

Editor

Asst. Prof. Ahmet Dönger, Ph.D.

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PREFACE

In the global sense, all countries are dealing with the problem of the pandemic, which we can accept as the plague of our age. The pandemic causes undesirable changes in the states and all the formations that make up the state structure, in sociological, psychological, economic and many other areas. Especially in education, radical changes have been inevitable. In the past years; Along with the debates such as the use of developing technology among the educational arguments or the use of classical education methods, there were questions such as the new generation's view of the world, their view of education, and whether a standard education should be for all individuals or for their personal differences.

It has been seen during the pandemic process that face-to-face education cannot be done, and it has become inevitable to educate individuals and societies by using technological education tools that used to frighten us. Education policies that shape the future of countries must be very different, open to developing technology, suitable for applying alternative methods, innovative, questioning and developable.

As educators, we should develop ourselves in this direction, developments should be open, in the development of public awareness, although we cannot apply the methods that we can apply in face-to-face education, we should be able to reach individuals by developing online education methods and infrastructure. We should be able to present these methods as a guide to young researchers.

We would like to thank all my colleagues and authors who contributed to the publication of this publication and wish them success in their work.

Assist. Prof. Ahmet DÖNGER, Ph. D.
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CHAPTER I

DISTANCE FOREIGN LANGUAGE EDUCATION AND THE IMPORTANCE OF AUTONOMOUS LEARNING

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1. Introduction

The Covid-19 pandemic that emerged in early 2020 made face-to-face education impossible and forced educational institutions to switch to distance education. In this way, distance education, which was previously carried out in order to reach large masses and to ensure equality of opportunity in education, has necessarily replaced traditional education. In fact, distance education is sometimes used to support face-to-face education and sometimes to reach the masses that do not have the opportunity to take part in face-to-face education. In this respect, it fulfils various functions. These include providing education opportunities to regions with insufficient educational infrastructure, such as not having sufficient schools, classrooms or equipment. Furthermore, distance education gives the opportunity to access well-qualified teachers and provides education opportunities for everyone. Moreover, with the rapid population growth, the increase in the number of students is representing an obstacle for a quality education. Distance education eliminates the difficulties of handling with the large number of students and school attendance. In this way, with distance education, equality of opportunity in education is provided and education reaches widespread masses (İşman, 2011).

But what exactly is meant by distance education? In fact, the answer to this question is expected to be "It is a kind of education where the student receives education in the place where he/she is located, away from the teacher and the classroom". However, when we look at the literature, it is understood that this definition is not so simple. The literature gives distance education as "*non-traditional education*", "*non-traditional learning*", "*independent work*", "*out-of-school education*" and "*learning out of school*", but none of these terms fully cover distance education. In fact, distance education is accepted as a form of education in which the learner and the teacher are physically far from each other (Adiyaman, 2002, p.92). In other definitions, distance education is defined as "*delivering education to distant students with the help of tools such as satellite, video, sound, graphics, computer, multimedia technology*" (USDLA 2004, cited in Al and Madran 2004, p.262) and as

“designed to provide student interaction and learning certification; a planned learning/teaching experience that uses a wide range of technologies to reach a remote audience” (Adıyaman, 2004, p.92). When these definitions are examined, it is evident that there are two aspects in distance education. Firstly, the instructor and the students are physically distant from each other and secondly, the education is carried out through a media. Therefore, it is understood that distance education is the delivery of education to a distant audience in a planned and designed way using certain tools.

But it has to be noted that the only point that distinguishes distance education from traditional education is not only the distance between the teacher and the student. There are some features that distinguish distance education from traditional education. These features are listed as follows (Yenal, 2009, p.24-25):

- Teachers and students are in different environments
- The existence of a relationship between the student and the institution
- The use of tools or media, such as printed materials, that provides communication between the student and the institution.
- Providing face-to-face training opportunities at certain times
- Preparations for the realization of two-way communication between the student and the institution
- It is a combination of studying and working life.

Among these aforementioned features are the existence of teachers and students in different environments, the combination of studying and working life, and the possibility of receiving education independent of time and place specific for distance education. Therefore, it can be said that these features distinguish distance education from traditional education.

2. The history of distance education

Today, when distance education is mentioned, the first thing that comes to mind is the lessons given by schools and universities on distance education systems. However, when looked at it historically, it can be seen that distance education covers various teaching practices that date back to the 1700s and where the teacher and the student are not present in a face-to-face education environment. The literature shows the first example of distance education as the Boston Newspaper giving shorthand lessons through distance education in 1728. In 1840, Isaac Pitman started the practice of distance education by letter in England. Pitman taught his students the Bible through letters. In this way, the

teaching contents were sent to the students by letter, and they were expected to learn the relevant subjects (Kırık, 2014).

Germany is shown among the leading countries in distance education, and it is stated that the first institutional initiative in distance education took place in this country (Özbay, 2015). The establishment of a language school that publishes teaching materials and provides distance education in Germany in 1856 by Charles Toussaint and Gustav Langenscheidt is considered to be the first organized initiative in distance education. In 1884, “Rustinches Distance Education School” was opened, which prepared students for the university exam (Abazaoğlu & Umurhan, 2015; Özbay, 2015). The first example of giving distance education at the university level took place in the USA. The teaching of distance education courses by Illinois Wesleyan University, which gave undergraduate and graduate degrees in 1874, is shown as the first institutional study in distance education in the USA (Özbay, 2015). In addition, the United States of America, which took the letter teaching practice in England as an example, established the University of Letter Education in 1883 (Kırık, 2014).

In Turkey, the first distance education application was realized in the 1960s. In this context, in 1962, children and adults who could not continue their education were provided with education through letter teaching. In 1968, educational programs started to be broadcast by TRT. In 1981, the first Open Education Faculty was established within Anadolu University and distance education started at the university level (Özbay, 2015). Today, distance education is widely given at various education levels in Turkey and in the world.

When we look at the historical development of distance education, the technologies that have developed over time have also changed the form of distance education, and distance education, which was carried out with printed resources at first, was carried out later using technological tools. In this context, distance education was given to students by using various devices such as radio, television, telephone, voice recorders and computers. Today, distance education is mostly carried out on an internet-based basis.

Dealing with the history of distance education systematically, Taylor divides distance education into five periods. In the first period, there is teaching by letter in distance education. A non-interactive (asynchronous) education is taken in this period and the student's time, place and learning pace are quite flexible. In the second period, in which multimedia is used, students are provided with material support with printed materials, audiocassette, and computer diskette. In this period, there is a non-interactive education. The third period is called the tele-learning period in

distance education. In this period, educational TV programmes, radio and video broadcasts are given, and the student depends on these broadcasts in terms of time, place and learning tempo. In this period, especially distance education takes place interactively via live phone connection and videoconference. In the fourth period, flexible learning is implemented. In this period, the learning material is made available online via the Internet and simultaneous learning takes place. In the fifth period, there is advanced flexible learning. This period is the advanced version of the fourth period and more individual support is offered to students (Yenal, 2009, pp.48-49). Bozkurt (2016), on the other hand, divides distance education into three periods chronologically, and states that the first period is conducted by correspondence, the second period is conducted with audiovisual tools and the third period is performed information-based.

When we look at the historical development of distance education, it can be seen that it has a development line mostly dependent on the developments in educational technologies.

3. Advantages and disadvantages of distance education

Compared to formal education, distance education has several advantages (Yenal, 2009; Demir, 2014; Kırık, 2014). These can be summarized as follows:

- Providing education opportunities to large masses
- Lower cost compared to formal education
- It can be arranged for students at all age levels.
- Allowing students to work in another job
- Offering the freedom to receive education independent of time and place
- Material and resource richness
- Ease of application
- Providing standardized training opportunities
- Saving time and space
- Provide convenience with central planning and implementation
- Giving students responsibility in their own learning process
- Supporting individual learning

Despite these advantages, distance education has also some disadvantages. These can be listed as follows (Yenal, 2009):

- Not allowing enough opportunity for skill development,
- Education may not take place as desired due to a probable lack of knowledge that teachers and students need in the use of internet-based educational tools,

- Requires additional software,
- High initial implementation costs,
- Failure to provide group cohesion among students,
- Creating limitations for individuals who do not have the habit of self-study and have not developed this ability,
- Insufficient use of applied courses
- Lack of communication and interaction
- Lack of individual assistance
- Preventing individuals from socializing
- Having limitations in terms of face-to-face communication and interaction
- Limitations in communication due to the large number of students.
- Although it is effective in cognitive gains, it is limited in the development of psychomotor and affective behaviours.
- Teachers' inability to control their students as in classical teaching
- More responsibility falls on the student than in formal education.

Considering the aforementioned disadvantages, it is understood that distance education brings some difficulties, especially for students. It is clear that students are given more responsibility for learning than compared to formal education, and it requires a disciplined study habit. Lack of communication and not benefiting from applied courses are among further pedagogical disadvantages. However, despite these disadvantages, distance education is sometimes used to support formal education and sometimes instead of formal education. This is also the case in foreign language education.

4. Foreign language education through distance education

Providing foreign language education with the distance education system is as old as the history of distance education. Language education through distance education, in which printed sources were used, especially before the 1970s, has been given with audio and video in line with the developing technologies since that date (White, 2006). As in the education of other courses, in foreign language education, teaching by letter, teaching by printed sources, teaching by radio, television and the internet has been realized. In this way, language education at various levels is given to large masses.

Nevertheless, there are various pros and cons of foreign language education through distance education. Yaman (2015) compares foreign language education through face-to-face and distance education and presents the pros and cons of both education methods (Table 1):

Table 1: Pros and Cons of Face-to-Face Foreign Language Education and Distance Foreign Language Education

Face-to-Face Foreign Language Education		Distance Foreign Language Education	
+	-	+	-
It gives the opportunity to learn by seeing, hearing and feeling closely.	Inadequate use of technological tools and equipment in the classroom	Making strong use of technology's motivational effect	Often completely dependent on technology, especially the Internet
Contribution of printed materials such as books and dictionaries to permanent learning	Instructors who have not developed enough technological competences tend to conduct the lessons based on the book.	Great contribution to learner autonomy	Students who are not aware enough perceive their autonomy as time to be wasted.
Having the flexibility to measure different language skills in assessment and evaluation	Developing fear of exams aimed at measuring skills, such as speaking, with the influence of the student's prejudices	In online exams, it gives students the freedom to start the exam whenever they want.	Recognition of a limited scope for measuring different language skills in assessment and evaluation
The student can ask the teacher or his/her friend about the subjects that he/she does not understand during the lesson.	The student may feel that asking too many questions about incomprehensible issues will humiliate her/him.	The ability of the student to rewind as much as they need in order to better understand the lesson registered in the system.	Students who get used to the freedom to listen to the same lesson over and over may experience disappointment in face-to-face lessons.
The student sees the teacher in front of him/ her as a competent person during the lesson.	Students are overly attached to the teacher throughout the entire language learning process.	Allows access to many resources and materials at the same time	Distractions such as social media may cause students to have trouble focusing during the lesson.
To prepare the ground suitable for cooperation and support among students during the language learning process.	A students' bias towards a language course may affect other students.	Applicability of different variations such as synchronous and asynchronous lessons	Well-planned and not programmed applications may not cover all the language skills desired to be developed.

Face-to-Face Foreign Language Education		Distance Foreign Language Education	
+	-	+	-
Allowing a certain amount of focus on the four basic skills reading, writing, listening and speaking	In some cases, the teacher may focus more on grammar, due to the low level of the class, instead on skills.	Creating an important awareness and incentive to benefit from the blessings of technology	It can create inequalities in students' access to the Internet
Providing students with a programmed education	Students' reluctance may also affect the teacher	Easily accessible to large audiences	As the population increases, the opportunity for one-to-one interaction and communication decreases.
Lots of choice of books and materials	Teachers may confine themselves with printed material and not technological opportunities	Eliminating the notion of time and space	Students who are accustomed to the school and classroom system may not attach importance and value to this application.
Teachers can get direct answers and feedback from students and vice versa.	Students may lose their interest towards the lesson and may not participate sufficiently.	Being a new and open system	Having a lot of unknowns
Teachers can develop more accurate ideas about the individual differences of students and take these differences into account during the lesson.	Teachers who have been teaching face-to-face English for years develop a certain style and may show weakness in student-oriented education.	Supported by additional activities such as live lessons, regular teacher-student meetings, allowing the instructor to get to know her/ his students better.	Inability to provide a very convenient environment in terms of space and population at the point of determining and considering individual differences

(Reference: Yaman, 2015, p.977-978)

It can be seen out of Table 1 that there are various pros and cons of foreign language education, both face-to-face and through distance education. In terms of distance education, especially having the opportunity to learn languages independently of time and place, being away from unnecessary content and interaction, being carried out on the basis of self-directed learning and having the opportunity to be fed from

various sources are among the prominent advantages. On the other hand, the disadvantages of distance education are that it cannot adequately cover language skills in poorly planned and unscheduled lessons, the student's attention is quickly distracted, students do not take distance education seriously enough compared to face-to-face education and individual differences are not taken into account sufficiently.

As a matter of fact, in a study conducted with university students receiving foreign language preparatory education, similar problems were expressed in language education with distance education, and students found the discussion environments they spent in the classroom more useful and the interaction through distance education was felt weaker than the interaction in the classroom. However, some students also stated that they discovered new ways of learning through distance education and that they were able to reveal their potential through individual learning (Bay, Karataş, & Üstün, 2021). Therefore, it is understood that there are pros and cons of language education through distance education. However, the opportunities provided by distance education in general are also prevailing in language education in particular. Therefore, distance education is among preferred educational applications in language education.

However, apart from the opportunities it offers, it also imposes certain duties on students. Learner characteristics such as self-management, self-direction, and taking responsibility for learning are among the student qualities required in language education through distance education. As a matter of fact, if the learner receives language education through distance education, he/she has to make certain decisions. Among these decisions, there are issues such as determining the appropriate one among the teaching materials, deciding how to handle with subjects that are not understood, and making connections between the lessons (White, 2004). Therefore, it can be inferred that learning a language by distance education method has difficulties as well as opportunities for students. The difficulties include the lack of classroom learning interaction, being away from structured lessons of face-to-face education, lack of direct feedback, not providing language learning resources according to students' individual needs, and the teacher's failure to manage the learning process from distance (White, 2004). In terms of students, especially loneliness and being alone, not being self-sufficient, low motivation, need for additional communication, inability to create a working discipline and lack of social sharing are among the problems faced by students (Yenal, 2009). In order for students not to be affected by these negativities, especially self-directed and autonomous learning work style is of particular importance.

5. Autonomous learning in foreign language education through distance education

The concept of autonomy was introduced by Holec for the first time and is briefly expressed as "*learner's taking responsibility for learning*" (Holec, 1981, p.3). The autonomous learner decides on the learning subjects and contents, learning place, time, speed, method and technique used, and learns in line with his own needs (Holec, 2009). In fact, autonomy emerges as a basic feature that all students should have. However, learner autonomy in distance education is of particular importance. The importance of learner autonomy in distance education stems from the fact that the teacher is not directly present in the educational environment, as like in face-to-face education. The teacher, who can directly intervene in the learning process in the classroom, cannot intervene in distance education either in a limited way or at all (White, 1995; White, 2004).

What determines the level of limitation in intervention in the learning process in distance education is the teaching tools used. For example, it is clear that the teachers' control and direction of the learning process is more limited in distance education methods that do not take place through printed sources and online. Especially in cases where the teacher has limited intervention in the learning process, the autonomy of the students becomes even more important in terms of learning success. In this situation where the teachers' intervention is limited, the student should direct the learning process with the teaching resources and materials presented to him, decide on the learning stages and review the learning. In classroom education, teachers generally control these processes, but in distance education, the student is expected to make these decisions himself and take full responsibility for learning.

But taking responsibility is also about knowing how the learning process takes place. Although the student who does not know how this process takes place may be willing to take the responsibility of learning, it is clear that it could be difficult to achieve the desired result. Therefore, the student who learns a language through distance education should have also some knowledge about language learning, methods and techniques. However, it is not enough just to possess knowledge, it is also necessary to put the knowledge into practice. As a matter of fact, the literature emphasizes that students generally cannot ensure the continuity of learning in distance education and cannot achieve learning success (Malik, 2014). It should be considered that the source of this might be a loss of motivation to reach the learning goal. So, how can the desired result be achieved while learning a language with the distance education system?

Wenden (2001, p.15) states the relation between successful learning behaviour and autonomy as *“In effect, successful or expert or intelligent learners have learned how to learn. They have acquired the learning strategies, the knowledge about learning, and the attitudes that enable them to use these skills and knowledge confidently, flexibly, appropriately and independently of a teacher. Therefore, they are autonomous”* (cited by Hurd, Beaven, & Ortega, 2001, p.344). Hence, although learning materials are presented to students in distance education, and they are expected to learn, how they manage this process is decisive in learning success. In this context, it will be useful to inform students about learning a language, how learning takes place, language learning methods and techniques, language learning strategies in general, and strategies that improve listening, speaking, reading and writing skills in particular. In addition, teaching ways and methods that enable students to evaluate whether they have achieved their learning goals or not will be beneficial for the realization of goal-oriented learning (Ypsilandis, 2002). In addition, ways and methods such as giving the learning goal clearly, structuring the units in a way that supports skill-oriented development, making the subjects and contents understandable for the learner, and providing diversity in exercises might also guide language learners through distance education. Above all, diversity in the exercises/ activities used for the development of linguistic skills such as vocabulary, grammar, speaking, reading, writing and listening might be beneficial in terms of supporting students' individual learning. As a matter of fact, in formal education, teachers include exercises/ activities according to the needs of the students and the necessity of the course, but in distance education applications, which are far from the direction of the teacher, the students use the course resources and materials as they are presented. At this point, the student should know which exercise/ activity should be used for what purpose and in which order. However, the students' lack of theoretical knowledge about language learning principles and methods might make this decision difficult. Besides that fact, since the student cannot fully evaluate his/ her current linguistic situation, it might be difficult for him/ her to use the exercise necessary for his own linguistic development on time and in the right place. At this point, the student should have knowledge about *what* is learned, which *“includes observing, reflecting, making judgements, and comparing current performance to short- and long-term goals in order to make needed adjustments. As learners engage in the process of acquiring knowledge, or skill in a language, they observe their behaviors, reflect on performance, evaluate, and refine or set new goals”* (Andrade & Bunker, 2009, p.56).

In this context, it might be helpful to present some criteria summarized for distance education in general (Wedemeyer, cited in Kırık

2014, p.78) as criteria, which could also be applied to distance foreign language education and might contribute to support autonomous learning:

- Students should be given more responsibility and equality should be ensured.
- Students should be able to work the way they want, without space and time restrictions.
- Students should be free during their study time.
- Courses should be reorganized and course and course content should be improved.
- Students and trainees should be offered education in different formats and methods.
- In order for distance education applications to be successful, instructors should allocate more time to students.
- Different opportunities should be offered to students in order to eliminate individual differences among students.
- All teaching environments and methods need to be developed effectively and integrated into education programs.
- Some criteria need to be eliminated at the point of evaluation of student success.

The abovementioned criteria might help learners to be successful in taking an active role in the learning process and becoming the person who conducts, directs and finalizes the learning process.

It can be concluded that the achievement of the desired result in language teaching through distance education is dependent not just on teachers, but also on students. Hence, distance education in foreign language education could be conducted effectively when both parts work willingly and cooperatively.

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CHAPTER II

PHYSICS TEACHERS' EXPECTATIONS FROM THE HEADMASTERS DURING THE SCHOOL IMPROVEMENT PROCESS

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1. Introduction

In the 21 century throughout which technological developments are continuing at full speed, the world has been living a quite fast changing and development. Some radical changes are seen in the structure of the societies along with the technological, economical and social developments. Therefore, both developed and developing countries must have targets to achieve so that they can follow these changes and developments, and settle by contributing and guiding. To be attuned to the period of globalization is possible only when the societies provide their citizens high quality education and training in effective (Çelikten & Yeni, 2004).

The efficient and high quality education that will meet know-how people's needs can only be provided by a planned working system at our time. To activate the continuous development, the planned working system should have been permanent at school and all of the school people are supposed to participate in the school improvement process.

When the related literature is read well, all procedures and studies done to increase the quality of education in schools indicate that the concept of school improvement is put forward. School improvement was defined in the International School Improvement Project (ISIP) as; a systematic, sustained effort aimed at change in learning conditions and other related internal conditions in one or more schools, with the ultimate aim of accomplishing educational goals more effectively (van Velzen et al., 1985; cited in Hopkins and others, 1996, p.66). The basic of school improvement is based on the staff and their improvement. Staff development: period taken over by a part or the entire of the staff, while the personnel improvement is bound to the period which is allocated for the personal and professional improvement of the individual. The anticipated aim in the personnel improvement means a better learning for the students, whereas it means a continuous renewal and responsibility for the educators and school (YÖK, ...).

School improvement process helps the decision-makers at school improve themselves and the most successful studies prove to be true with the participation of parents, students, supporting personnel, teachers and

administrators, which composes the school society. Headmaster always supports the team working in order to increase the quality of the education, who, therefore, has an important place during the school improvement process. In another words, the basic of the school improvement studies is based on the characteristics of the headmaster (Çubukçu & Girmen, 2006).

During the 1800s years, school headmasters had a few duties such as enrollment of the students, disciplinary affairs, heating the school and the continuity of the education (Sharp and Walter, 2003; Yavuz, 2006). The larger the school building is, the more responsibilities the headmasters started to have after the 1900s years, and they also took over the inspection duty along with the increasing number of the students and the teachers. In addition, they started to do the jobs of administration and investigating, public relations and staff training. They were all supposed to build up some certain values in the school in 1920s. At that time, the roles that the headmasters should have can be defined as concepts of a spiritual leader, a scientific manager, a social leader, and a gentleman (Moore, 1964; cited in Yavuz, 2006). The accountant of the headmaster in 1930s appeared to be a role of a democratic leader in 1940s. In 1950s, the headmaster was considered as the sole legal leader of the administration. In 1960s, while the headmasters were supposed to have more beuoratic roles, they were seen to have the role of establishing human relations onwardly in 1970s. In 1980s and 1990s, whereas the headmasters were supposed to have the role of administring a school, they were more clearly seen to have the role of educational leadership (Beck and Murphy, 1993; Blase and Kirby, 2000; Haynen, 1973; Sergiovanni, 2001; Yavuz, 2006).

Headmasters have a great variety of relations. They have relations not only with the institutions related to education and training directly or indirectly, but also with teachers, students, their parents and other staff working with them. The most important of them is teachers because, teachers have a position like a bridge between student-parent and headmaster.

When the literature is investigated, of the expectations that the teachers mostly want the headmasters to have is the motivation, and it has recently been seen that they prefer them to be the leader. Against the changes and improvements such as globalization, Council of the European Community period, information technology, improvement of information and technology, increasing number of the students and different types of learning do the expectations of the teachers to the roles that headmasters should have differed.

1.1. Research Question

As pointed out above, many kinds of differences and improvements occuring in the world also changed the expectations of the teachers from

the headmasters. According to the physics teachers in the study carried on in this sense, the expectations of the physics teachers working at high schools were studied for the purpose of determining what the role of the headmaster should be during the school improvement process.

In this study, in addition to the main problems defined in rough detail above, we tried to answer the secondary problems.

1. Can headmasters make the physics teachers work effectively?

2. What are the expectations that the physics teachers anticipate from headmasters for their needs and teaching environment during the school improvement process?

3. What are the expectations that the physics teachers anticipate from headmasters for the resources during the school improvement process?

4. What are the expectations that the physics teachers anticipate from headmasters for the type of administration during the school improvement process?

5. What are the expectations that the physics teachers anticipate from headmasters for in-service training during the school improvement process?

1.2. Boundaries of the Research

The boundaries of this study can be summarized as follows;

- The study was carried out with teachers working in Trabzon province in the fall term of the 2019-2020 educational years.
- Interviews made in the study were given to eight physics teachers.
- The expectations that the physics teachers anticipate from headmasters were limited as to the school improvement process.

2. Methodology

The research, based on case study known as a method which has rather qualitative investigation approaches, was carried out by using a semi-structured interviewing technique. The reason why the special case method was used is that it enables the problem studied to be investigated in detail and in a shorter time.

2.1. Research Group

The research group of the study was eight physics teachers working within the boundaries of Trabzon province and the counties. The teachers involved in this study had an experience of 5 to 19 years, and were chosen by the simple random sampling selection method.

2.2. Data Collection

With the aim of gathering data in the study, a semi-structured interviews were given to the teachers involved in the sampling. The interview can be defined as the method of data collection done orally in which the people are asked certain questions about certain subjects and what they think of. The questions are determined earlier in a semi-configured interviewing technique, but the order of the questions can be changed and it is possible to give more explanations (Çepni, 2007).

Firstly, the literature was studied with the purpose of enhancing the questions asked in the interviews during the study and the three teachers involved in the sampling were given informal interviews. Later, the questions were improved as to the data gathered from the interviews. During the informal interviews made with the teachers before the study, it was seen that the expectations that the teachers anticipate from headmasters belonged to different categories during the school improvement process. Making use of this finding, the questions asked to the teachers in the semi-configured interviews in order to obtain more detailed information about their expectations were related to such basic concepts as administration, leadership, learning, teaching, sources and in-service training.

Before starting the interviews with the purpose of gathering data, the teachers were given information about the study and asked to give answers honestly and without any hesitation by stating that their names wouldn't be publicised. For security reasons of the research, such naming codes as T1(teacher1), T2 etc.. were used for real names. Each teacher was interviewed for approximately one hour and collecting data was completed in two weeks.

2.3. Analysis of the Data

All the answers given in the interviews were recorded and written. Then, the collected data was shown to the participants and confirmed. The data, which were finalized after the approval of the participants, were first examined in detail to be analyzed based on interpretive analysis and first level coding was made. Then, themes that collect codes under certain categories were found. The data analyzed based on common views were given the "Results" section of the study, and the parts of them deemed necessary were given in the "Discussion" section.

3. Results

The teachers' views on the school improvement process were summarized below.

To begin with when asked whether they were aware of the school improvement process and related studies or not, the teachers 3, 4, 7, and 8 pointed out that they knew about the school improvement process theoretically, but didn't have sufficient knowledge about the studies made, and the T2 said that he didn't have enough information adding the following explanation:

"...We were kept informed about the matter early in the year by a expert teacher. Although we were told to participate in those studies that it would continue, we haven't still been called or sent any announcement..."

The teachers 1, 5, and 6 pointed out that they were all aware of this process, and they had been involved some related studies, the T6 made the following explanation supporting this claim:

"...In the teachers' meeting held early in the educational year, all studies and duty distribution are determined, which covers the total quality administration and establishment of school improvement team that is composed of the teachers and the head of the school and parents, and then ruled what the team will do and what its working field is by means of regulations. Later on, because this board and many other similar boards have lots to do and much correspondence and filing during the term, this kind of work doesn't often become sufficient. It is also very hard for the teachers both to continue their work and participate in activities in these boards..."

When teachers are asked whether the headmasters manage to work effectively in the school and told to give explanations to their answers, the teachers 1, 3, 5, and 6 said "yes", and others except said "no". One of the teachers (T4) didn't think that the headmaster manages to work effectively used this quotation:

"...The headmaster not only managed to make us work effectively, but he also tried to prevent us from working from time to time as well. He pays more attention to the formalities rather than educational activities. These sometimes can hinder educational activities, which also depress the teachers' unique thoughts, the different applications and resolutions that they want to do. These activities are mostly done by self-devotion of the teachers only if economical and physical conditions are improved..."

T1, one of the teachers who gave a positive answer;

"...Every day after the lessons, we are making evaluations for half an hour trying to find solutions to the problems...",

T3;

“...The headmaster entitles the teachers for equal work and make us work by checking whether they do their duties well, and in addition, we often hold meetings about this subject...”

and T6 responded;

“...The headmaster tries to do his best for the solutions by evaluating the teachers' complaints and wishes...”

The T5, who answered "yes" said;

“...The headmaster checks the punctuality of the teachers on the lesson hours and observes our skills in using the lesson materials and devices and willingness. And also, he contributes to the matter with his ideas by observing the relations and ideas exchanged between the teachers ...”

When the T6 was asked what his expectations he anticipated about the leadership and administrative qualifications of the headmaster are, he explained;

“...I myself of the opinion that a headmaster should approach to the matters as a colleague rather than being a director so as developing our school in all respects, and pay more attention to educational activities than formalities and other unnecessary correspondence avoiding time loss...”

The T4, who answered in a similar way, said;

“...Our headmaster should have a vision and an effective understanding of a leader so that the work done for the purpose of improving the school can be productive. My most important expectation I anticipated from the headmaster is that he should have sufficient professional merit, and can understand the teachers' work and thoughts, and should give his decisions in collaboration with us in an atmosphere where empathy is dominant far from being an oppressive authority...”

The T1, who referred to the discipline affair, said in a short sentence, said;

“...I think the headmaster should be more though in ensuring discipline in the school...”

While the T3, who referred to the same subject, made an additional explanation, he said;

“...He should ensure discipline and watch closely and provide finance when necessary, and do business in collaboration with public organizations...”

The T7, who answered differently, put his thoughts into words as follows;

“...We must set up a target by giving a common decision. The headmaster should establish relations with the related institutions, and we must have a word in the administration. In addition, he should overcome any kind of problems or crisis occurring without panic, thinking consciously...”

When the teachers were asked what their expectations from the headmasters as for improving the school in the field of learning and teaching were, the T3 said;

“...The headmaster should be open-minded to the new resolutions aimed at school improvement and follow up closely whether the teachers apply the changes, and he should help the teachers do so...”

The T4, referring to the same subject, also said;

“...The headmaster should be more tolerant to new systems, new resolutions, and demands proposed by the teachers and display his behaviors adequately and shouldn't have prejudicial thoughts or behaviors for the things he heard for the first time or reject them. On the contrary, he should think it over twice by making a study of it how to put it into use, in what way it can be useful for us...”

The teachers 5 and 7, who had different views, answered;

“...The headmaster should establish a warm learning atmosphere, evaluate the educational program, and give us ideas by observing us...”

and

“...He should follow all kinds of changes and resolutions in the field of education and inspire the teachers to participate in cultural, artful and sports activities organized by province national educational office...”

When the teachers were asked what their expectations of the sources they anticipate from the headmaster in the school improvement process, the T1 and T3 said;

“...Improving the inner conditions of a school also contains the sources. We are mostly in need of test papers, worksheets, models, simulations, and videos ... so that the students can comprehend the subjects better. We have them not sufficiently. Therefore, I wish the headmaster to provide us with them. And information communication devices such as projectors, computers etc. are so limited. I wish them to be supplied soon...”

“...The school library should be improved, modernized and kept open for the teachers and students when necessary. There should be more computers for the teachers to be able to get more benefits from them such as accessing to the internet and the labs should also be put into practice more...”

While the T5 said;

“...The school should provide the materials which are needed by determining what the teachers and students want to have...”

the T8, referring to the cost of the sources, gave an answer;

“...We are in the hope that the headmaster should outsource, not from the students...”

The T6 put his wishes into words as follows;

“...Every teacher wishes to have the devices or materials or necessary documents at handy for the use of his teaching. I would say that I am lucky to have them. In three classrooms in the school I am working are projectors and smart boards and it is being planned to furnish other classrooms too. We have a classroom furnished with computers. As a result of the fact that I demanded the re newness of the lab, it will be arranged soon too. The case is that the headmaster and head of the school and parents establish relations with businessmen all over the country and related institutions not being contended for what they have, which is an important factor. So, all headmasters should be like that and make efforts to supply the sources for their schools. I have expectations for the use of the sources, not the supply of them. The teachers and students should be given more freedom to use the educational devices leaving the thought of mind the device...”

Lastly, when the teachers were asked what their expectations of in-service training they anticipate from the headmaster in the school improvement process, the T1 answered that;

“...In-service training covers a large area in the efforts of the school improvement. In other words, the improvement of the teachers is provided by in-service training. For this reason, small size seminars can be held in the school. Experts can be invited and the teachers can be informed about the necessity of the in-service training...”

The teachers 6 and 7 said;

“...The headmaster should encourage the teachers to participate in in-service training more frequently, and help them with it, but things don't come out so...”

“...I think the in-service training isn't organized by the headmaster, or rather it's organized by the in-service training department at the ministry of education. However, the headmasters should be open to the new changes, and follow what's going on and provide us with the latest announcements of the in-service training and organize different seminars, conferences apart from the official ones...”.

4. Discussion

The first question which was asked in the interviews was “Are you aware of the school improvement process and related studies?”. When the answers were read well it was noted that five of the teachers didn't know much about it, but just theoretically and conceptionally and also about the duties they must share and perceived that school improvement studies could be administrated from distance. A teacher (T6) also added that the studies made for his school improvement process just remained in the written form officially and for show only and it was not put into use because of the formalities.

The second significant question was “Is the headmaster able to make you and the other teachers work effectively in the school? (if your answer is YES, How? / If not, Why?)”. When these answers were read well, it was seen that four of the teachers answered positively while the four answered negatively. From what the T4 said, we can say that there still exist headmasters who prefer formalities to the success of the students and the teachers, the learning of the students and other efforts made for the school improvement process.

The third noticeable question which was asked in the interviews was “What are your expectations about the leadership and administrative qualifications of your headmaster that you anticipate?”. All the answers indicated that they all met on the point of becoming a power in the administration. Cheung, Reinhardt, Stone and Little (2018), in their study to define teacher leadership, stated that collaboration with teachers is one of the main activities of leadership. In this way, when the teachers have words in the administration and improve their colleague relationships with the headmaster, they can be said to be able to work more effectively in the school improvement process.

The fourth standing out question, which was asked in the interviews, was “What are your expectations about your school improvement process in the field of learning - teaching that you anticipate from your headmaster?”. Starting out from what the teachers 3 and 4 said, the improving of the school from the point of view of learning and teaching solely depends on the fact that the headmaster is open to new changes. What's inspiring in the answers of the teachers 5 and 7 was that the teachers should be couraged by the headmaster. All these meet on the points of

guidance, being the initiator of applying the new changes and having leadership characteristics of the headmasters. That's to say, the expectations of the teachers about learning and teaching depends on the full display of the leadership characteristics of the headmaster. This expectation of theirs is supported by the thought "Headmasters should be a powerful educational leader" of Çubukçu and Girmen (2006). Göksoy, Torlak, and Uğuz (2019) also stated that the headmaster do not sufficiently motivate (encourage) teachers in terms of solving problems and reaching the determined vision, in other words, some headmasters do not have enough leadership qualities.

The other important question was "What are your expectations about the sources in the school improvement process that you anticipate from your headmaster?". In the answers given by the teachers 1, 3, and 5, it was seen that the number of the devices in connection with the information communication technology should be increased. The T8 pointed out that trying to raise money from sources except from the students was wrong and the fact that the teachers were entitled to raise money caused them to be in a difficult position before the parents although they weren't in charge of collecting money. The expectation of the T6 was that the teachers and the students should be allowed to use the existing sources in the school more and the thought "Don't touch! It can be broken down!" that most headmasters have must come to an end.

Lastly, when the teachers were asked "What are your expectations about the in-service training in the school improvement process that you anticipate from your headmaster?". Almost all of the teachers pointed out that they should be encouraged to participate in in-service training, be informed about them and the participation procedures should be more practical and easier. This inquiry that the teachers have may be because they (the teachers to participate in in-service training) mostly were turned down by their headmasters and the participation conditions should be made easy. In this context, Bulut (2019) concluded that headmasters did not adequately meet teachers' expectations in the field of educational leadership. The expectations of being open to new changes, and informing the teachers about the changes that the T6 anticipated from his headmaster can be related to the characteristics of the effective leadership of the headmaster. Starting out from what the T1 said "...The headmaster should inform the teachers about the necessity of the in-service training...", we sure suppose that there still exist teachers considering the in-service training as formalities and no use of it.

5. Conclusion

In this study, the significant expectations that the physics teachers anticipated from their headmasters during the school improvement process were investigated. The following results and conclusions were achieved from the findings in the interviews during the study.

- The teachers don't have sufficient information about the studies done related to the school improvement process, and no studies targeted to the school improvement in their schools are being done.
- The headmasters can make them work effectively by listening to their wishes holding meetings or talking to them individually and try to find solutions to their problems.
- The teachers would like to have words in the administration and wish the headmaster to display an effective leadership.
- The teachers think that the headmasters should be the initiators of being open to the new changes in the field of learning-teaching.
- The teachers demand that they be allowed to use the devices and other facilities effectively and increase the number and the volume of them, which still exist.
- The significant expectations of in-service training that the teachers anticipated from their headmasters during the school improvement process were to be kept informed about the service and the conditions of participation should be easier for those who want to.

In this section, we propose some general suggestions obtained from the study and made to other investigators who will study in this field.

Suggestions obtained from the results of the study:

- That the teachers can carry out productive studies related to the school improvement is only possible when they determine the vision and the mission of their school in collaboration with the headmaster and carry out related activities.
- The headmaster should believe in the school improvement process so that they can keep abreast of the current state of science, knowledge and changes, and they should make efforts to meet the teachers' expectations to be able to be successful and productive.

Suggestions to other investigators who will study in this field:

- The same study can be carried out by questionnaires and gathering data. Afterwards, a great variety of results can be obtained comparing the findings.

- The level of the expectations that the teachers anticipate from the headmasters during the school improvement process can be investigated with a different study.
- With a different study, one can identify the different or similar respects of the expectations that the teachers working in primary and secondary schools anticipate from the headmasters.

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CHAPTER III
**ARE ONLINE EFL LEARNERS ANXIOUS? A
COMPARISON OF TRADITIONAL AND ONLINE
CLASSROOMS**

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1. Introduction

Education systems have been going through several challenges since 2019 due to the sudden pandemic outbreak. On a global scale, educational institutions canceled face-to-face (F2F) education and adopted a new online system called “emergency remote education” (ERE) (Hodges et. al., 2020). The new system has been safe for public health so far, especially during the raging pandemic, and it has offered a full pedagogical package similar to F2F education. Although online practice in education has long been applied in several fields, ERE has a different nature due to its “emergency” characteristics. It is less well designed, less specific and in our case, it has caught institutions and instructors technically and pedagogically unprepared (Russell, 2020). Despite recent rapid vaccination progress, ERE still stands as a strong pedagogical alternative, and a specific deadline for the pandemic cannot be predicted yet. Since the context of education changed rapidly during the ERE, foreign language education (FLE) as one of the fields of education was affected in many ways. FLE is a communicative discipline by its nature; success in FLE requires a communicative environment that can be optimized in the F2F classroom. In an online English as a foreign language (EFL) setting, advantages were limited; interaction became less powerful, the use of non-verbal language decreased along with technical challenges. In contrast to F2F classrooms, EFL learners attended online courses at scheduled times from their homes for several hours a week during ERE. This remarkable contextual-shift naturally brought several challenges related to EFL education and anxiety. This study hypothesized that the current contextual-shift in FLE might also pose an effect on foreign language anxiety (FLA) due to numerous external and internal issues. The current research aimed to compare and describe FLA in F2F and ERE classrooms by using FLCAS (Horwitz, Horwitz and Cope, 1986) in the EFL context. The results of this study may be significant as online systems in FLE may be quite common in the near future due to the ongoing pandemic.

2. Online EFL Learner and Anxiety

Anxiety is a common psychological state observed in several aspects of daily routine. It can be defined as the “subjective feeling of uneasiness, discomfort and worry often accompanied by some physiological symptoms such as fatigue, muscular tension, restlessness and headache-causing individuals to get disoriented by arousing the autonomic nervous system” (American Psychiatric Association, 2013). Type of anxiety greatly vary and the specific type of anxiety in foreign language contexts is called FLA that can emerge during foreign language communication and in FLE contexts (Brown, 2007, p.162). In classroom setting, FLA is a quite common phenomenon that has been a topic of interest for a long time. Horwitz, Horwitz, and Cope (1986) initially described three specific types of FLA: Communication Apprehension, Test Anxiety, and Fear of Negative Evaluation. These three were not the components but the specific types of FLA which were then later assumed in Aida (1994). Communication apprehension in FLA can be described as the anxiety that emerges in the case of oral communication in the target language in any context. Test anxiety refers to anxiety that manifests itself during foreign language assessment and evaluation and is very common among language learners. And finally, fear of negative evaluation can be described as the type of anxiety that derives from the fear of being negatively criticized or judged by other people such as peers and instructors.

FLA research in the traditional language classroom setting is satisfactory and abundant. We have plenty of evidence suggesting adverse effects of FLA on foreign language performance and success Previous research showed that FLA is both the result (Sparks and Ganschow, 2000) and the cause of poor foreign language performance (MacIntyre, 1999; Horwitz, 2001). While poor EFL performance may provoke FLA, anxious EFL learners also tend to be less productive and less successful. According to the affective filter hypothesis (Krashen, 1982), FLA causes the emergence of a filter in language learner’s cognition blocking linguistic input from entering. The filter inhibits the processing and reception of the linguistic input adversely affecting foreign language success (Krashen, 1985). FLA may directly affect classroom participation causing low foreign language success and performance. Learners suffering from FLA feel nervous in the language classroom especially when required to participate and communicate (Cheng, Horwitz and Schallert, 1999). The learners exhibit poor performance along with shyness, unwillingness to communicate and reluctance in communicative activities. Although anxiety research in a traditional classroom setting proposed abundant results on the relationship between anxiety and EFL success, anxiety in the online EFL context is yet in its infancy.

Recently, ERE has been considered as the pedagogical panacea of the pandemic. It seems no longer an option, but rather an obligation (Dhawan, 2020). Several adaptive challenges triggered by the emergency shift to obligatory online education made ERE different from traditional online pedagogical practice in the pre-pandemic period. The common recent practice of online systems in FLE made it necessary to examine FLA in online contexts since FLA may also emerge in online settings (Russell, 2018; Pichette, 2009). More than a decade ago, the results of the study by Pichette (2009) indicated that experienced learners felt less anxious when compared to less experienced learners in online writing and reading classes. In a more recent study, B ark anyi and Melchor-Couto (2017) concluded that utilizing LMOOC in speaking classes decreased FLA as learners were shielded by computers. However, most of the participants also reported that they feel anxious, uncomfortable and annoyed when they were required to video-record their oral performance. The results concluded that although lack of real social experience may help to reduce anxiety, some online practices still had the potential to provoke FLA. Furthermore, the results of Russell (2018) demonstrated that participants reported communication apprehension symptoms during online courses. On the other hand, their intervention yielded positive results and reduced FLA and communication apprehension in online settings. Dolguns oz (2021) revealed that family profile might also be a factor that provoked FLA during the ERE period. His results showed that EFL learners complained about crowded families during the ERE period reporting that they had face several technical, psychological and parental challenges since their homes have been their classrooms. Recent pandemic transformation in education systems created the necessity for further investigation of FLA in online settings. Thus, this study aimed to describe FLA in online classrooms and compare it to F2F classroom anxiety. The research questions were as follows:

1. How does online FLA affect attitudes towards EFL courses when compared to F2F FLA?
2. Does online FLA affect classroom participation and communication when compared to F2F FLA?
3. Does online FLA provoke fear of failure in online classrooms? How does it emerge in comparison to the F2F classroom?

3. Method

3.1. Participants

112 EFL learners at an ELT department (82 females, 40 males) in an age range of 19 to 22 participated in the study. All learners have taken at least one term of F2F EFL courses until the 2019-2020 Spring semester

and have been taking online courses since then. All participants were given course credit for their participation.

3.2. Instruments

This study adopted FLCAS by Horwitz, Horwitz, and Cope (1986). FLA was commonly examined with this 33-item 5-point Likert Scale due to its reliability (Dewaele, 2013; Sparks and Patton, 2013). The FLCAS was originally developed in English for American culture and has been translated into several languages for participants from different cultures to avoid any misunderstanding which is an advised practice (Horwitz, 2016). In this respect, the scale was translated and adapted into the L1 of the participants in blind sessions by 3 translators. The translated versions were then compared and unified. The satisfactory translated version was piloted to 10 students to ensure validity. In the scale, we also added “face to face classroom” and “emergency remote education” phrases when needed to distinguish between 2 scale administrations.

In 2 months, the same scale was applied twice by randomizing questions (once F2F classrooms and once for ERE) to the same participants. Learners were required to use the same nickname for both applications. The administration of the scale was online due to Covid-19 restrictions. Cronbach Alpha coefficient for the first administration (face-to-face education context) was .95 and for the second administration (ERE), it was .96.

3.3. Procedure

Due to the pandemic, the instrument was administered online. The participants were sent online links related to the scales. No time limit was given but learners were not allowed to redo the scales again. Having 2 months interval between, the same scale was applied twice by randomizing questions (once F2F classrooms and once for ERE) to the same participants. Learners were required to use the same nickname for both applications. Cronbach Alpha coefficient for the first administration (face-to-face education context) was .95 and for the second administration (ERE), it was .96.

3.4. Data Analysis

Previous research on the factor analysis of FLCAS yielded various results indicating different components in different studies (Toyama and Yamazaki, 2018) probably due to different sample sizes and cultural backgrounds. Instead of adopting one of the previous component analyses, this study designed 4 components: Attitudes, communication apprehension, fear of negative evaluation, and fear of failure. To design these components, the author(s) studied with 2 other experts in the field and created 4 components depending on word choices in the translated

version. We also benefited from previous research findings summarized in Toyama and Yamazaki (2018, p.6). For the findings, percentages and frequencies were calculated for each item in both administrations to compare. For each table, frequency values were given next to percentages.

4. Findings and Discussion

4.1. Finding 1: Attitudes towards Online EFL Courses and FLA

Learner attitudes were analyzed with items “5, 6, 17 and 28”. The findings were given in Table 1 below:

Table 1. Learner Attitudes and FLA

Item	F2F Classroom (%/f)			Online Classroom (%/f)		
	Agree	No idea	Disagree	Agree	No idea	Disagree
I wouldn't bother me at all to take more foreign language classes (5)	70,6%/79	24,1%/27	13,5%/6	66,1%/74	24,1%/27	9,8%/11
During language class, I find myself thinking about things that have nothing to do with the course. (6)	14,3%/16	24,1%/27	61,6%/69	21,4%/24	23,2%/26	55,4%/62
I often feel like not going to my language class. (17)	7,2%/8	11,6%/13	81,3%/91	4,5%/5	12,5%/14	83,3%/93
When I'm on my way to language class, I feel very sure and relaxed (28).	47,3%/53	30,4%/34	22,3%/25	45,5%/51	34,8%/39	19,7%/22
I feel overwhelmed by the number of rules you have to learn to speak a foreign language. (30)	24,1%/27	12,5%/14	63,4%/71	26,8%/30	9,8%/11	63,4%/71

Both for F2F (70,6%; N=79) and online classrooms (66,1%; N=74), the majority of learners showed no signs of reluctance to attend more EFL courses. Similarly, a dominant part of the participants did not have attendance problems due to anxiety. However, before both F2F classes (47,3%; N=53) and online classes (45,5%; N=51), nearly half of the participants felt slightly anxious. felt less relaxed when compared to online classes. For the same item, around 30% of the participants had no idea. During the courses, slightly more students were distracted in online classes

(21,4%; N=24) while this ratio was 14,3% (N=16) for F2F classes. Finally, only a quarter of the participants in both contexts were anxious and worried about the rules of the English language.

Attitude towards EFL has long been an influential factor of success. In general, the attitude was defined as “a disposition to react favorably or unfavorably to a class of objects.” (Sarnoff, 1970, p. 279). In a language learning context, attitude as an affective factor plays an important role in acquiring success (Gardner et. al., 2004). Positive attitudes were found to have contributed to EFL success while negative attitudes created psychological barriers that inhibited learning gains (Dörnyei and Csizér, 2002). The results of this study showed that learner attitudes did not change in online classrooms during the ERE period. Most learners kept their positive attitudes towards EFL similar to F2F classes. The online context was found to be filled with slightly more distractors probably due to the nature of online courses. F2F classrooms are naturally more motivating and controlled while online classrooms are vulnerable to external distractors.

4.2. Finding 2: Communication Apprehension and the Online EFL Learner

For the analysis of communication apprehension (CA), items “1, 3, 8, 9, 11, 12, 14, 18, 20, 26, 27, 32” were used. The results were summarized in Table 2:

Table 2: CA in different Contexts

Item	F2F Classroom (%/f)			Online Classroom (%/f)		
	Agree	No idea	Disagree	Agree	No idea	Disagree
I never feel quite sure of myself when I am speaking in my foreign language class. (1)	51,8%/58	13,4%/15	37,8%/39	44,7%/50	21,4%/24	33,9%/38
I tremble when I know that I'm going to be called on in language class. (3)	41,1%/46	8,9%/10	50%/66	39,3%/44	12,5%/14	48,2%/54
I start to panic when I have to speak without preparation in language class. (9)	63,4%/71	13,4%/15	23,2%/26	59%/66	16,1%/18	25,1%/28
I don't understand why some people get so upset over foreign	12,5%/14	14,3%/16	73,2%/82	18,8%/21	7,1%/8	74,2%/83

language classes (11).						
In language class, I can get so nervous I forget things I know. (12)	47,4%/53	13,4%/15	39,3%/44	45,5%/51	17,9%/20	36,6%/41
I would not be nervous speaking a foreign language with native speakers (14).	48,2%/54	19,6%/22	32,1%/36	57,2%/64	14,3%/16	28,5%/32
I feel confident when I speak in foreign language class (18).	33,1%/37	30,4%/34	36,6%/41	39,3%/44	30,4%/34	30,4%/34
I can feel my heart pounding when I'm going to be called on in language class. (20)	59,9%/67	10,7%/12	29,5%/33	65,4%/62	17%/19	27,7%/31
I feel more tense and nervous in my language class than in my other classes. (26)	38,4%/43	17,9%/20	43,8%/49	42,8%/48	15,2%/17	42%/47
I get nervous and confused when I am speaking in my language class. (27)	43,7%/49	16,1%/18	40,2%/45	45,5%/51	16,1%/18	38,4%/42
I would probably feel comfortable around native speakers of the foreign language (32).	51,8%/58	23,2%/26	25%/28	58,9%/66	16,1%/18	25%/28

More than half of the learners (51,8%; N=58, item 1) felt less sure of themselves to engage in interaction in F2F classes while this rate was slightly lower in online classes (44,7%/N=50). When called to speak without preparation, learners were observed to have panicked more in F2F classes (63,4%; N=71) when compared to online context (59%; N=66, item 9). But also, a considerable number of participants reported that they were fairly excited when they were needed to talk in online classes (65,4%; N=62, item 20). About self-confidence, the learners were confused. Item 18 showed that the participants were not sure about self-confidence related to EFL communication in both contexts. 42,8% (N=48) of the online

learners suffer nervousness when required to speak in class while this value was 38,4% (43, item 26) for F2F learners. For other items, both contexts were observed to have similar rates of CA.

CA is a communicative term that may emerge during or before any oral social communication that has some characteristics to deteriorate healthy interaction (Beatty and Andriate, 1985). In the EFL context, CA has also been considered to be one of the primary constructs of FLA. As a component of FLA, CA may manifest itself during communication in a foreign language and cause several symptoms such as nervousness, unwillingness and avoidance (Jung and McCroskey, 2004). From a pedagogical perspective, CA is known for its debilitating effects. It decreases classroom performance and participation by inhibiting comprehension and production in the target language (Onwuegbuzie et al., 2000). causing slow progress. The results related to CA did not reveal major differences between F2F and online classrooms. In both contexts, CA emerged itself although the F2F context was observed to be slightly more CA provoking due to the social environment. The existence of other peers and instructors in F2F classrooms might be anxiety-provoking while sterile online settings seem more advantageous in this regard.

4.3. Finding 3: Fear of Negative Evaluation in Different Contexts

Fear of negative evaluation was examined with items “7, 23, 24, 31”. The results were given in Table 3 below:

Table 3. Fear of Negative Evaluation in F2F and Online Classrooms

Item	F2F Classroom (%/f)			Online Classroom (%/f)		
	Agree	No idea	Disagree	Agree	No idea	Disagree
I keep thinking that the other students are better at languages than I am. (7)	40,2%/45	17%/19	42,9%/48	32,2%/36	17,9%/20	50%/56
I always feel that the other students speak the foreign language better than I do. (23)	31,3%/35	15,2%/17	53,6%/60	27,7%/31	14,3%/16	58%/65
I feel very self-conscious about speaking the foreign language in front of other students. (24)	50%/56	14,3%/16	35,7%/40	48,2%/54	11,6%/13	40,2%/45
I am afraid that the other students will laugh at me when I	40,2%/45	8%/9	51%/58	35,7%/40	10,7%/12	53,6%/60

speaking a foreign language. (31)

While 40,2% (N=45) of the participants thought that their peers were better than them in the F2F context, this rate was slightly lower in the online context (32,2%; N=36, item 7). Similarly, 40,2% (N=45) of the learners feared being laughed at by their peers in F2F classrooms and this rate was 35,7% (N=40, item 31) in online classrooms. In terms of oral proficiency (item 23) and self-confidence (item 24), the values were nearly identical. Fear of negative evaluation can be described as the acute sensitivity to be criticized by others (Horwitz, Horwitz and Cope, 1986). It is quite common in EFL classrooms, especially in lower proficiency levels. F2F classroom anxiety research showed that fear of negative evaluation had the potential to cause communication reluctance (Gregersen and Horwitz, 2002) and learners may prefer to avoid classroom participation not to be criticized by their peers. The current results also revealed that a similar effect was also observed in online classrooms since the values of this component were close in both contexts. It can be inferred that online learners also suffer from potential criticisms in case of errors during online courses.

4.4. Finding 4: Fear of Failure in F2F and Online Classrooms

To investigate fear of failure, items “2, 4, 10, 13, 15, 16, 19, 21, 22, 25, 29, 33, 8” were analyzed. The results were summarized in Table 4 below.

Table 4. Fear of Failure in F2F and Online Classrooms

Item	F2F Classroom (%/f)			Online Classroom (%/f)		
	Agree	No idea	Disagree	Agree	No idea	Disagree
I don't worry about making mistakes in language class. (2).	32,2%/36	4,5%/5	63,4%/71	32,1%/36	11,6%/13	56,2%/63
It frightens me when I don't understand what the teacher is saying in the foreign language. (4)	44,7%/50	8%/9	47,3%/43	39,3%/44	9,8%/11	50,9%/57
I worry about the consequences of failing my foreign language class. (10)	75%/84	8,9%/10	16,1%/18	71,4%/80	5,4%/6	23,2%/26
It embarrasses me to volunteer answers in my language class. (13)	40,2%/45	23,2%/26	36,6%/41	37,5%/42	23,2%/26	39,3%/44

I get upset when I don't understand what the teacher is correcting. (15)	60%/65	9,8%/11	32,1%/36	51,8%/58	14,3%/16	34%/38
Even if I am well prepared for language class, I feel anxious about it. (16)	34,8%/39	12,5%/14	52,7%/59	34,8%/39	17%/19	48,2%/54
I am afraid that my language teacher is ready to correct every mistake I make. (19)	29,5%/33	16,1%/18	54,5%/61	27,7%/31	14,3%/16	58%/51
The more I study for a language test, the more confused I get. (21)	3,6%/4	10,7%/12	85,7%/96	5,4%/6	8,9%/10	85,7%/96
I don't feel pressure to prepare very well for language class (22).	73,2%/82	13,4%/15	13,4%/15	75,9%/85	12,5%/14	11,6%/13
Language class moves so quickly I worry about getting left behind. (25)	17,9%/20	13,4%/15	68,8%/77	23,3%/26	13,4%/15	63,4%/71
I get nervous when I don't understand every word the language teacher says. (29)	41,1%/46	7,1%/8	51,8%/58	35,7%/40	16,1%/18	48,2%/54
I get nervous when the language teacher asks questions which I haven't prepared in advance. (33)	70,6%/79	15,2%/17	14,3%/16	67%/75	13,4%/15	19,6%/22
I am usually at ease during tests in my language class (8).	20,6%/23	24,1%/27	55,4%/62	18,8%/21	18,8%/21	62,6%/70

Learners were observed to have felt a little more stress in online tests (62,6%; N=70) when compared to F2F tests (55,4%; N=62, item 8). Additionally, learners were more anxious about committing errors in F2F classrooms (63,4%; N=71) in comparison to online classes (56,2%; N=63, item 2). Regarding instructor feedback, learners got more stressed in F2F classrooms when they could not understand the feedback (60%; N=65)

while this rate was 51,8% (N=58, item 15). Values related to other items were found to be quite similar.

Fear of failure which may emerge during language tests and courses makes students nervous and feel worried (Horwitz, Horwitz and Cope, 1986). EFL learners commonly feel annoyed by the feeling that they would fail in classes and became unsuccessful in learning the target language. Related previous research in the F2F context indicated that fear of failure was caused by test validity (Young, 1999), task difficulty, self-efficacy and lack of preparation for a test (Aydın, Yavuz and Yesilyurt, 2006). The current findings showed that online tests were anxiety-provoking activities probably due to technical and administrative issues. Since learners could not find anyone to consult during tests, they might be feeling nervous due to possible challenges. These challenges may technical also; internet shortage, system failure, or electricity cut-off were some possible issues that may provoke FLA. On the other hand, learners were found to be more nervous about committing errors and being unable to understand feedback during F2F classrooms. It can be inferred that social environment, instructor attitudes and fear of negative evaluation in F2F may boost fear of failure. In this regard, the online setting offers slightly more advantages. Despite slight differences, the results, in general, revealed that fear of failure was also common in online settings. For several items, no major differences were observed.

5. Conclusions and Pedagogical Implications

This study aimed to describe FLA in the ERE context and compare it to FLA in a F2F classroom setting. The results showed that anxiety rates in online settings were similar to the ones in the F2F setting. Except for a few differences, FLA was observed to have emerged in the ERE context despite the comfort of computers and home settings. An exact deadline for the pandemic cannot be foreseen yet and ERE still stands as a powerful option to carry out FLE. Regarding the results, recommendations and pedagogical implications were as follows:

- Instructors should always be aware of the fact that online classrooms are not anxiety-free; several EFL learners may still suffer from FLA as they did in F2F classrooms.
- EFL instructors may ponder on providing more warm-up activities before starting courses. According to Payne (2020), these warm-up activities may alleviate anxiety and can help to reduce cognitive load.
- Online classroom lacks many social characteristics of the traditional classroom. To benefit from non-verbal language, instructors should keep their cameras open in a well-lit room

without any distractions. Lack of non-verbal language may increase FLA since learners cannot observe reactions.

- Scaffolding, group discussion and peer cooperation may be beneficial since learners have the opportunity to observe their peers, give and receive feedback. EFL instructors may think to plan courses on these dynamics. Furthermore, online group projects may be fairly helpful as they offer more communication opportunities during pandemic isolation.
- Relaxation activities before courses may be advised to suppress anxiety since these activities can help to reduce stress. A few minutes of breathing exercises accompanied by relaxation music before and even during the online courses can be recommended.
- Like traditional tests, online tests may also be anxiety-provoking. Online test duration should be balanced and reliability should be sought as was done in traditional exams.
- In the ERE period, learners may be challenged by several stressors and distractors that the instructors are unaware of. Empathy and supporting learners may provide more motivation and reduce FLA. Since online support helps learners to become less anxious and boost the link between learners and the online course (Russell and Murphy-Judy, 2020), instructors can organize learners via google classroom, WhatsApp, Facebook, and the like to create a student-support procedure.

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CHAPTER IV
NEEDS ANALYSIS OF DEPARTMENT/ PROGRAMME
COORDINATORS ON THE ERASMUS+ PROGRAMME

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1. Introduction

The consequences of economic, political, and social concerns of globalization push the leading universities to international cooperation as a way of expanding the academic experience of their students and academic staff (Stier, 2004). “Internationalization” (Knight, 2008), as well as “student mobility”, which is the main component of internationalization, were embraced by many universities (Sweeney, 2012) and consequently, the strategic priority for all universities becomes increasing their mobility for the students and academic staff.

Internationalization in higher education, often known as ‘transnational education’, includes all types of student mobility among higher education study programmes, training courses or educational services. In a broader sense, although it may appear as an international education or a long-term mobility programme, student mobility aims to promote international understanding and cooperation among countries (Caner, 2019). Hence, students who take advantage of mobility have an idea about the cultural and political views of the host countries. At the same time, they get the opportunity to explore the elements that cannot be found in their own country (Gacel, 2002). Many universities in Europe have sought to improve their quality by focusing on transnational mobility (Wihlborg & Robson, 2018) or by promoting education abroad.

Internationalization efforts in higher education gained popularity after 1987 under the name of Erasmus learning mobility programme, the infrastructure of which was initiated in the 1970s and has been labelled with various names and forms through the course of time until such initiations aggregated by the European Commission under the name of Erasmus+ programme (European Commission, 2020). In Brief, the basic principle of the Erasmus + programme is to maintain the student and staff mobility systematically and regularly in higher education institutions among European and other member countries.

Such initiations in Turkey have started in 2004 by becoming a full member of Youth in Action Programme organized by the European Union (Reads, 2016). In accord with its full membership, Turkey established a National Agency for Erasmus+ programme which is responsible for coordination and financial support for the education and youth programmes coordinated by the European Union countries, and a number of other non-participant countries (Elmalı, 2013). In line with the central policy framework of Erasmus+ programme, the National Agency of Turkey lead the higher education institution to establish their organization structures including institutional (university) coordinators, faculty coordinators and program coordinators who coordinate the Erasmus+ mobility programmes within their units. The Institutional coordinator is the head of the organisation structure of the Erasmus+ programmes in universities. The faculty coordinators in each faculty as well as program coordinators in each program coordinate every kind of Erasmus+ mobility in their units including student and staff mobilities and arrange the bilateral agreements between institutions and programmes.

When the related literature in the Turkish context were examined, it is seen that there are several studies that examined Erasmus+ programme from varying aspects. For instance, while some of the studies examined the Erasmus programme in general (Özden, 2013), several other studies, examined the opinions of the students (Caner, 2019; Tetik, 2019); evaluated the effectiveness of the programme through the lens of the instructors (Tüzün, 2015) and examined the opinions of both students and coordinators (Bağcı, Erdem & Erişen, 2018; Dinçer, Aslan, & Bayraktar, 2017). Additionally, there are some other studies that examined the participants' perceptions related to the staff mobility (Demirer, 2015), and the effect of the programme on the internationalization process (Aybar, 2016). Indeed, such studies have contributed to the growing literature on the Erasmus+ programme.

In brief, the review of the related literature in the Turkish context showed that connecting people from different countries with different cultures through the mobilities within the Erasmus + programme have contributed to the professional and personal development of both students (Caner, 2019) and academic staff as well as the administrative staff (Altay, 2016; Bağcı, Erdem & Erişen, 2018). In addition, the findings of some other studies revealed that the mobilities within the Erasmus + programme increased the cooperation opportunities (Hasdemir and Çalıköğlü, 2011) among the participating institutions. The further review of the related literature revealed that various studies have also examined the opinions of the faculty or programme coordinators regarding the operation of the programme or the problems experienced during the mobility programme and solution suggestions for those problems. However, it is observed

within the available literature that the studies neither examined the current knowledge and skills of the coordinators on the Erasmus+ programme nor conducted a needs analysis concerning the organizational needs of the Erasmus+ coordinators. Thus, examining the current knowledge and skills of the coordinators on the Erasmus+ programme and conducting a needs analysis concerning the organizational needs of the Erasmus+ coordinators might contribute to the related literature. Regarding this fact, the present study aimed to determine the needs of the Erasmus+ department/programme coordinators at a public university. It is believed that figuring out the current knowledge and needs of the Erasmus+ department/programme coordinators will contribute to run the Erasmus programme efficiently not only for the university in case but also for other Erasmus+ programmes in other institutions. In line with its primary purpose mentioned above, the present study primarily addresses the following research questions.

1. What is the current knowledge of the Erasmus department/programme coordinators in terms of their working experience periods and their state of volunteering?

2. What are the needs of the Erasmus department/programme coordinators working in various units of the university in terms of:

outgoing student learning mobility;

outgoing student traineeship mobility;

incoming student learning mobility;

incoming student traineeship mobility;

outgoing staff (academic & administrative) mobility and

incoming staff (academic & administrative) mobility?

3. Method

To illustrate the needs and current knowledge of the Erasmus department/programme coordinators working in a public university, a survey model based on the quantitative research paradigm is adopted in the present study. The survey model is based on the past or existing on its own terms, without attempting to change or influence a situation. It is a research model that allows the description of it (Karasar, 2016). This approach is particularly useful to employ when there is a need to obtain an in-depth appreciation of an issue, event or phenomenon of interest, in its natural real-life context (Crowe, Cresswell, Robertson, Huby, Avery, & Sheikh, 2011). The present study attempted to figure out statistically generalizable to or representative of the population regarding several characteristics of the case, which is the needs of department/programme coordinators working in various units of a state university. The present study collected

its data through quantitative and qualitative data collection techniques on the needs of department/programme coordinators. Mainly, the quantitative data were collected through a survey developed by the researchers. The survey is a process of collecting data at a specific time by questionnaire, scale, or interview (Fraenkel, Wallen & Hyun, 2012) to reveal a situation that exists in the past or at present (Karasar, 2016). As for qualitative data an open-ended question embodied at the end of the questionnaire was used.

3.1. Participants

The whole population of the present study consists of 117 academic staff working as Erasmus+ department/programme coordinator in faculties and other units at a public university in the 2019-2020 academic year. Although the whole population within the case were invited, only 66 faculty and programme coordinators voluntarily participated to the present study. Thus, the participants of the present study were selected through convenience sampling technique which is a non-probability sampling method that is dependent on the ease of access to participants. Demographic information about participants is given in Table 1.

Table 1 Demographic information of the Participants.

	Variables	%	f
Experience in University	0-1 year	0	0
	2-5 year	9,1	6
	6-10 year	19,7	13
	11 year and more	71,2	47
Experience as a coordinator	0-1 year	19,7	13
	2-5 year	43,9	29
	6-10 year	25,8	17
	11 year and more	10,6	7
Appointment type	Voluntarily	43,9	29
	Involuntarily	56,1	37

3.2. Data Collection Instrument

The data of the present study were mainly collected through a questionnaire developed by the researchers. The questionnaire consisted of 3 sections which includes items questioning the demographic information of the participants, 20 statements concerning their knowledge on the tasks and responsibilities within the framework of the Erasmus programme, and one open-ended question that inquires additional opinions of the participants. Through reviewing the job definition of Erasmus+ coordinators, a total of 20 statements under 6 categories were used in the second section. The statements in this section were formed as 3-point-likert type as; well-informed, informed, and uninformed. As for assessing the content validity of the statements in the questionnaire, two independent

experts' opinion were asked, and required changes were processed concerning their opinion. As for the structural validity and reliability of the final version of the questionnaire, it is piloted with five coordinators via e-mail. The data collection instrument's development process is summarized in Figure 1.

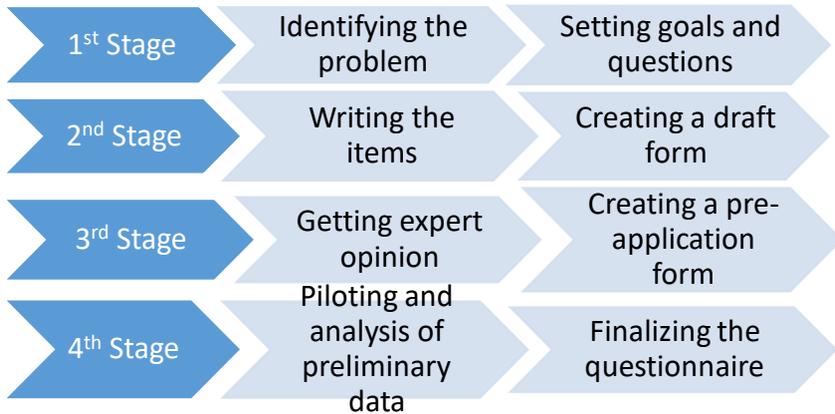


Fig. 1 Data collection instrument development process.

To enable the participants remain anonymous, an online document is created free from the names or department/faculty information and its link sent to all 117 Erasmus department/programme coordinators in the 2019/2020 academic year via e-mail with an explanation about the purpose of the study. Additionally, to increase the return rates the same e-mail was resent to all the population after three-week time interval. Sixty-six out of 117 coordinators participated in the research voluntarily, thus, the rate of return (56.4 %) is accepted as satisfactory enough to analyse and generalize the results.

3.3. Data Analysis

Descriptive and inferential statistical analysis methods were used to analyse the collected data in line with the research questions of the study. Descriptive analysis was used to determine the demographic characteristics of the participants and their needs regarding carrying out the Erasmus mobility processes. Additionally, frequency and percentage were also used to illustrate the findings. Finally, to make inferences about the messages within the texts, a content analysis was performed with the qualitative data obtained from the open-ended question asked at the end of the survey. Through the content analysis, the answers given to the open-ended question were coded and categorized under outstanding themes for quantitative description of the visible content of the messages and then the results were tabulated and presented in the findings section.

4. Findings and Discussion

The first research question of the present study aimed to reveal the level of the Erasmus department/programme coordinator's current knowledge about carrying out the Erasmus+ programme. Thus, 6 3-point Likert type as 'well informed', 'informed' and 'uninformed' concerning the tasks were asked to participants. Findings regarding the answer to each statement are presented separately in tables. Note that, (+) and (-) symbols in the tables represent coordinators appointment types. The (+) symbol illustrates the numbers of the coordinators who were appointed voluntarily whereas (-) symbol is used for the numbers of the coordinators who were appointed involuntarily. According to responsibilities of the Erasmus+ programme coordinators, they are expected to have knowledge on the bilateral agreements which are bilateral agreements established between two higher education institutions having mobility in Erasmus+ programme. The findings related to the knowledge of the coordinators on creating bilateral agreements are summarized in Table 2.

Table 2 Knowledge on bilateral agreements.

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	30	45	3	2	8	8	5	3	0	1
Informed	21	32	3	1	2	3	5	2	4	1
Uninformed	15	23	1	3	3	5	0	2	1	0
Total	66	100	13		29		17		7	

As seen in Table 2, while 45% of coordinators said that they are "well-informed" about "preparing bilateral agreements", 32% of them marked their level of knowledge as "informed" and 23% of participants marked their levels as "uninformed". This finding shows that although most of the coordinators have sufficient knowledge about making bilateral agreements, a significant portion (23%) of them still need to be informed about this issue. When the findings related to the knowledge of the coordinators on preparing bilateral agreements examined further, especially in line with the experiences of coordinators, the findings show while 16 out of 29 coordinators who work between 2-5 years are well-informed, 1 out of the coordinators who works more than 11 years have well-informed on preparing bilateral agreements. It is also found that only 1 out of 11+ year-experienced coordinators who was appointed involuntarily as coordinator declared that s/he is well informed on preparing bilateral agreements. Another concern is that the coordinators

are expected having knowledge about the official procedures for decision making for outgoing students. Thus, the second statement in the questionnaire was inquiring the needs of Erasmus+ department/programme coordinators regarding the procedures for making decision with their department/programme for the outgoing student learning mobility. The findings related to the current knowledge and their needs on the topic are presented in Table 3.

Table 3 Making the board decision

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	36	54	6	3	10	7	10	4	1	5
Informed	19	29	2	2	3	3	1	2	1	0
Uninformed	11	17	0	0	1	5	0	0	0	0
Total	66	100	13		29		17		7	

As reflected in Table 3, most of the coordinators (83%) have sufficient information on the subject of making the relevant department/programme board decision regarding the eligibility of the student's departure. However, findings revealed that some (17%) of the participants do not have any information about making board decision for the outgoing students. The findings related to the knowledge of the coordinators on making board decision examined further in terms of the experiences of coordinators. While 17 out of 29 coordinators who work between 2-5 years are well-informed, it is found that 7 of them work involuntarily. Similarly six of the coordinators who work more than 11 years declared himself/herself as well-informed on making board decision, however only one of them work voluntarily. As for their job definition, Erasmus+ department/programme coordinators should be knowledgeable on helping the outgoing students to select or add-drop of the courses in the host institution. To figure out their current knowledge and needs on this issue, the participants were asked to rate their knowledge on the third statement and the results were presented in Table 4.

Table 4 To help student select the courses and add-drop.

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	41	62	3	1	9	6	10	6	1	5
Informed	12	18	4	1	4	2	0	0	1	0

Uninformed	13	20	0	4	5	3	1	0	0	0
Total	66	100	13		29		17			7

As seen in Table 4, the majority of the coordinators (80%) have ample information on how to assist the student in choosing courses and performing add-drop operations. However, the results revealed that some of the coordinators still need to be informed on the issue. It can be also seen that nearly half of the 0-1 year old coordinators appointed involuntarily. Additionally when the well-informed coordinators are taken into consideration, 5 out of 7 coordinators are appointed to their positions involuntarily. Erasmus+ department/programme coordinators are expected to offer solutions to the academic problems of the outgoing students during their mobility. Thus, the fourth statement were posed to determine the current knowledge and needs of the coordinators. Participants' ratings for their knowledge on the issue is presented in Table 5.

Table 5 Offering solutions to the academic problems.

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	36	54	1	0	9	6	10	5	1	4
Informed	15	23	3	3	4	2	0	1	1	1
Uninformed	15	23	3	3	4	4	1	0	0	0
Total	66	100	13		29		17			7

The results in Table 5 revealed that while 36 coordinators rated themselves as “well-informed”, 15 of them marked as “informed” which reflected that they have some knowledge on the issue however, 15 of the participants rated themselves as “uninformed”. These results showed that while most of the coordinators have sufficient information on this subject, almost a quarter of them needs to be informed on the issue. When the findings related to the knowledge of the coordinators on offering solutions to the academic problems that the students have during mobility, examined further, most of the coordinators (77%) are well informed or informed about the process. The table also shows that most of the coordinators (6 out of 9 in 2-5 year-experienced and 4 out of 5 in 11+ year-experienced) who are well informed indicate their appointment types as involuntarily.

Another aspect in Erasmus+ mobility programme is the course matching processes between the host and visiting institutions before and after the student mobility. Thus, the coordinators are expected to perform course matching process without any uncertainties. In line with this expectation, the fifth statement asked coordinators to rate their current

knowledge levels and further needs on the course matching processes. Coordinators' knowledge levels on the course matching processes is presented in Table 6.

Table 6 Course matching process

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	40	61	3	1	10	4	10	6	1	5
Informed	14	21	3	2	3	5	0	0	1	0
Uninformed	12	18	1	3	4	3	1	0	0	0
Total	66	100	13		29		17		7	

As seen in Table 6, most of the coordinators (82%) have sufficient knowledge about the process to ensure that the course matching process is carried out before and after the student returns. On the other hand, it is found that 20% of the participants do not have any information on the course matching processes before and after the student returns. The findings also shows that 5 out of 7 coordinators having 11+-year-experience carried out the programme involuntarily.

After the return of the outgoing students, the program or faculty coordinators should arrange the official procedures and enable the department/programme board of directors to approve the exchange procedures. Thus, the program or faculty coordinators were expected to have sufficient knowledge on the issue. To figure out their current knowledge and further needs on getting the approval of the department/programme board of directors, the sixth statement asked their level of knowledge. The obtained results on the issue is presented in Table 7.

Table 7 Approving returning student documents

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	38	57	3	1	8	5	10	5	1	5
Informed	17	26	4	2	5	4	0	1	1	0

Uninformed	11	17	0	3	4	3	1	0	0	0
Total	66	100	13		29		17		7	

As for the current knowledge and further needs on getting the approval of the department/programme board of directors, the findings revealed that a significant part of the coordinators (55) have sufficient knowledge to ensure that the relevant department/programme board approves the exchange process of directors after returning. However, as in other tasks of the coordinators, it is found that some of the coordinators do not have any information about the issue. The findings about ensuring the exchange process after mobility shows that 5 out of 7 coordinators having experience 11+ years carried out the programme involuntarily.

Another task that Erasmus+ coordinators deal with is the organisation of official procedures for the outgoing student traineeship mobility. In line with student traineeship mobility the coordinators are expected to have knowledge on *finding institutions for traineeship mobility, making decision on the suitability of the program, offer solutions to the academic problems of the outgoing traineeship students, matching the courses before and after the traineeship mobility, and organizing the approval of the exchange process after the student returns*. Thus, the second sub research question inquired the knowledge of the coordinators on these issues and the results of them presented in separate tables in the following section.

The results of the analysis related to coordinators current knowledge and further needs on finding institutions for traineeship mobility is presented in Table 8.

Table 8 Helping the outgoing students.

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	14	21	0	0	4	1	6	1	0	2
Informed	30	46	4	1	9	4	5	2	2	3
Uninformed	22	33	3	5	4	7	0	3	0	0
Total	66	100	13		29		17		7	

As seen in Table 8 a remarkable portion (33 %) of the coordinators need to be informed about this issue to help the outgoing students to find a traineeship programme. The Erasmus+ program allows higher education institutions and their coordinators to establish agreements even with non-higher education for the traineeship mobility, however, the further analysis of the findings revealed that most of the coordinators are not aware of this

fact. Thus, in line with this finding it can be claimed that there is a need for a further in-service training on outgoing student traineeship programme for the coordinators. The findings also indicates that none of the coordinators who are working between the 0-1 year period are well informed in terms of helping the students finding institutions for their traineeship mobility. The findings also show that none of the well-informed coordinators having 11+ year experience are not appointed voluntarily. The findings related to coordinators current knowledge on the decision-making process for the suitability of the traineeship mobility program is presented in Table 9.

Table 9 Decision-making process of board of directors

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	30	46	3	0	5	3	9	4	2	4
Informed	22	33	3	3	6	5	2	2	0	1
Uninformed	14	21	1	3	6	4	0	0	0	0
Total	66	100	13		29		17		7	

As the findings on Table 9 revealed, while 46% coordinators found themselves as "well-informed", and 33% of them stated that they are "informed", 21% of them stated that they are "uninformed" about the issue. The findings related to offering solutions to the academic problems of the outgoing traineeship students are presented in Table 10.

Table 10 Offering solutions to the problems of outgoing students

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	29	44	1	0	7	5	9	3	1	3
Informed	20	30	3	3	7	2	1	2	1	1
Uninformed	17	26	3	3	3	5	1	1	0	1
Total	66	100	13		29		17		7	

Based on the findings presented in Table 10, it can be said that almost more than half of the coordinators (74%) have sufficient knowledge to offer solutions to the academic problems that the student might experience while abroad, and to answer the outgoing students' academic questions.

Findings concerning the coordinators current knowledge and further needs on matching the courses before and after the traineeship mobility is illustrated in Table 11.

Table 11 Matching process for outgoing student

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	26	40	1	0	5	3	7	4	2	4
Informed	20	30	5	2	5	3	2	2	0	1
Uninformed	20	30	1	4	7	6	2	0	0	0
Total	66	100	13		29		17		7	

As shown in Table 11, the findings revealed that the level of knowledge of most of the coordinators is at the desired level to ensure organising the traineeship matching before and after the outgoing student mobility. The findings also shows that 4 out of 6 well-informed coordinators in 11+ year-experienced coordinators are appointed involuntarily. The findings related to organizing the approval of the exchange process after the student returns is presented in Table 12.

Table 12 Ensuring the relevant board approves the exchange process after the student returns.

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	30	46	2	0	5	4	10	3	2	4
Informed	20	30	4	3	6	3	0	3	0	1
Uninformed	16	24	1	3	6	5	1	0	0	0
Total	66	100	13		29		17		7	

As seen in Table 12, more than half of (76%) the coordinators have sufficient information about the organizing the departmental approval of the exchange process after the student returns. Another aspect that Erasmus department/programme coordinators should have knowledge is the incoming students learning mobility and its official tasks. Thus, in line with the third sub-research question, the present study attempted to find out the current knowledge levels and the further needs of the Erasmus+ department/programme coordinators concerning; choosing proper courses and add-drop processes; offering solutions to the problems that the

incoming student might face; and informing the IRO about problems (absenteeism, problems related to the course, foreign language, etc.). The findings concerning each aspect is presented in a separate table. The table also shows that although the 11+ year experienced coordinators have sufficient knowledge on carrying out the projects, great majority of them (5 out of 7) have been appointed in an involuntarily way.

The findings related to the Erasmus+ department/programme coordinators knowledge levels in terms of choosing proper courses and add-drop processes of incoming students is presented in Table 13.

Table 13 To help incoming students to choose a course and to add-drop

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	38	58	5	1	9	5	9	5	1	3
Informed	12	18	2	5	3	2	2	0	0	1
Uninformed	16	24	0	0	5	5	0	1	1	1
Total	66	100	13		29		17		7	

The findings in Table 13 shows that most of the coordinators (76%) have sufficient knowledge regarding to assist the incoming students in selecting courses and performing add-drop operations. The results show that while all the 0-1 year experienced coordinators are indicates themselves as “well-informed”, 2 out of 7 coordinators who are 11+ year experienced coordinators state themselves as uninformed. Besides, 5 out of 7 coordinators among 11+year experienced ones are appointed involuntarily. The findings concerning the coordinators’ knowledge levels and their needs linked with offering solutions to the problems that incoming student might face is illustrated in Table 14.

Table 14 Offering solutions to the problems for the incoming student

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	34	52	3	1	9	5	8	4	1	4
Informed	16	24	4	1	5	2	2	1	0	1
Uninformed	16	24	0	4	3	5	1	1	1	0
Total	66	100	13		29		17		7	

The findings presented in Table 14 show that while the most (%76) of the coordinators have sufficient knowledge to offer solutions to the problems that incoming students might face in their departments some (24%) of them still needs to be informed about the issue. Here it can be noticed that more than half of 11+-year experienced coordinators (5) have been appointed involuntarily. The findings show that nearly half of the 0-1 year experienced coordinators (6 out of 13) and more than half of the 11+ year experienced coordinators (5 out of 7) have been stated themselves appointed involuntarily.

The present study additionally inquired the coordinators' knowledge levels and their needs about informing the IRO about problems (absenteeism, problems related to the course, foreign language, etc.) and the analysis of the related data is presented in Table 15.

Table 15 Conveying the problems (absenteeism, problems related to the course, foreign language, etc.)

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	27	41	4	2	8	3	6	2	2	0
Informed	24	36	3	1	5	4	4	3	0	4
Uninformed	15	23	0	3	4	5	1	1	1	0
Total	66	100	13		29		17		7	

The findings illustrated in Table 15 revealed that 23 % of the participants do not have satisfying knowledge on informing the IRO about problems (absenteeism, problems related to the course, foreign language, etc.). Based on the analysis of the data, it can be claimed that the coordinators need further in-service training on informing the IRO about the problems of incoming students on time. Additionally, the present study sought answer if the department/programme coordinators have any knowledge or need any in-service training about incoming student traineeship mobility programme through the fourth sub-research question. The department/programme coordinators current levels of knowledge and their further needs were examined under three tasks as *organising a traineeship programme for the incoming traineeship students, offering solutions to the problems that the incoming traineeship student might face, and preparing the academic evaluation certificate for the incoming traineeship students*. The findings related to each aspect/task are summarised as tables in the following section. The findings related to

organising a traineeship programme for the incoming traineeship students are summarized in Table 16.

Table 16 Making organisations for the incoming student traineeship programme

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	8	12	1	0	2	1	2	1	0	1
Informed	19	29	3	1	4	1	4	3	0	3
Uninformed	39	59	3	5	11	1	5	2	2	1
					0					
Total	66	100	13		29		17		7	

As seen in Table 16, it is found that a significant part of the coordinators (39) do not have sufficient knowledge about their task in incoming student traineeship programme which was believed one of the critical need that should to be dealt with the department/programme coordinators. It can be also noticed that more than half of the 11+ year-experienced coordinators (5 out of 7) have been appointed involuntarily. As for the current levels of knowledge of department/programme coordinators and their further needs concerning offering solutions to the problems that the incoming traineeship student might face, the findings are summarised in Table 17.

Table 17 Offering solutions to the problems for the incoming students in traineeship

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	19	29	2	0	5	2	3	2	1	4
Informed	17	26	2	2	4	1	5	2	0	1
Uninformed	30	45	3	4	8	9	3	2	1	0
Total	66	100	13		29		17		7	

The analysis of findings presented in Table 17 shows that most (45%) of department/programme coordinators do not have any awareness in offering solutions to the possible problems that an incoming traineeship student might face in the department or programme. Also, 5 out of 7 coordinators in 11+ year experienced ones have been appointed involuntarily. The findings concerning the current levels of knowledge and

the needs of the department/programme coordinators concerning preparing the academic evaluation certificate for the incoming traineeship students are presented in Table 18.

Table 18 Preparing the academic evaluation to be written on the traineeship certificate and forward it to the IRO.

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	10	15	1	1	3	1	2	0	1	1
Informed	16	24	2	1	2	1	3	3	0	4
Uninformed	40	61	4	4	12	1	6	3	1	0
Total	66	100	13		29		17		7	

The analysis of the data concerning the current levels of knowledge and the needs of the department/programme coordinators concerning preparing the academic evaluation certificate for the incoming traineeship students revealed that a significant amount (61%) of the participants do not have any information and have to be trained on this issue. Another critical task that the department/programme coordinators should perform is the organisation of the mobility of outgoing staff (Academic & Administrative). Thus, to examine the levels of knowledge and needs of department/programme coordinators concerning the mobility of outgoing staff, the present study sought answer for its fifth sub-research question and illustrated the related findings in Table 19.

Table 19 Informing the outgoing academic and administrative staff about the university they will attend

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	27	41	4	0	8	1	9	2	1	2
Informed	14	21	1	1	5	3	1	2	1	0
Uninformed	25	38	2	5	4	8	1	2	0	3
Total	66	100	13		29		17		7	

As seen in Table 19, it is found that a significant part of the coordinators (38%) do not have sufficient knowledge concerning informing the outgoing academic and administrative staff about the university they will attend and transfer their experiences. The findings also shows that 3 out of

7 coordinators in the group of 11+ year experience as coordinators indicate themselves as *uninformed* about carrying out the Erasmus+ programme. Besides, 5 out of 7 among 11+ experienced coordinators have been appointed involuntarily.

Like the tasks related to outgoing staff, the department/programme coordinators should perform the organisation of the mobility of incoming staff (Academic & Administrative) as well. Thus, to figure out their current knowledge levels and needs concerning the tasks related to the mobility of incoming staff, the present study posed its sixth sub-research question and its answer is summarised in Table 20.

Table 20 Preparing a curriculum for incoming academic staff, preparing a training programme with incoming administrative staff

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-
Well-informed	25	38	4	0	5	1	9	4	0	2
Informed	15	23	1	3	7	1	2	0	1	0
Uninformed	26	39	2	3	5	1	0	2	1	3
Total	66	100	13		29		17		7	

The data presented on Table 20 revealed that while most (61%) of department/programme coordinators somehow have satisfying knowledge on preparing training programs for incoming academic personnel, and training programs with incoming administrative personnel, a number of the coordinators (39%) still need to be informed about this issue. Additionally, when uninformed coordinators are examined it can be noticed that most of them (18 out of 26) are appointed as coordinators involuntarily.

The final question that the present study sought answer was if the department/programme coordinators have any information about the academic support that they might get from the of Erasmus+ programme in IRO in the university. The findings related to the answer to this research question is presented in Table 21.

Table 21 Academic support and communication with the IRO during the mobility

Knowledge levels	f	%	Experience as coordinator (years)							
			0-1		2-5		6-10		11+	
			+	-	+	-	+	-	+	-

Well-informed	31	47	2	1	11	1	1	4	1	1
Informed	11	17	3	2	2	2	1	0	0	1
Uninformed	24	36	2	3	4	9	0	2	1	3
Total	66	100	13		29		17		7	

As shown in Table 21, while most of the participants have satisfying level of knowledge in terms of the academic support they could get from office of Erasmus+ programme during the mobility processes, some (36%) of the department/programme coordinators do not have any information about the issue. The findings also indicate that 4 out of 7 coordinators in 11+ year experienced ones are uninformed coordinators in terms of giving academic support and having communications with the IRO during mobility.

5. Conclusion

In the present study, the level of knowledge of the department/programme coordinators of the Erasmus + programme of a state university was intended to figure out to determine their further needs. Based on the analysis of the data, there are some conclusions about the kind of information the coordinators need. For instance, it is concluded that the coordinators need further information about making the department/programme bilateral agreements that they are affiliated within the scope of "outgoing student learning mobility".

Additionally, the further analysis of the data, especially the analysis of the relations between the experience of the coordinators in their careers as coordinators, or the type of their appointment as coordinators revealed that one of the fundamental reason behind their lack of information on some issues is related to the way of their appointment as coordinators. That is, the analysis revealed that most of the coordinators are conducting the programme either involuntarily or without having any in-service trainings.

Concerning the findings of the present study, following conclusions were reached. As for "outgoing student traineeship mobility" the department/programme coordinators need to be informed about; a) how to help the student find a traineeship and b) how to offer solutions to and answer the student's academic questions related to the academic problems that the mobility students might face while they are abroad.

Additionally within the scope of the "incoming student learning mobility", it is found that the department/programme coordinators need to be informed about a) how to conduct traineeship matching before and after the mobility, b) how to report the problems (absenteeism, course problems, foreign language, etc.) of the mobility students to Office of Erasmus+ before the mobility student completes their Erasmus+ mobilities.

As for the “incoming student traineeship mobility” it is found that the department/programme coordinators need to be informed about; a) how to make a traineeship programme for the students, b) how to offer solutions to the academic problems and find answers to the academic questions that the student might face during their traineeship, and c) how to prepare the traineeship certificate as soon as the mobility student completes his/her traineeship and to forward it to the Office of Erasmus+. In terms of “staff mobility” it is found that the department/programme coordinators need to be informed about; a) how to inform the outgoing academic and administrative staff about the target university, b) how to share and report their experiences in the target institution, and c) how to prepare a program for incoming academic staff, or a training program for the incoming administrative staff. The analysis of the qualitative data, which was gathered through an open-ended question attached at the end of the questionnaire, revealed that the way the coordinators are appointed as coordinators, or whether they are voluntarily or not, affects the motivations of the coordinators for carrying out the program. The analysis of qualitative data further uncovered that the more department/programme coordinators are experienced the more they find themselves willing to run the programme.

6. Suggestions

Regarding the findings of the present study it is highly recommended that to establish a smooth cooperation with the IRO and Erasmus+ programme office, department/programme coordinators, who are relevant stakeholders, should be trained about the main frameworks of their duties and responsibilities regularly. That is, a part of sustainability of the Erasmus+ mobility programme, regular in-service trainings must be held by the Erasmus+ office for those who have limited or insufficient information regarding the programme.

Additionally, it is suggested that the appointments of the coordinators should be made by taking their own decisions in a voluntarily way if it is intended to achieve the utmost success in the internalisation processes of the universities through the Erasmus+ programmes. The last but not least, it is recommended that the department/programme coordinators should be in touch with the Erasmus+ programme office for board decisions and report any problems that both incoming and outgoing students faced during their mobility programme.

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CHAPTER V

TRENDS AND PRACTICES IN EDUCATIONAL ROBOTICS

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1. Introduction

The article discusses the various approaches to utilizing robotic applications in education. There are also examples in theoretical and application areas in the literature. Through outlining the appropriate usage of robotic applications in education, recommendations for educational robotics have been made to teachers and researchers.

2. Definition of Robot

The term 'Robot' is derived from the Latin word 'Robota,' which means slave. Two descriptions of robots are generally available. One is the robot object which resides on the physical three dimensions and the other is the general definition of the robot, commonly known as "artificial existence." This term robot was first used by Czech writer Karel Capek in the 1920s in a sciences fiction play named 'the Rosam Universal Robot.' Following a growth of nearly a century, robot for different reasons has now been described in numerous ways. The term «robot» refers to a robot which is a multi-function and programmable manipulator that was launched by the U.S. robot Association in 1979 and is defined as «a manipulator» (Zhang and Yu 2011).

A robot with a "multi-function," was defined as programmable. A robot has been defined as in this specification. 'a robot with multi-functions, multi-functions and programmability,' which has been seen. 'Chance' In China, the company robot has been described as an automated system, with its dynamic and auto-control capabilities that can offer various functions. An object robot can be a computer, in other terms that differentiates between itself and others by featuring a degree of intelligence such as people or animals. A series of 'unique resources and a special framework with variable and programmable measures for which the robot was defined as 'a programmable operation to execute various missions.'

The robot was used for a sequence that demonstrate that for each of the many 'mission' it was programmed to carry out the robot performed a new mission. The Chinese described it as 'the programmable robot that was used for transporting content, accessories, tools and a specific feature, with multiple functions and programmability.

The International Organization for Standardization (ISO) defines a robot as "a programmable system capable of movement and task performance in its setting". This concept encompasses a wide variety of robotic vehicles, from completely autonomous robots to remote-controlled robots such as telepresence robots. Robotics can be described as those that have zero human input known as full-autonomous or those that are partially autonomous but can still communicate with humans remotely with the full or partially autonomous vehicles that need the user to be operated (Han and Conti 2020).

Owing to the rapid development of this technology, there is currently no consensus concept of robotics. The term "robotics" thus covers a variety of different fields of research: social robotics which includes robots that communicate with human beings by voices, gestures or other communication methods; and helpful robotics which usually include robots that help people with physical and neurodevelopmental problems.

The Socially Assistive Robotics (SAR), a fast-growing area that arose from their interface and encompasses robots that help humans through interaction with user-based needs through multi-modal interfaces is another subfield for robotics. The advancement in robotics in the last few decades has had a profound impact on daily life. The findings from many experiments and the use of advanced robotic systems for social applications attracted particular interest from education and care. According to a number of researchers, there is already plenty of work yet to be done as it comes to robot-human contact and human implementation of new advancements, and research must be done.

System for doing a task with a 'private system.' A programmable robot, which can be used for a different task than other robots, has been identified (Zhang and Yu 2011). Robotics may be seen either as a topic or a medium for education to achieve specific learning goals (Eteokleous, Demetriou & Stylianou, 2013). This essay goes for the second form of thinking.

Popular interest in robotics has risen dramatically in recent years. Some believe that robotics can significantly improve education at all stages. Educational researchers agree that robotics practices will significantly enhance classroom instruction. However, there is a shortage of scientific research demonstrating the effect of robotics on any level school curriculum. The majority of applications used the robot as a platform or passive means for learning, irrespective of the nature or configuration of the robot. The modern approach to robotics education is excessively narrow in scope. By diversifying the available applications, we will involve a broader group of students. For more than 15 years, Robotics has been in the global education system. For example, the robotic education activities of Russian school children have risen markedly in the last decade.

However, research materials for robotic classes are primarily aimed at supporting children's additional activities.

The next stage of IT competence for the growth of technological human culture will be needed, which will be defined in the robot technology setting by conditions of human existence.

3. Robotics in Curriculum

A number of countries have now made the requisite decisions at national level. The aim has been set to form a cohesive idea for the implementation of education robotics in the high school academic process. The systemisation and the generalization of teaching robotics are one of the fields covered by the curriculum.

This is a modern direction in the philosophy and methodology of polytechnic education. Sustainable educational results in this region, as new as well as important in the technological world, should be considered in its progress. Especially the Russian education system; which is a Pioneer in this subject; primarily produces competitive robots and robotics subject activities that students participate in (Ospennikova, Ershov & Iljin (2015)

3.1. Educational Robotics and Constructivist Theory

Recent years have seen a dramatic increase in public involvement in robotics. Many people believe that robotics can bring significant new benefits to education at all stages. Robotics practices, according to educational experts, have enormous capacity to enhance classroom instruction. However, there is little scientific data to demonstrate the effect of robotics on the elementary school curriculum. Most applications have used the robot in learning activities, in which the robot was configured for a passive process. The existing approach to robotics in educational environments is overly restricted. Exploring a broader spectrum of future applications has the potential to reach young people of diverse desires (Benitti 2012) .Robotics has seen an amazing rise in public awareness in the last decade, both inside culture and the educational sector. The availability of a wide range of robotics materials has resulted in their widespread adoption across all K-12 grades. The theory of constructionism became a reality with the development of Logo, a computer programming language for children, which served as the foundation for the development of the Programmable Brick for the LEGO Mindstorms. In constructionist theories, the breaking of knowledge down into fundamental details is inadequate for learning since that kind of training doesn't give the brain just information to be absorbed, it is insufficient for turning certain facts into complex knowledge. Since understanding is an experience that is created and reconstructed by interacting with the world, Ackermann holds that it is based on both (Eguchi 2017)

To improve children's learning, resources for "hands-on explorations that fuel the constructive method" are critical. Furthermore, since children build insight from their experiences with the world—their own learning adds to their comprehension of the world—they establish a strong meaning to hang onto their beliefs and understanding. And when adults warn them that their worldview is incorrect, children seldom abandon it, according to Piaget. Instead of supplying the necessary information, we should enable them to continue to discover, share, and exchange their ideas. What educational robotics may offer children is an electronic manipulative or instrument in which to discover, analyze, and communicate (Eguchi 2017).

3.2. Educational Robotics as a Tool for Teaching and Learning Practice

Robotic is a learning tool that promotes a wide range of abilities. The majority of creating of robots exercises for school-age children have become part of informal schooling. Many schools do not have robotics as a key program strand. Making of Robotics is challenging to incorporate into the current school program, which divides instruction into subject areas.

Alimis (2013) argued that attempting to implement robotics in formal education, teacher requirements is extremely important to identify the kind of results to be obtained from the robots should be raised. Much creating of robotics events for school-age children have become part of informal schooling. Making with robotics is challenging to incorporate into current school curricula that divides learning into topic areas. Most schools do not have robotics or engineering as a key program strand. Addressing student learning experiences that comply with curriculum expectations becomes critical.

The concept of incorporating robots into education has been around for over 20 years. Numerous academic findings indicate that integrating robots into the classroom is an important teaching tool. It has been shown that no age is too young to participate in robotics events. Students of all ages find "acting with robots" to be "fun" and "interesting." Robotics-based instructional practices will greatly enhance the educational process (Eteokleous and Ktoridou 2014).

According to Eteokleous, as robotics is implemented in terms of theme, autonomy and not in the formal curricular plan (Eteokleous and Ktoridou 2014), there are few educational benefits. Robotics, also is used as a tool for educating and providing principles in many disciplines, including math, engineering, science, physics and other fields, including biology and psychology. This method works very closely with devices or computers as intellectual instruments when computers are introduced during the teaching and learning process as students partners. Jonassen (2000) was

the first to promote and stimulate the theoretical basis needed to incorporate robotics (technology) as an educational method. He argued that robotics and other technical means can be construed as cognitive inventions or "mind tools," which improve and strengthen the education process. The purpose of this method is not to learn how to use the robotic kit and its programming software as a method within a particular educational framework, to accomplish learning goals. Students understand how to utilize electronics for their activities and to promote the constructive growth of their social skills (Mikropoulos & Bellou 2013)

3.3. Knowledge and Skills Development

The inclusion of robotics into education has been shown to stimulate the development of higher learning thinking skills, including execution, repetition, analysis, problem solving, decision making and empirical investigation (Bers et al. 2002; Chambers & Carbonaro, 2003). Robotics have often been linked to constructivism (Williams, Ma & Prejean, 2010). The theory of education and learning that underpins constructivism addresses the value of education opportunities, such as activities that can be offered by the integration of robotics into educational activities. The main theme of these exercises is the idea of building learning, which allows students to make immersive thinking artifacts. Students join the assessment process, modify, distinguish, upgrade, restore and reprogram their items. By creating such objects, students learn to reflect the reality. Students can handle their own learning in a constructivist learning setting and can discuss and decide how to proceed. It encourages a student-focused atmosphere in which students play an active role in teaching and learning through teamwork and social engagement.

4. Trends in Educational Robotics

This segment discusses recent research and common topics of educational robotics.

4.1 Robot Teaching Assistant (RTA)

To improve and retain a passion for learning English skills, a robot teaching assistant (RTA) was developed. A quasi-experimental structure and a questionnaire about the motivational examination of the instructional material were used for data collection and evaluation. The results show that the design of RTA focused learning experiences based on the ARCS model for learning English will significantly enhance the motivation, performance and desire of learners to continue to study (Hung et al. 2013).

4.2 Attitudes Toward Robots

Robots in many sectors such as advertising, agriculture, the military, pharmacy, including operations and training, have started to spread in

recent decades. Concerns regarding the likelihood of robotic unemployment will affect robotic attitudes when certain workers are in danger of being substituted by robotics or other technology. In a recent survey of Europeans (n=26,751), robots in general shared a positive view, but concerns regarding robots in some sectors, such as child care, the care of the elderly and disabilities (Turja & Oksanen, 2019) . The survey shows 60% of people in Europe who think the execution of such care activities by machines should be "banned". Taipale et al. 2015 voiced concern regarding robotic use in a range of contexts, including kindergartens, elderly, exercise and training.

Another latest European survey (Stahl,& Coeckelbergh, 2016) found that only 26% of respondents expressed satisfaction with "making a robot offer services and companionship to the infirm or elderly" or "having a robot conduct a surgical procedure on them". This finding can be explained by the widespread negative perceptions of robots held by the general public. Robots are regarded as hazardous and technically sophisticated robots that could be useful in areas where humans are unavailable, such as military applications, space travel, and industry. As a result, modern robotics research focuses on adapting the appearance and behavior of the robot in order to increase end-user adoption. Another research analysis contrasted practitioners' and prospective practitioners' recognition using an Italian survey. They mentioned that, as seasoned clinicians, they were skeptical and saw the assistive robot as a costly and restricted instrument, despite the fact that the study demonstrated an overall optimistic outlook toward robot usage. Extensive study has been undertaken in recent decades on the variables that affect potential users' acceptance and on how to maximize that acceptance. Examining technology adoption is inextricably linked to the societal acceptance and perceptions science fields in general. The application of emerging technologies concerning social and human factors has been analyzed in depth using the principle of technology adoption 16 and the philosophy of rational intervention. By and large, attitudes refer to reasonably consistent favorable, negative, or neutral assessments of an entity or idea.

Human consumers' psychological factors will impact on the process of adoption and their physical and social environment. Heerink says that the computer was seen as a social agent by people who had a higher level of schooling. Scopelliti et al. showed that adults are different from children and youth in terms of technology. Nomura et al. examined age ects and robotic fears. The results showed that young people who have open or indirect experience with humanoid robots have become more afraid of robots than those aged between 50 and 60. The women were more critical of the use of robots than men, says Arras and Cerqui. Gross et al. found that the sample started to comprehend the benefits and embraced the robot

more after one day of usage. Initially, new results can raise the perceived pleasure (PE), but then decline with time, which may reduce the robot's long term acceptance.

Savela et al. recently found that while participants had no real robot experiences, negative feelings were found. As a result of the absence of firsthand or actual impressions, people are forced to depend on media representations or mental images of robots. As demonstrated by attitudes hypotheses, these seem to have an impact on how people feel towards them. At the moment, research has concentrated on proven technologies such as automated robotic systems and telepresence robotics, rather than on new technologies such as autonomous service robots. Telepresence robots have received widespread support from patients and staff (Reis et al., 2018), especially in the field of home care.

Benitti (2012) has published a literature study on the usefulness of education-related robots, which claims that the correct use may also improve learning. digital assistants mitigate fears because they enable the scholar to remain engaged in the game in addition, the robot can also help students learn by interacting with them and helping them to succeed in their studies.

According to the authors of a recent paper, robots are licensed for educational activities in educational environments, attitudes toward educational robots are neutral, and robots may be characterized in subjects such as science, technology, engineering, and mathematics . Respondents, on the other hand, showed unwillingness to participate in robot-assisted training and were unlikely to imagine a robot teaching subjects such as social sciences or art (Han, & Conti, 2020)

The latest robotics research has shown some benefits of using robots for children with disabilities and neurological diseases such as autism spectrum disorder, with a different emphasis on machine learning techniques and partially automation robots.

4.3 Robotics for Children with Special Needs

Children with Special Needs represent a varied group of individuals in terms of neurofunctional, behavioral, and sociocognitive characteristics, but they also share a common deficiency in Executive Functions in general. Educational robotics is mainly concerned with the impact that designing and programming robots have on children's learning and academic achievement. We recently discovered that challenging robot planning and monitoring (ER-Lab) improves visual–spatial working memory and reaction inhibition in early childhood during normal development, and that an ER-Lab could be a feasible rehabilitative tool for children with Special Needs. The study's findings and potential insights on how ER-Lab systems

could become a valuable method in schools of special needs children are addressed (Di Lieto et al. 2020)

4.4 Educational Robot and Students' Motivation

Over the last decade, educational robotics has been recognized as an important teaching method. Many experiments have been conducted to investigate the function of robotics in assisting educational classroom practices. However, there is a scarcity of credible scientific data supporting the usefulness of educational robots.

As a consequence, this study developed an interactive robotic learning environment that incorporates simulated objects and an instructional robot with an appealing teaching application. This research examined the effect of the proposed curriculum framework on student achievement and motivation. The experimental results encouraged the students to use the robot-based system of schooling. The incorporation of robotic education systems into classrooms thus offers students a significant advantage by growing their overall involvement in and inspiration in learning (Chin, Hong, and Chen 2014)

4.5 Educational Robotics and Computational Thinking

The recent paper (Chalmers 2018) describes a research analysis that looked into how Australian primary school teachers incorporated robots and coding into their classes, as well as the potential effect this had on students' computational thinking skills. Four primary school teachers from four schools participated in the research by integrating robotics kits into their classrooms. The findings show that experimenting with and utilizing the robot kits and exercises helped teachers gain interest and expertise in order to expose young students to computational thought.

4.6 Educational Robotics and Inclusive Education

The Dakar Framework for Action 2000 states that both children and youth must have the ability to read. In certain nations, comprehensive education is described as education in which children with special needs are funded in order to provide them with equitable opportunities. Special needs, as one of the main risk factors, will also restrict access to schooling in general and hinder access to learning in specific fields. It is not permissible to limit anyone's access to education when offering special assistance to a subset of students. No child should be left behind in inclusive schooling, and everyone should consider the concepts of zone of proximal development as well as the principles of motivation. Educational robotics may be used as a medium for information construction as well as an assistive tool for students who have difficulties with particular fields. Educational robotics should be used to transform students' views about studying class culture, encouraging everybody to be welcomed and

interested. Educational robotics may play an important role in other ways that are important for keeping students involved and inspired. Inclusive schooling cannot be seen as a lattice that citizens support without questioning the secret causes. It is unacceptable for educators to begin programs that are meant to be egalitarian, but the secret variables are not all assessed. Educational robotics can be analyzed multidimensionally, taking into consideration not just well-known issues but also all unknown dimensions. (Daniela and Lytras 2019)

4.7 Student and Teacher Roles of Educational Robotics in School

School robotics is a path to scientific development and improvement through which the teacher guides students across emerging technical contexts. In the school, students learn the basics of engineering, mechanics, modeling, electronics, and programming. Individuals and associations complete tasks. The teacher does not have the right answer; each student will address the problem in a unique way. The student requires self-employment abilities, finishes work, and experiments with novel ideas without being frustrated by challenging difficulties. It is clear that modern technology has a unified view of the real universe. He knows how they function, and he will therefore create and implement his own creations. Only the basic knowledge needed to create robotics must be learned. The key feature of educational robotics is that architecture and programming may improve mental cognitive functions in students in a course, develop ways of thought, and develop characteristics (Chelnokova et al. 2021).

Students get to know the world of engineering and high-tech research and are interested through games and projects in robotic lessons in the field of technology. The teacher's job is to show you how to utilize the learned skills openly to carry out individual assignments. It can be noted that children are very interested by construction. Robot classes will feed their hunger for understanding by learning not just computer and programming technology but the environment around us.

4.8 Easy Robot Behavior Programming Interface (ERBPI)

The new application, named Easy Robot Behavior Programming Interface (ERBPI), is designed to meet a collection of specifications extracted from limitations found in previously defined programming environments. What are the requirements (De Cristoforis et al. 2013):

1) User-friendliness: No prior programming or robotics experience is needed. The gui must be user-friendly and simple to use.

2) Platform independence: The program must be able to interact with a wide range of robots and simulators while still being readily extensible to monitor new ones. It is necessary to abstract the various bodies, sensors,

actuators, low-level commands, and protocols used to communicate with various robots.

3) Flexibility: Students of different experiences and teachers with different preferences must be willing to utilize the computer framework successfully and must fulfill different levels of the interface, curricular requirements, learning themes and teaching physical conditions.

4) Portability: To suit the various hardware and software available at schools or other educational institutions, the curriculum must be portable.

5. Future Research

The promise of using robotics as a learning instrument to accomplish particular learning goals as well as create a student-centered atmosphere is discovered. As a result, this paper contributes to the comparatively recent body of literature on robotics incorporation as mindtools. Furthermore, it lays the groundwork for further research into robotics' function in improving the teaching and learning process and encouraging the improvement of students' higher-order thought skills, as well as the partnership between the interdisciplinary method and educational robotics. Future studies may also examine and define the best learning pedagogies and teaching methods to be used as robotics is incorporated into educational activities in variety of learning levels and age groups.

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