consistently (Kustini, 2022, p.124).

More than half of the respondents (78%) claimed that they were punctual and completed their home assignments before the lessons (See Picture 1). At the same time, others either hesitated (16%) or admitted that they failed to submit their homework on time (6%).

Pic. 1. Timely completion of home assignments
According to another research, almost half of the students followed the same schedule regularly, and more than half of students distributed their study time evenly during a week (Kustini, 2022, p.125). Task strategies indicate students’ awareness of approaches to performing better, trying those tactics and reflecting on the results (Kustini, 2022, p.124). However, students in our research were more pessimistic about their time management skills in their comments, sharing that competing the tasks just before the deadlines or after was typical. Lack of time and distractions like computer games and social networks were often mentioned by students.

Active listening is one of the most important issues at synchronous ESP lessons online. Distracted by messaging, surfing the Internet, noises at home, students listen to each other, but, in fact, do not hear anything and then they are lost and do not take part in discussion. Sometimes it happens when students are planning what to say, just to discover that other participants of the session talk about something else. However, according to our research, majority of respondents express their agreement with the statement that they listen actively when others speak (84%), while some are not sure about that (13%) (See Picture 2).

![Pic. 2. Active listening](image)

Active listening is challenging for those students who are not used to group work. Answering questions in a teacher-centered class does not require active listening skills, but group work is impossible without this ability. In order to negotiate with others and arrive at a common decision, members of groups should share their opinions and critically assess suggestions of others. Sometimes students, being asked to report the discussion in groups, have nothing to say because they did not listen actively.

Social-emotional well-being of students is as important as academic performance, as both are parts of well-rounded education (Pentón Herrera, L. J., & Martinez-Alba, G., 2021, p.5). If the atmosphere in a language class is tense because some students are rude, participants cannot trust each other and communicate freely. Unless a conflict is resolved, learning under such conditions is not possible. At the beginning of the ESP course some ethical rules should be established for each group.
of students, or even developed by students themselves. It is especially important for breakout rooms, when students do the tasks without teacher’s supervision. According to the results of our research practically everyone (98%) confessed that they were polite and respectful to others, which could be explained by the fact that students were aware of the academic environment requirements (See Picture 3).

Pic. 3. Ethical behavior

It is important to mention that at Igor Sikorsky Kyiv Polytechnic Institute there is a code of conduct officially approved by students, teachers and university officials. Participating in group chats and Zoom sessions, students have to identify themselves, use their real names and surnames. Using nicknames is not only inappropriate, but also confusing and may lead to situations when unidentified students may lose their points for their ESP lesson. However, it is possible for some students to feel uncomfortable working in groups just because they are sure that it is better for them to work individually, according to their written responses. At the same time the ability to work in teams is appreciated at any workplace, therefore, at university it should not be neglected anyway.

The results of our research showed that practically all the students (92%) followed the instructions without hesitation, which indicated their self-discipline, as well as good rapport between students and teachers (See Picture 4).

Pic. 4. Following instructions immediately
Studying online, students often experience technical problems, some may lose connection and miss some important information during the language class. There may be other reasons in situations when students need scaffolding. Help seeking indicates that students have problems with completion of the task satisfactory on their own (Kustini, 2022, p.125).

Asking for help is not common in a teacher-centered class because shy students avoid speaking in front of the whole class especially when revealing their weaknesses. However, when students work in groups, it is easier for them to ask their groupmates or a teacher for additional information. Online communication opens more opportunities like sending messages via private chats. More than half of respondents (76%) turned to someone else when they had difficulties with understanding during their ESP lessons (See Picture 5).

![Pic. 5. Help seeking](image)

However, some (19%) were not sure what to do and some (5%) preferred not to ask for help. Therefore, ESP teachers should create the supportive learning environment and provide additional materials for students to use if necessary. For example, besides describing the task for students during the video conference, the written instructions should be shared in the group chat. The results of another research show similar tendency, about 96 percent of students turned to somebody more knowledgeable for help, as well as to their peers (Kustini, 2022, p.126).

University teachers should encourage students to help each other showing that it is another way of learning, learning from peers. Being asked a question, a teacher should redirect it to other students. Even of an answer is not correct, such attempt should be encouraged, as it shows active participation and desire to solve a problem. According to the research, more than half of respondents (74%) provided support when it was necessary, while others (26%) were not sure if it was possible (See Picture 6).
In fact, students often underestimate their ability to help, they think about a teacher as the only possible person to ask. The results of the research on peer review in EFL writing at a Japanese university showed that students’ willingness to offer and accept critical feedback increased after peer review was included in their writing curriculum. Moreover, students were confident in their peers’ abilities to give feedback, but had doubts about their own abilities. Therefore, there is need for learner training and confidence building (Morgan, Fuisting & White, 2014, p.93).

Working in groups is crucial as students work independently and complete a task without teacher’s guidance. It is especially important for large classes, because students have more opportunities to speak to 3-4 groupmates than in a group of 30. However, there are difficulties related to lack of motivation when students either do not speak English in breakout rooms or discuss something else, ignoring the task they should complete. According to the results of the survey, 75 percent of respondents claimed that they stay on the topic of discussion, while 4 percent were distracted, and 21 percent were not sure that they spoke on the topic all the time during their ESP lessons (See Picture 7).
Self-evaluation includes self-assessment of students’ own performance using clear criteria, which is followed by revision and improving their results (Kustini, 2022, p.126). Using students as sources of feedback, embodied in self-assessment, provides accurate validation of their progress and promotes learning, as it includes reflection and revision as well. In addition, it develops critical thinking and autonomy in learning English (Jamrus & Razali, 2019, p.64). However, it is important to conduct it properly, equipping students with all the necessary tools for self-assessment. Two thirds of the respondents in our research knew how to assess their performance at the lesson, with one third who were not sure (See Picture 8).

Remarkable that there were no negative responses, which means that students were aware of the criteria for self-assessment. Indeed, university teachers introduced the criteria for self-assessment before giving a task, and sometimes students contributed to developing rubrics including the elements that count. According to the research conducted by Kustini (2022), students conducted a high degree of self-evaluation making a summary of their online materials, raised questions and communicated with groupmates discussing the materials of the online course (p.126). Presumably, traditional self-assessment is more effective without external feedback on academic performance, which means that it is completely sufficient (Karaman, 2021). Remarkably, ESP teachers used alternative assessment during the Covid-19 pandemic, but, according to the results of the research (Chugai & Pawar, 2022), necessity of training in assessment and learning facilitation was obvious at the beginning of the quarantine; they also appreciated technical university students’ involvement in making choices, and acknowledged the usefulness of a variety of alternative assessment tools (p.9).

Environment structuring indicated the ability of students to choose and organize the physical environment in order to avoid distractions and achieve better results (Kustini, 2022, p.124). Our research showed that more than two thirds of respondents (79%) were satisfied with their academic results concerning their ESP course, 17 percent were not sure and 4 percent were dissatisfied with their results (See Picture 9).
Considering studying online, students in our research provided negative as well as positive feedback, for some it was uncomfortable to speak or switch their cameras on because of other family members or roommates, for others it was an additional opportunity to learn more about their groupmates and share information about their hobbies during their ESP lessons. Similar results of the interviews related to the home environment showed that students’ answers varied depending on the internet connection, power outages and other technical problems at home, as well as noises from family members and the surroundings (Kustini, 2022, p.127). Anyway, students were as motivated and confident online as studying face-to-face; for shy students studying online was even more satisfactory as they could ask questions via zoom or personal messages (Kustini, 2022, p.127).

Goal-setting is related to determining short-term and long-term learning goals, as well as developing strategies to achieve them and reflecting on this experience (Kustini, 2022, p.123). Regarding the ESP course, speaking is the most important skill for more than half of the respondents in our research (Picture 10).
Technical university students also focused on Use of English, which includes grammar and vocabulary tasks, in terms of test or exam preparation. It is especially important for the 4th year bachelor students who take a graduate English exam and then a single entrance exam in a foreign language (EMI) for the master’s program admission. Students also commented on their choices, explaining that speaking is the skill difficult to develop in isolation, that is why online lessons provide an opportunity to focus on communicating with their peers. Speaking English is needed at job interviews, workplaces, for doing master’s degree abroad. However, there were some students who aimed at getting the minimum number of points just to pass a course of English because they needed more time for other subjects, which were more important for them.

The findings obtained by Kustini (2022) based on the quantitative data, revealed a high level of setting goals, high awareness in structuring their environment, of help seeking and self-evaluation, high ability in time management, and good level of setting goals (p. 120). The qualitative data from the interviews indicated no difference between the level of motivation before and during the pandemic, while their confidence in learning increased. With changes in their environment, students’ learning strategies also underwent alterations (Kustini, 2022, p. 120). The results of our research at Igor Sikorsky Kyiv Polytechnic Institute showed similar tendency, students were mostly positive and motivated to study English online. However, there were few comments about missing real communication offline. There were also suggestions about inviting native speakers to the lessons, playing games, completing creative tasks, watching videos in ESL class and discussing them.

Conclusions. Learning ESP online because of the Covid-19 restrictions, technical university students enjoyed a higher level of independence. However, self-regulation, which includes students’ awareness of environment setting, goal planning, time management, seeking for help, task strategies and self-evaluation, has become an issue. Reporting the findings of our research, most respondents indicated agreement with all the statements on various aspects related to their self-regulation skills. The respondents generally hold strong opinions for the statements, especially about asking for help, listening actively and staying on the topic. However, one quarter of students who needed help, did not indicate that in class. In addition, some students underestimated their ability to help others. Therefore, ESP teachers should create supportive learning environment, provide additional materials for students and encourage them to help each other. Two thirds of the respondents in the research knew how to assess their performance at the lesson. Still, it is important for teachers to equip students with the necessary tools for self-assessment. Speaking was the most important skill for more than half of the respondents in our research, they also focused on Use of English (grammar, vocabulary) in order to achieve good results at exams.

References:


Література:


