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Brazilian Educational System under Attack: The Reforms Proposed After the 2016 Coup and Their Sociological Contexts

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Abstract

In mid-2016, in Brazil, many political changes are made after the deposition of President Dilma Rousseff from the presidency of the federal republic. Among these changes, initiated by the President of the Republic Michel Temer and sustained by his successor, Jair Bolsonaro, are the changes in the area of Education, placing it more and more on the path of the established neoliberal agenda. Many of the proposed changes, as well as the way they are carried out, had already been addressed by several authors in the field of Education and Sociology. Thus, this article proposed to explain the non-explicit political interests with these reforms based on a specific literature. In the end, the model of making the educational system for maintaining the neoliberal agenda is described, as well as possible means of weakening this system.

Keywords: educational system, neoliberal agenda, political interests

1. Introduction

In Brazil, the educational public system has been facing some huge changes since 2016, when President Dilma Rousseff underwent an impeachment process and her place was taken by Michel Temer. Expected to comply with a neoliberal agenda, Temer's reforms were broad, encompassing social security, social assistance programs, reduction of labor rights and reforms in the educational system (Lima & Maciel, 2018).

As Dilma loses support in the Chamber of Deputies, Temer's articulation begins by strengthening relations with her already allies in the group named "centrão", the large mass of deputies with greater numerical articulation for the sanction or veto of laws. This causes his government to be automatically marked by greater participation of market interests, a characteristic sustained by his successor, Jair Bolsonaro.

When dealing with educational management, the governments Temer and Bolsonaro are characterized by a characteristic of modernization of the system by the

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withdrawal of political-ideological criticism in the teaching and learning processes in primary and secondary schools – then, the commitment to put the educational system on the *Status Quo*.

Based on these two approaches, as well as the need to understand the real meaning of the reforms, mostly to the Education area, this article aims to discuss its main proposals for education and reforms through a sociological perspective, in which it is expected the comprehension of the non-explicit arguments, kept between the lines, as the real agents benefited by their changes.

2. Methodological procedures

To explain the phenomena taken as objects of study it was chosen the deductive method. "In a deductive argument, the conclusion follows necessarily from the premises" (Jarrard, 2001, p. 73). The education reform laws will be described in a period of five years (2016-2020), during Temer and Bolsonaro Government. A critical discussion of these laws will be established based on the bibliography of theories previously raised by authors dedicated to this theme. The criterion taken for the selection of these authors is based on three concomitant characteristics: Criticism of the influence of the neoliberal agenda in Brazilian education; the opposition to the supposed neutrality in the educational system; and the defense of a libertarian, popular and anti-classist educational system.

3. Education reforms from 2016 to 2020

It is not possible to talk about the main criticisms of the post-Dilma Rousseff administration without commenting on her main results as President of the Federative Republic of Brazil (jan. 2011 – ago. 2016). First, in her re-election, her campaign adhered to the slogan "Brasil, Pátria Educadora" [eng.] "Brazil, Educating Homeland" (Lockmann & Machado, 2018), however, over the years, this has accumulated unsatisfactory results in the management of Education, according to international meters such as the Program for International Student Assessment – PISA (Araújo & Tenório, 2017). Anyway, some authors like Araújo and Tenório disagree with the use of PISA as a measurer of the results achieved over the years in education, considering other meters that for many managers would have greater credibility, meantime, they do not deny that the PISA results made up a considerable part of the criticism of Dilma's management in Education, adding to less formal justifications for the August 2016 Coup that took her out of the power.

When Michel Temer assumed the presidency of the republic, on August 31, 2016, his speech was one of conciliation with institutions, especially business ones, and throughout his government, his management in education proved to be even clearer his commitment to a neoliberal agenda.

The first major proposal of the Temer Government for Education was the already amended law 13.415 / 2017, which modifies Law 11.684 / 2008 of the Basic

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Guidelines in National Education, of 1996, offering the possibility of distributing the load of high school subjects according to with the life project of each student, and also the option of vocational education. This new approach indicates a tendency of the poorest classes to technical education, while the group of more fortunate students follow disciplines of intellectual formation and preparatory for the entrance to the university (Ramos & Heinsfeld, 2018).

In the long run, the tendency of poorer students to choose technical education, in the search for an immediate improvement in life, may exacerbate Brazilian social inequalities, while students with better living conditions will be able to continue with their university entrance projects with less competition, and having greater and better professional opportunities through university training (Silva & Melo, 2018).

The reforms made during the Temer Government for Education, such as the "new high school" (whose implementation is scheduled for 2021), follow an agenda of numerous neoliberal reforms, such as labor reform, and the social security reform, sanctioned by his successor. These two reforms, especially labor reforms, may explain a lot about the role of the working class, as teaching workers, in the neo-liberal agenda of Michel Temer and Jair Bolsonaro.

One of the main characteristics of the 2017 labor reform is the labor outsourcing, responsible for making the formal contracts more flexible, which would immediately generate an increase in informality in Brazil. Begun as Bill 4.302 / 1998, still under the liberal Government Fernando Henrique Cardoso (1995-2002), this project becomes part of the set of reforms of labor laws in Brazil in 2017 and its main justification was the reduction of contractual obligations in due to the greater capacity to do them in the short term, thus reducing unemployment rates (Alves, 2018).

When this project reaches the Brazilian professors, the regressive transformations are evident. Fernandes (2017, p. 237) remembers that "a school may now choose not to have any direct employees and to hire an outsourcing company to provide the teachers, inspectors, receptionists, doormen and cleaners necessary to render the services". This phenomenon, although it has become clearer in the private education system, has also intensified in the public sector. Teachers in several states and municipalities have been submitted to intermittent contract laws in order to reduce their rights and school obligations.

Contrary to what is proposed, Michel Temer's reforms fail to create jobs, and even for informal work and outsourced work, there is a high intensification of precarious work. The Brazilian Institute of Geography and Statistics reports an increase in unemployment from 10.2% (before the August 2016 Coup) to 13.3%, a result achieved in the same year of the reform. To a greater extent, it also reduced the popular participation in the national economy – the consumer and services market (Silva, 2019).

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The teaching class did not escape the rule. The increase in an already striking informality, along with the subjectivity and precariousness of work, made teachers, as a large portion of the working class in general, search for new ways of obtaining income, not being able to give exclusive dedication to teaching.

Not trying the re-election, Temer's party, MDB, puts his Economy Minister, Henrique Meirelles, in the electoral dispute for the presidency of the federal republic, which due to the increase in corruption rates and Temer's low popularity, from the beginning did not reach the expectations of the party, fulfilling only an electoral rite. Beyond Temer, pushing his same neoliberal economic agenda, however, with an ultra-conservative speech, Jair Bolsonaro gains popularity, promising to continue the reforms of Temer, also emphasizing a supposed commitment to fight corruption.

Discontent with the Bolsonaro government plummets in his first year as President of the Republic. Although with the promise of diversifying from other experiences, the economy declines, as does popular participation in the economy. In addition to this, the continuity of the alliances with "Centrão" (which in 2018 he promised it wouldn't happen) and the use of power to shield his family from corruption investigations further undermines his popularity during 2019, a factor that is enhanced by the lack of effective measures to fight the Coronavirus pandemic in Brazil in 2020 due higher inflation rates in basic food products and higher unemployment rates.

Like many of the ministers making up Bolsonaro's team, the Education portfolio has not escaped the rule of his main criteria of choice: less technical, more conservative ideology. His prime minister, Colombian Ricardo Vélez Rodriguez, appointed by the president's mentor, Olavo de Carvalho, lasted only three months and seven days in office, due to strong popular rejection by the lack of projects for the area.

Then, Abraham Weintraub takes the place; he accentuated the conservative ideology in the ministry, often taking public anti-diplomatic positions, causing problems even with the Chinese government. Weintraub's antiestablishment positions have caused problems when at a ministerial meeting he suggested the arrest of members of the Brazilian Supreme Court. Such an event causes his ruin in the ministry, which leads him to resign.

After a series of failures in the attempt to hire a new minister, caught for lying about a doctorate degree and a postdoctoral job in his academic curriculum, the government makes an agreement with the professor and evangelical pastor Milton Ribeiro, known for reduction projects budget for education, as well as for the defense of retrograde disciplinary methodologies, such as physical punishment (Reuters, 2020).

Among the characteristics of Temer and Bolsonaro in the management of Education, there are opportunities for defenders of the neoliberal agenda in two aspects: defenders of a supposed freedom, which involves their speeches but disregards historical trends; and conservatives, adepts of retrograde disciplinary methods and

defenders of anti-scientific conspiracy theories. However, in a truly perspective of Education for freedom, the antagonism of the discussion must be taken to another field. There is no real antagonism between advocates on the same agenda just because they disagree on how it should be implemented. The real antagonism is in questioning the neoliberal agenda in Education, as it will be discussed in the next topic.

4. Criticism through bibliography

As already mentioned, it is important to remember that the choice of authors to carry out the criticism is based on their defended pedagogical political thoughts and educational projects. The analyzed phenomena of the last five years of public education management is based on the thinking of these authors, whose bibliographies had their first editions years and decades before the analyzed period.

To understand the increasingly clear alternative for a neoliberal educational system, it is necessary to understand that education has a social function. The directions that a society takes are given by its intellectual formation, by the food of its desires to maintain the current socioeconomic system or by a real change. The sociologist Paulo Meksenas (2014) analyzes the education from three perspectives: (I) traditional; (II) renovated / reformist and (III) transformative.

The first perspective, the traditional one, can be said to have already been overcome in Brazilian territory, as well as in many countries. The traditional perspective consists of the belief of the teacher as a full holder of knowledge, which is disseminated through a system metaphorically understood by "deposits"; in which students apt to this teaching system learn, while others, who for any reason are not able, fail.

The reformist perspective comes as critical to the traditional one, since it starts to consider inclusion in the teaching process, as well as decentralizing the participation of the teacher in the classroom and valuing the exchange of knowledge with students. This process, addicted to the successful social inclusion, showed satisfactory results in the intellectual development of the participants. In this way, the reformist current of education has persisted since the first decades of the 20th century to the nowadays. However, the reformist approach has not proposed solutions to the problems caused by the classist domination structures through an education that raises awareness of these problems, and this concern leads thinkers to frame the perspective for a transformative educational system (Meksenas, 2014).

It is important to clarify that the reformist perspective is not completely linked to criticism of the traditional educational system. In fact, there is an opening where pedagogical distortions are perceived to be corrected, as well as positive aspects to be improved. However, according to Durkheimian thinking, there is a direct relationship between reforming educational structures and reforming the capitalist system, as something that is not supposed to have reached a full state, but must be

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improved and maintained. Education, therefore, includes society to adapt to this system, which is expected to be improved and more inclusive.

This is because, for Durkheim, the system is established before a conception of the social function of education is established on it, that is, education adapts the human being to have a better fraternal relationship, to improve their social capital. His vision is better associated with the reformist perspective because he believes that education should be approached in a creative and as customized way as possible to include and adapt the individual to the current socio-economic system, not exactly extolling the current system, but by setting about the idea that education must be neutral (Durkheim, 1978).

When thinkers, philosophers, sociologists and pedagogues around the world appropriate the Marxist criticism to the system of production and exploitation of work and, in general, to the capitalist system, they realize that there's a possibility of inserting the revolutionary thinking in the educational action, thus making possible, the conception of an educational methodology for the formation of critical human beings, capable of using it to question their socioeconomic conditions of exploitation, discovering themselves in their roles in the gears of the system and acquiring the tools to change it (Meksenas, 2014).

Naturally, the liberation of the oppressed class is not suitable for the oppressive class, once it improves its mechanisms of domination. Since in a scenario of "modernity", "friendship", "fraternity", domination will not occur through the use of brute force, the mechanisms of ruling society maintains its agenda by promoting a fatalistic discourse. This discourse causes the working classes to take fatalism and believe that the social context cannot be changed, but that they can change their personal concerns and adapt to the system, dream of personal fulfillment, with a better position in the company, with better wages and better working conditions. In this way, the working class becomes more competitive, working for the enforcement and maintenance of the classist system (Freire, 2019).

Therefore, pedagogy in the reformist perspective of the new school, even if inclusive, will never give the people the tools to question the structures of domination, since it presents itself as neutral or wide open its true objectives, it will be a tool of the ruling society. From this perspective, inclusion is not necessarily a good thing. If the ruling society appropriates an effective educational method to distribute it to the population and indoctrinate it to serve class interests, from conditioning conscience to production by individual achievement and not by the liberation of the working classes, this perspective, in the transforming pedagogy, to free the oppressed masses, must be combated. "The fatalistic, immobilizing ideology that animates neoliberal discourse is loose in the world. With an air of postmodernity, he insists on convincing us that we cannot do anything against the social reality that, from historical and cultural, becomes or becomes an 'almost natural'" (Freire, 2019b, p. 21, free translation).

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The dialogue in which the direction of education is taken only by agents interested in fulfilling the neoliberal agenda is not accepted as democratic. Be adept at the perspective of traditional education, be adept at including peoples, in the end, education will not be being discussed as a good that has a social function. The neoliberal agenda, no matter its sub-ideologies, will always be the object that education from a transformative perspective will oppose, regardless of the idea of freedom sold as anesthesia to the oppressed class.

From the perspective of transformative education, the educational process must be initiated by popular means, in order to reach in its conception the oppressed classes and through them, as a critique of formal educational structures, managed by neoliberal agents. In other words, a change in educational structures towards truly emancipatory education is not expected to start with the formal education system, but to reach it by the popular masses aware of their role and, finally, liberate the oppressed masses in a more generalized way (Paludo, 2015).

Criticism and the insertion of the transformative education model in the formal education system do not occur by peaceful means. The ruling classes are well aware of the potential of their antagonists and also know that the mere sale of individualistic dreams is not always enough. The strategy adopted by the ruling classes, then, is to strengthen their discourse in the school environment, offering an alienating education (Mészáros, 2008). In this way, the reproduction of the ruling ideology in the work environment can take place without major difficulties, since the oppressed classes are already indoctrinated to arrive and remain in that environment resolute that any proposal outside the classist system must be taken as a fearful one subversion.

These propositions allow us to design a device that is easy to understand the importance of reformist education and the adhesion of the poorest students inserted in the context of Michel Temer's New High School to adhere to technical education, as well as the reinforcement given by Bolsonaro's explicit conservative speech for the perpetuation of that system.

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Board 1: The role of the reformist school's neutral educational system in the classist system
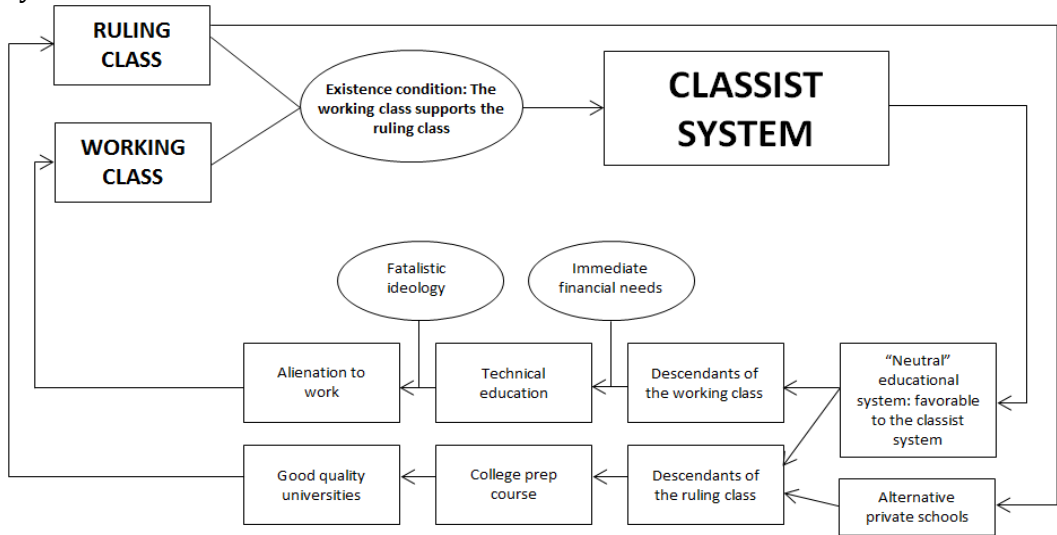
Source: made by the author through the interpretation of the bibliography (2021).

5. Discussion

This flowchart, elaborated through the literary analysis, explains how the classist system produces the "neutral" educational system, separating the classes with the proposal of technical education (Temer) instead of a greater dedication to the college prep course in high school, a choice that it will usually come by working-class descendants (larger masses) to suppress the immediate financial needs. Then, the fatalistic ideology (characteristic of the Bolsonaro's government) indoctrinates them to accept the state of exploitation as something natural and fair.

On the other side, the heirs of the ruling class, even though they pass through the same educational system, are absolutely able to opt for college prep education, which will help them to gain their places in good universities, but in this situation, with less competition and guaranteeing their prerogative conditions in the ruling class as well.

Eventually, some more elitist groups in the ruling class may send their children to alternative educational systems; however, the destination will be the same for them. Since the masses will tend to focus on standardized formal education schools, it is these schools that the class system will try to influence.

Naturally, there is a question about how to meet the immediate financial needs of the working class if eventually their heirs opt for university preparatory education, which would automatically require another four to six years of university studies and then more for a financial stabilization. In this case, it is up to the population to demand the implementation or continuity of public social assistance policies to guarantee their

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right to study, according to the Brazilian Federal Constitution – Chapter III, art. 205-217 (Brasil, 2011). Although the population may demand their rights, the fatalistic discourse and alienation that will socially exclude anyone who is against the *Status Quo* are very effective.

One of the great achievements of Partido dos Trabalhadores (Workers' Party) in Brazil was the expansion of access to the university by the neediest populations, which also involved a series of security measures for maintaining and continuing studies, however, there was no structural reform in the system (Aguiar, 2016). Educational system so that it could cause a great deal of damage to the classist system. Anyway, maybe a sudden radical change could not be expected yet. It is necessary to bring back the democratization of access to university, as a hopeful measure to weaken the fatalistic discourse and social alienation.

Conclusions

Based on the research, it was possible to explain at what points there was a regression of the Temer's and Bolsonaro's governments in the Brazilian educational system, as well as their foundations in sociology. They did not follow a revolutionary period, even though their predecessors slightly affected the interests of an already established naoliberal agenda.

Even though the new agents at the top of the executive branch have decimated the discourse on the importance of the entry of the poorest population to higher education, society still has legal provisions, which must be charged and whose neutralization of access by the fatalistic discourse, which now can start directly in the New High School, scheduled for implementation in 2021.

As the freedom of professorship to disseminate critical thinking in the school environment is still safeguarded, the antagonism of teachers to the system of class separation is also fundamentally important for a possible and gradual dismantling of the neoliberal agenda at school.

The situation experienced in Brazil, not being unprecedented, can be a good tool for analyzing similar approaches, whose discourse by public administrators shows a tendency to signal the modernization of the educational system, but which ends up not going beyond the script elaborated by the neoliberal agenda.

The maintenance of the classist model in the neoliberal educational system has been denounced by several authors who focus on research related to the philosophy and sociology of education. Understanding the criticisms of classical authors, as well as the new approaches of contemporaries, can be a good alternative to reflect on new changes in the educational system around the world and denounce any possible attacks that enhance the control of neoliberal agents over the public management of education.

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The Relationship between Multiple-Intelligence and Thinking Patterns through Critical Thinking among 10th-Grade Students in Private Schools in Abu Dhabi

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Abstract

This study aimed at investigating the relationship between multiple-intelligence and thinking patterns through critical thinking among tenth-grade students in Abu Dhabi private schools. This study used descriptive approach and SEM. Also, the study sample consisted of 350 students from five private schools in Abu Dhabi. The instruments used were Gardner's multiple-intelligence scale and thinking patterns scale. Data was analysed using descriptive statistics, correlation coefficient and Amos. The results showed significant positive relationship between multiple intelligences (IV) and thinking patterns (DV) through critical thinking (MV). Direct relationships were found between linguistic intelligence (IV) and thinking patterns (DV) (r=.284); social intelligence (IV) and thinking patterns (DV) (r=.241); natural intelligence (IV) and thinking patterns (DV) (r=.113); musical intelligence (IV) and thinking patterns (DV) (r=.270); bodily-kinaesthetic intelligence (IV) and thinking patterns (DV) (r=.470). In conclusion, the findings revealed the influence of critical thinking on the relationship between multiple-intelligence and thinking patterns.

Keywords: multiple intelligences, thinking skills, tenth-grade, thinking patterns, critical thinking

Introduction

Teaching thinking skills is an important goal of education. Schools should do everything they can to provide thinking opportunities to their students. Moreover, many teachers consider the task of developing the student's ability to think as an educational goal that they place at the top of their priorities (Jarwan, 2007).

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Developing thinking would develop the learning (educational) process, as it makes students more aware of their mental processes.

Askooly (2009) explained that thinking can be developed within the framework of education which aims at forming the critical mentality of the students, so that they can judge the ideas and perceptions to mentally determine their consistency and harmony. However, critical education is opposed to the conventional teaching; the latter refers the person to a pot where every creative interaction gets shut down, and the only way to integrate into society is to totally accept the perceptions and to comply with the provisions imposed by society, with loss of the ability to revise preconceptions or produce new ideas. (Askooly, 2009).

Al-Sayyed (1995) explained that while information becomes old, the thinking skills are new, and thus, thinking is the tool by which one directs the variables of the era, and consists of the individual's tendencies, beliefs and outlook of surroundings. Therefore, the interest of societies has become focused on the development of people's thinking skills. Despite the technical development, there are indications that some individuals are still practicing the wrong and irrational ways of thinking and this leads to the emergence of contradictory and wrong concepts and developments, which impedes the intellectual progress of the communities. (Al-Sayyed, 1995).

Atiyyah (2015) noted that the academic failure of university students is due to their inability to think abstractly in solving problems efficiently. In addition, (Schafersman, 1991) pointed out that the low level of thinking among students is due to what teachers do in the classroom, i.e. the deficiency in transferring the academic content in various specialties, like (What to think about?) while it is supposed to be based on the understanding and evaluation of the scientific material (How to think?). Also, Hardadek noted that every student can learn how to think if he/she was granted the opportunity of training and actual adequacy practice (Atiyyah, 2015). The development of thinking skills is considered a fundamental pillar and cornerstone of all aspects of educational learning, because it prepares students for future life and qualifies them to be good and productive individuals.

Al-Otaibi (2007) stated that thinking skills must be learned through human sciences in order not to be misused. Feuerstin has applied the instrumental enrichment program, which is one of the worldwide programs to develop thinking skills, it relies on independent subjects that are not based on a specific context, and its results showed a great ability to the non-verbal deduction and this proved that thinking can be taught (Al-Otaibi, 2007). On the other hand, Ruzzuqi and Abdul-Karim (2015) pointed out that thinking is a goal of education, and thus, the development of thinking is an important educational function for all institutions to help the learner in dealing with this era of information, which requires individuals with mature mentality, objective outlook of ideas and attitudes, and search for reasons and evidences. Thinking is a necessary process to establish a democratic life and achieve scientific and social progress. (Ruzzuqi & Abdul- Karim, 2015).

Jarwan (2014) emphasized that the importance of thinking is that it is vital to discover the universe and has a great role in life and learning success. It also improves the student's achievement level and gives him/her a sense of control over his/her thinking stemming from the achievement level which makes him/her feel confident. The elements of thinking include visualization, imagination, symbolizing, muscle activities and brain functions. However, educators see that the elements and tools of thinking are to expand the student's horizons by looking at ideas including the pros and cons, organizing the ideas of the learner through analyzing the problem to primary and secondary procedures, identify the similarities and differences between the phenomena as well as the interaction between ideas, and provide the environment that helps to stimulate thinking. Educators agreed upon the following thinking patterns: scientific, empirical, logical, high-level, creative, critical, analytical, deductive and reflective thinking.

Abu-Hashim (2007) pointed out that the interest in the development of creative thinking is one of the priorities of educational issues in the Arab world. Many studies and researches emphasized the role of the teacher in developing creative thinking among students, including the International Conference on Thinking (1997) and Education Curriculum and Development of Thinking Conference (2000). The Development of Arab Creativity Community made a training workshop that included the development of creative thinking skills and the importance of developing the human mind. The theories of mental formation, which tried to interpret intelligence, differed, reflecting the believers' visions of these theories of mental formation on one hand as well as reflecting the developments of methods of measurement and evaluation, and the statistical methods used on the other hand, where psychologists took a variety of ways to understand intelligence and its nature (Abu-Hashim, 2007). Multiple intelligences are not limited to one or two types of intelligences, but rather to several types of intelligences that include many aspects of students' lives, whether in school or practical life.

Also, Hussein (2012) noted that intelligence does not have one fixed ability measured by single measure to be determined. However, multiple intelligences are not just preparations, abilities or talents. To illustrate, Gardner suggested at the evolution of multiple intelligences that each individual possesses these intelligences in varying degrees and has a unique combination of these intelligences that can be improved to varying degrees. Moreover, Gardner showed in his book "Frames of Mind" a new concept of intelligence as an ability of solving the problems faced by the individual with unique and creative abilities that solve the problems creatively in natural situations. Also, Bara'edah (2012) explained that multiple intelligences proved their effectiveness in taking into account the individual differences, raising the students' level of achievement, expanding the teacher's teaching strategies, taking into account the different intelligences of students and their learning styles, and providing plans and teaching methods that grow the different sides of students' intelligences.

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Furthermore, Gardner considered that thinking is the processes of the mind in handling the situation content to reach a solution. According to him, a learning style is the group of intelligences and thus, the development of one or all of them facilitates the thinking processes of students. However, Gardner has criticized the intelligence tests that measure intelligence as a general mental ability (IQ), and considered to be culturally biased, because they measure only two types of intelligences, which are linguistic and mathematical, and he argued that there is no one intelligence, but multiple-intelligences. The intelligence measured by traditional methods defines one area, while multiple-intelligences are psychological abilities that influence and develop the individual's motivation, experience and cultural factors. Also, Fasko (1992) suggested that the results for multiple intelligences-based programs are bigger and better and students with learning disabilities can improve better (Al-Khafaf, 2011).

Problem Statement

Neglecting thinking among learners may have many negative effects. Education that neglects thinking skills builds knowledge for students through indoctrination and memorization and neglecting all activities that build the student's experiences. Also, neglecting thinking in educational institutions lead to neglecting every activity outside the classroom and neglecting the development of positive trends and tendencies. This leads to a reduction of similar learning opportunities for all students, because the construction of tests is limited to retrieving only memorized information and neglects individual differences. Thus, it affects the level of quality education that the student needs in the future. (Langer, 2004).

Since the sixties of the twentieth century, the voices of those interested in education in a number of developed countries have called for the need to review school education and direct it towards developing thinking skills and the ability to think among school students. This call has intensified over the past twenty years and has become known as the teaching thinking or education for thinking due to the negative effects of the lack of interest in thinking, which included the inability to adapt to the surrounding environment and this negatively affects the development of plans as the student is an important social pillar of the acceleration of progress. It also affects the student's ability to find solutions to problems and limit his abilities and inability to discover himself, which affects his ability to make decisions, weakness in explaining the phenomena surrounding him and inability to harness them, which limits the student's acquisition of new experiences. Thus, limits his ability to insight, imagine, judge things, and not feel the joy of achievement and discovery. (Winarti, Yuanita & Nur, 2019).

Many studies, including Al-Saliti (2006) study, have indicated that there are deficiencies in thinking patterns and skills among students. Therefore, it is necessary to develop educational policies and use strategies and means to enhance thinking in the classes. Many studies have indicated the best educational methods that contribute

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to the development of thinking patterns among students and the application of multiple-intelligence in the classroom. For example, Yamin (2013) and Tayeh (2016) pointed out the need to base the educational process on the theory of multiple-intelligence. Howard Gardner's theory on multiple-intelligence is an excellent framework for developing students' thinking and taking into account the different thinking styles and skills. Multiple intelligences have not been integrated into the educational curricula. This is confirmed by the study of Al-Khuzaie and Al-Amrani (2013) that the use of learning strategies based on multiple-intelligence in the classroom at an early stage allow students to develop thinking skills and patterns. Thus, students have the ability to make decisions and solve problems, which leads to meet their educational needs and life skills and acquire new experiences to keep pace with the wheel of development.

Purpose of The Study

This study has two main objectives as follows:

1. To determine if there is an effect of relationship between multiple-intelligence and thinking patterns through developing critical thinking among 10th grade students in private schools in Abu Dhabi.

2. To determine if there is an indirect relationship between the study variables i.e multiple-intelligence, thinking patterns and critical thinking among the 10th grade students in private schools in Abu Dhabi.

Multiple Intelligences Theory

The origin of the multiple intelligences theory has begun in 1979, when Van Leer Foundation asked Harvard University to conduct a research on the evaluation of scientific knowledge and mental abilities of individuals and to demonstrate their effectiveness in different life situations. The concept of multiple-intelligence theory is considered very important. This theory changed looking at intelligence generally and introduced another understanding for intelligence. It has also rejected the single general intelligence idea and showed the existence of multiple intelligences that the learner has, which is considered as the mental capabilities that learners have and can use in their everyday lives. (Al-Samaili & Al-Zahrani, 2012)

Balawi (2011) has identified the theory of multiple intelligences developed by Gardner as a theory that enables educators to find teaching methods that help learners master the subjects and create an exciting classroom environment, including activities and assessment tools that respond to eight types of intelligences, which are linguistic, logical, natural, spatial, musical, bodily-kinesthetic, interpersonal, and intrapersonal (Balawi, 2011).

The researcher thinks that the number of multiple intelligences is not limited to eight intelligences only and it can be increased in the future. The continuous research will

help in discovering and reaching other new multiple intelligences that cover all the sides of the learners' lives.

According to Rayyan (2013), intelligence is not a single type, but multiple and various types which work independently and their levels vary within an individual. In addition, the intelligences vary in growth and development, both intrapersonal and interpersonal.

1. Types of intelligences are all vital and dynamic.
2. The multiple intelligences can be identified.by their distinctions, descriptions and definitions
3. Multiple intelligences can be developed and raised if individuals have motivation and if appropriate training and encouragement is found for their development.
4. The levels of multiple intelligences differ from one person to another. Moreover, each person has a unique combination of these intelligences which can contribute to the development of another type of these intelligences. Furthermore, the mental and cognitive capacities as well as the sub-capacities and skills behind each type of the multiple intelligences can be measured and evaluated. (Rayyan, 2013)

Al-Sayyed (1994) explained that intelligences work in a complex way. The ways in which an individual expresses his or her own multiple kinds of intelligence are different. Multiple intelligences are not directly recognizable, but we are inferred to them through our behaviors and reactions to internal and external influences. There are things in which we show great abilities to demonstrate our intelligence in a particular field (Al-Sayyed, 1994).

This theory is based on the processes that the mind follows in order to solve the problem. It attempts to describe how individuals use their multiple intelligences to solve a problem and it helps teachers expand their strategies to reach as many learners as possible. Also, it has no specific rules, except for the requirements proposed by the cognitive components of each type of intelligence. It proposes solutions that enable teachers to design new curricula and to handle and present content differently (Al-Rubaie, 2013).

Teachers can improve their performance in the education process when adopting multiple intelligences as an input in teaching styles and it will take into consideration the nature of the learners in the classroom. Moreover, this theory stems from the learners' interests and takes into account their preferences and abilities. It also guides all individuals to the job that suits their abilities and tendencies, improves students' achievement levels and raises their levels of interest towards educational content. Gardner believes that when providing information through multiple intelligences, it produces several things, including that it reaches as many learners as possible; students realize that they are more likely to express themselves and increase the

ability of learners to present what they understood from the taught lessons in multiple ways (Hussein, 2018).

Table (1)

A summary of the multiple intelligences theory[1]

Intelligences	Basic components	Symbolic signs	Future career (Known characters)
Linguistic	Sensitivity to sounds, language, structure, meanings and functions	Linguistic studies and the sound of letters in pronunciation, such as English and Arabic.	Writer and orator, such as: Martin Luther King, Abbas Mahmoud Akkad and Charles Dickens.
Logical/ Mathematical	Sensitivity to arithmetic and logical operations with numerical indications and long indicative chains	Computer programming and languages (e.g. Pascal language)	A mathematician and software scientist, such as Al-Khawarizmi, John Dewey and Einstein
Spatial	Visual perception of the world and the ability to correctly and accurately visualize spatial	Imagination and Accuracy	Architect: Reem Colhas
Bodily-Kinesthetic	Express of thoughts using consistent and skilled body moves	Symbolic languages, such as sign language and gestures	Actor, athlete, storyteller, dancer like: Michael Jordan
Musical	The ability of the person to taste musical melody, rhythm and verbal harmony	Musical tunes and rhythm of musical instruments.	Composer, Musical Instrument Maker, Lyrics Writer (Michael Jackson)
Interpersonal (Social)	Capability of understanding personalities and moods	Body language such as: facial expression and insinuations	Political analyst, military leader and social reformer, such as Mother Teresa
Intrapersonal (Self)	Able to understand himself and his emotions and focus on his strengths and weaknesses	Self-programming	Psychologist and therapist, religious reformer, (Freud, men of religion)

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[1] Author's conceptualisation

Thinking Patterns

The more intelligence is practiced by the learner through applying thinking skills the more thinking patterns are updated. There are three main types of thinking patterns including, visual thinking, creative thinking and critical thinking (Afaneh & Al-Khazindar, 2005). Visual thinking is one of the thinking patterns that educational institutions are interested in its development among students because of its many advantages. It is important to avoid hasty and impulse decisions and helps to give the best shot by taking full advantage of whatever knowledge, information, and skillset being possessed. While creative thinking is a different pattern of thinking which is a flexible thinking with the ability to change the state of mind, by changing the situation and the trend of ideas depending on the situation. It involves looking out for new ideas and concepts based on your past learning and life experiences. Critical thinking is a higher order, well-disciplined thought process, which involves the use of cognitive skills like conceptualization, interpretation, analysis, synthesis and evaluation for arriving at a valid, unbiased judgment. It is explained in details in the next section.

Critical Thinking

Critical thinking is one of the important and well-known thinking skills. It includes sequential and organized skills or steps which shape critical thinking. Most researchers agreed on these steps (skills) as they are the scientific steps, which the learner follows, so that its application to it is like scientific research in studying the problem and finding the final solution to it. Critical thinking is the thinking that makes the learner subject the information to analysis, sort and test to determine a suitable level of information in order to distinguish between wrong and sound ideas (Atiyyah, 2015).

Critical thinking was defined by (Watson and Glaser, 1980) as an ongoing attempt to test facts and opinions in the light of the evidences on which they are based. This includes logical search methods that help to determine the value of various evidences, arrive at logical results, test the validity of results, evaluate discussions objectively, formulate assumptions and interpret data (Huitt, 1998). Also, Beyer (1985) defined it as a process of ascertaining the reliability of the facts to highlight its importance and the accuracy of its credibility in judging matters.

The researcher considers critical thinking as one of the thinking patters that receives higher attention and focus from researchers. Critical thinking follows educational steps in a right sequential way and leads the students to be skilled researchers who follow educational steps in a suitable manner from assumptions to collecting information and data and testing it on educational bases. After that, they may subject these assumptions to scientific testing and presenting them to professionals and experienced people to take their opinions on the gotten results. Finally, they will get the results of the educational sequential steps.

Beyer (1985) and Saadah (2014) mentioned the most important characteristics of critical thinking, which include:

1. Critical thinking is a positive activity that produces creativity. To illustrate, people who think critically know that they are creative and have the ability to change their lives.

2. Critical thinking is a process and not an output or outcome, it is scientifically responsible for the interpretation of events, and the doubt of global realities makes us rethink of some statistical results.

3. Critical thinking varies according to the contexts in which it occurs; critical thinking can be observed and inferred directly in the external actions of some people, while some other people use internal critical thinking and they express it through their writings or conversations with others.

4. Critical thinking can be influenced by positive and negative situations; whether the events are painful or pleasant, they will leave effects and traces on the person that will make him/her think critically about how the events run, where negative and positive events influence and stimulate their personalities.

5. It is an emotional-rational thinking: Emotions are the center of critical thinking, and we have the ability to change our lives, which gives us a sense of confidence and reassurance.

6. It is a realistic thinking and requires the use of standards, such as accuracy and relevance, and the issuance of judgments in consistence with the standards of logic, the essence of critical thinking may play its role when facing problems. The essence of critical thinking may play its role when confronted with problems and real questions to reach judgments and determine assumptions.

The Relationship between Multiple-Intelligence and Thinking Patterns

The researcher believes that there is a relationship between multiple-intelligence and thinking patterns. That is what many researchers and psychologists in their studies and researches showed, no researcher or student can deny that relationship. Intelligence does its role through thinking and affects it, and through intelligence thinking skills can be updated, growing thinking skills needs high intelligence from the individual.

Al-Sorour (2003) stated that thinking and intelligence are connected to each other and are fundamental to the learning process. Intelligence depends either on genes or early education or a combination of both. In addition, thinking is the skill practiced by intelligence through experience-based activities. This is the true relationship between intelligence and thinking.

The researcher sees that critical thinking must be integrated into the curriculum, and that it must be taught in schools. Students must know the critical thinking steps

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because they benefit their practicing and learning lives and make them aware thinkers of what happens around them. The teaching strategies must include these critical thinking. Training students in the steps of critical thinking, such as making assumptions, collecting and experimenting data, and arriving at results makes them successful researchers and thinkers in the future. Critical thinking can be taught in different ways and methods. Teachers must include critical thinking in their teaching methods and not teach in the traditional or old-fashioned way of teaching because information change from time to time but teaching students in new ways will stimulate the students' thinking skills that will definitely help them in the future.

Teaching thinking helps students to discover how to use their multiple intelligences in the taught lesson. Teaching students the practical applications needed to enhance and improve the weaknesses in their intelligence abilities and give them the opportunity to use their different types of intelligences in the classroom. It is also important to create strategies to help them translate their knowledge into forms of intelligence and conduct special events for students to discover their multiple intelligences and help them perform exercises to learn how to activate each type of intelligence.

Research Design

The current study uses the descriptive approach. The descriptive approach explains and describes what is really happening, and is concerned with the conditions and relationships that exist, prevailing practices, current procedures and processes, beliefs, different viewpoints and individuals 'directions about an issue. Descriptive research includes surveys and exploratory interrogations in different fields. The primary goal is to describe the current state of a phenomenon. Therefore, the researcher compares the differences between groups or the relationships between them and the variables in this type of research differ in type more than in the amount (Allam, 2001).

Also, this study has used the Structural Equation Modeling Method (SEM). It depends on a descriptive model of the relationships between different variables being studied, is one of the best descriptive statistical methods that can be used in analyzing the correlation coefficients between the variables to direct or indirect effects. In addition, the evaluation of the relative importance of the independent variables in determining or interpreting the total differences of the dependent variable becomes clear when it is studied within the framework of the structural equation modeling. (Sahrawi & Busalb, 2016)

Sampling Method

The study sample consisted of 350 secondary level students studying in private schools in Abu Dhabi. Table (2) below shows the distribution of the study sample in Abu Dhabi private schools.

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Table (2)

The Numbers of Tenth Grade Students in Abu Dhabi[1]

School name	No. of males	No. of females	Total
Al-Rawafid	40	60	100
Al-Shuhub	0	35	35
Al-Mamurah	0	50	50
Al Bateen (Aldar Company)	60	50	110
Gling (ADNOC Corporation	100	55	155
Total	160	190	350

Research Instruments

The following instruments were used in this study:

Howard Gardner's Multiple-Intelligence Survey Instrument: The researcher found that Gardner scale is best suited to measure multiple intelligences, where many studies have used this scale, including: (Al-Jawaldeh, Al-Qamish, & Muqableh, 2011; Al-Shami, Nubi, & Al-Hamad, 2013; Rayyan, 2013; Armstrong, 2008). The scale consists of eight types of intelligence which are, linguistic, logical, interpersonal, intrapersonal, musical, spatial, naturalistic and bodily-kinesthetic.

Thinking Patterns Scale: The researcher found the scale of Torrance's test which was standardized by (Muhammad Thabet Ali Al-Din) as well as the scale of (Ahmed Al-Mutairi) who developed it with reference to the study of (Alhamuddin & Bukhori, 2016). In addition to the scale of (Farouk Abdel Salam and Mamdouh Suleiman) which was standardized by (Afaneh, 2005). It is best suited to measure thinking patterns, as many studies have used this scale. The scale consists of three dimensions, namely critical thinking (recognition of assumptions, interpretation, evaluation of arguments and deduction), creative thinking and visual thinking (successive matrix, visual symmetry, visual succession, and visual object recognition). The point-scale used are (yes, no, strong, weak, true and false).

Research Findings

The results showed significant positive relationship between multiple intelligences (IV) and thinking patterns (DV) through critical thinking (MV). Direct relationships were found between linguistic intelligence (IV) and thinking patterns (DV) (r=.284); social intelligence (IV) and thinking patterns (DV) (r=.241); natural intelligence (IV) and thinking patterns (DV) (r=.113); musical intelligence (IV) and thinking patterns (DV) (r=.270); bodily-kinaesthetic intelligence (IV) and thinking patterns (DV) (r=.470). The result of data analysis indicated the influence of critical thinking on the

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[1] Author's conceptualisation

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relationship between multiple-intelligence and thinking patterns.

Then, the outcome of Sobel test analysis and two tail probability value revealed similar findings to that of structural equation model analysis on mediating role of critical thinking in the relationship between Musical intelligence and thinking pattern. The result revealed that critical thinking skill (β=0.268, P=0.0000) mediates the relationship between musical intelligence and thinking pattern. Similar Sobel result was also obtained for bodily kinesthetics. Critical thinking skill (β=0.268, P=0.0000) mediates the relationship between bodily kinesthetics intelligence and thinking pattern. The outcome of Sobel test analysis and two tail probability value revealed similar findings to that of structural equation model analysis. This suggests that critical thinking (β=0.268, P=0.0175) mediates the relationship between verbal linguistic intelligence and thinking pattern of students. Thus, it can be concluded that verbal linguistic multiple intelligence indirectly influences thinking pattern. Similarly, Sobel mediating test shows that critical thinking (β=0.268, P=0.0322) fully mediate the relationship between interpersonal intelligence and thinking pattern. In addition, Sobel mediating test shows that critical thinking (β=0.268, P=0.0426) mediates the relationship between Natural- intelligence and thinking pattern.

The Sobel test was necessary to uncover whether the mediator variable transfers the significant influence of the independent variable to dependent variable. Sobel test was mainly used to check whether the indirect effect of the independent variable on the dependent variable through the mediator variable is significant. The outcome of Sobel test analysis findings suggests that critical thinking skills mediate the relationship between two multiple intelligence factors—musical intelligence and bodily-kinesthetics.

Discussion

The results show that the path coefficient of direct between these two variables was of practical importance and statistically significant. This indicates that multiple intelligence factor—interpersonal, intrapersonal and verbal linguistic intelligence significantly influence students' critical thinking skill. Previous literatures have revealed that interpersonal, intrapersonal and verbal linguistic intelligence of students have effects on critical or innovative thinking capacity of individual thinking skills of students (Askooly, 2009), while some studies such as (William, 2006) did not find any direct influence of interpersonal, intrapersonal and verbal linguistic intelligence on critical thinking skill. There is evidence showing the direct effects of interpersonal, intrapersonal and verbal linguistic intelligence on critical thinking skill (William, 2006). On the other hand, musical, spatial, natural bodily kinesthetic and logical intelligence have been found to have direct influence on critical thinking skill (Abu Mahadi, 2011; Al-Tamimi, 2015). This is true when teacher wants to work on the thinking skills of students, he/she must take into consideration the student.

The results also showed that the path coefficient of direct between critical thinking

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and thinking patterns variables was of practical importance and statistically significant. This indicates that critical thinking skill significantly influence students' thinking pattern. Literatures have revealed that critical thinking skill of students have effects on thinking pattern of students (Gardner (1996), while some studies such as (Nishimura, Okada, Inagawa & Tobinaga, 2012) did not find any direct influence critical thinking skill on thinking pattern. There are evidences showing the direct effects of critical thinking skills on thinking patterns (Atiyyah, 2015).

The research model base on multiple intelligence and thinking pattern, was proposed and tested with data collected from secondary school students. This study produced an adequate structural model using path analysis. The results demonstrated that verbal linguistic intelligence has a positive indirect effect on thinking pattern via both creative and critical thinking skills. Also, bodily-kinesthetics was observed to have positive indirect influence on thinking pattern via creative and critical thinking skills. While interpersonal intelligence has a significant and positive indirect influence on thinking pattern via creative and critical thinking skills. In addition, an indirect significant influence was also found between intrapersonal intelligence and thinking pattern via creative and critical thinking skills. The study supported the existing perspectives that multiple intelligence factors through creative and critical thinking skills determines the thinking pattern of students.

Conclusion

This study has added a new perspective to current literature on multiple intelligence in teaching and learning by testing the mediating effect of critical thinking. The results of this study have demonstrated a strong and positive relationship between the predictors and criterion variables. Multiple intelligence factors--verbal linguistic, bodily-kinesthetics, intra and interpersonal intelligence, logical, musical, and natural intelligence indirectly influence thinking pattern through critical thinking skills. Thus, it can be asserted that multiple intelligence had a significant and positive indirect influence on thinking pattern via critical thinking skills. Hence, it can be concluded that the proposed model supported causal relationship between multiple intelligence factors, critical thinking skills and thinking pattern of students in school.

It is recommended to conduct further studies on multiple intelligences, thinking skills, and thinking patterns applied on different academic levels. It is also important to study the relationship and linkage between the study variables and other variables such as learning styles and educational subjects and curricula to prove the necessity of including multiple intelligences and thinking skills & patterns in school curricula, textbooks and class activities.

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Augmented and Mixed Reality in Language Learning

Panagiotis Panagiotidis

Abstract

The use of Extended Reality technologies in education, and especially in language learning, has attracted the interest of language experts for the last 15 years. However, the recent technological progress as well as the simultaneous dramatic reduction of the cost of the necessary hardware has led to an impressive growth of the XR market, creating, thus, new perspectives concerning the adoption of XR technologies in education. The educational XR market is also growing very fast, not only thanks to the offer of innovative applications, but also due to technological developments in network technologies. Advances in wireless and cellular networks can make XR experiences more immersive and more accessible to local and remote users. This paper aims to present the current developments in the field of utilization of Augmented (AR) and Mixed Reality (MR) technologies in language education and to explore their future perspectives. Towards this end, AR/MR technologies, the theoretical bases of their use in language education, as well as the available for each technology hardware and software solutions are presented in more detail. Examples of AR/MR technologies in language learning applications, as well as the conclusions drawn from the literature review concerning the benefits and limitations AR/MR applications in language learning will also be presented. Finally, market data and future research directions will be discussed, in order to identify the perspectives of these technologies in language learning.

Keywords: extended reality, augmented reality, mixed reality, immersive technologies, language learning, motivation

Introduction

The term "Extended Reality" (XR) is an umbrella term that covers a variety of simulation-based technologies such as Augmented Reality (AR), Virtual Reality (VR), Mixed Reality (MR) and Holography (HG) that either blend the physical environment with the virtual or are able to provide fully immersive virtual experiences (Pomerantz, 2019). In order to describe the full spectrum of these technologies, Milgram & Kishino proposed quite early, in 1994, a "virtuality continuum" that spans between an entirely real environment -the physical world-, and an entirely virtual computer-generated environment. The various technologies described by the general

term XR, can be placed on this "real-to-synthetic" axis, depending on the environment they create for the user, the equipment in use, the degree of immersion they allow, and the interaction they offer with the environment.

The two most important and, at the same time, distinct technologies are AR and VR. AR refers to the real-time combination of digital and physical information by overlaying physical objects and places with virtual content), while VR creates a complete, artificial, virtual environment (Hein et al, 2021).

Implementation of XR technologies in education is not new. During the last two decades, XR technologies have been tested in several subjects, including language learning. However, technological progress and more specifically the huge increase in computing power, advances in graphics and display technologies that are necessary for the creation of appropriate immersion systems, the evolution of mobile devices and technologies, as well as the simultaneous dramatic reduction of the cost of the necessary hardware, create new perspectives concerning the adoption of XR technologies in education.

According to the Horizon Reports of the last 4 years, XR technologies are among the most important technologies that will generally be adopted in education in the very near future (Adams Becker et al, 2017; Adams Becker et al, 2018; Alexander et al, 2019; Brown et al, 2020).

In this paper, the theoretical bases of Augmented and Mixed Reality use in language education, as well as the available for its technology hardware and software solutions, are presented in more detail. Examples of AR/MR applications, as well as the conclusions drawn from literature review concerning the benefits and limitations of their exploitation in language learning, will also be discussed.

Theoretical background

AR/MR applications are usually trying to adopt a game-based approach, in order to offer users a useful learning environment and, at the same time, the motivation to use it. Gamification, or as Kapp (2012:10) describes it "…using game-based mechanics, aesthetics and game thinking to engage people, motivate action, and promote learning", is not a novelty in language education. However, AR/MR applications, in combination with advances in mobile technologies, offer new possibilities in language learning (Holden & Sykes, 2011; Dunleavy & Dede, 2014; Ibrahim et al, 2018). Sydorenko et al (2019) believe that digital games, especially designed to fit the conceptualization of a task, may provide useful environments for social interaction and language learning.

AR applications are obviously based on pedagogical theories such as mobile learning, informal learning, game-based learning and also task/project-based learning can also support self-learning in everyday contexts. According to Dunleavy & Dede (2014),

situated learning and constructivist learning theories are the two evident theoretical foundations for AR technology.

Khoshnevisan & Le (2018) as well as Hadid et al (2019) believe that AR can facilitate multimedia learning as it creates an interactive learning environment in which learners can better understand the real world with the presence of multimedia helping as scaffolding, background knowledge activator, motivator, and facilitator. AR enhanced environments, with the aid of superimposed materials, can provide learners with experiences that are similar to real life. Furthermore, AR is a suitable technology for contextual learning because it can be used to contribute context-specific, just-in-time information in an interactive manner.

According to Godwin-Jones, R. (2016), there is an obvious connection between AR and current theories of second language acquisition which emphasize localized, contextual learning and meaningful connections to the real world. Parmaxi & Demetriou (2020) have also arrived in conclusions concerning the theoretical and pedagogical support of the AR applications dataset in their research. They found that the sociocultural (9%), situated (9%), experiential (5%) and constructivist (5%) learning theories, which are all closely linked to the learning-by-doing paradigm, seem to gain researchers' interest. However, they also noted that the majority of the studies under investigation are left with no theoretical grounding (46%).

Augmented Reality (AR)

Unlike VR, which creates a completely isolated synthetic environment, AR technology enhances the existing real world by adding digital objects to it in ways that make users believe those objects actually exist. Several researchers in the field, such as Azuma et al (2001), Klopfer & Squire (2008), Yang & Liao (2014), and Blyth (2018) have proposed definitions for AR. A commonly accepted definition of AR is that of Azuma (1997) who defined AR as an emerging technology that allows computer-generated virtual imagery information to be superimposed onto a live direct or indirect real-world environment in real time. Carmigniani et al (2011: 342) define AR as "...a real-time direct or indirect view of a physical real-world environment that has been enhanced / augmented by adding virtual computer-generated information to it". Other researchers also consider that AR technology is augmenting the sense of reality and can be thought of as a bridge between the virtual and the real world (Solak & Cakir, 2015; Lee, 2012). In AR the environment is real but extended with virtual elements or information (text, image, video, sound, animation) superimposed upon, or composited with, the real world. It must be noted that those virtual objects are static overlays above the physical world and can be automatically superimposed in any real background such as objects, landscapes, or books, without the need for an action /intervention of the user (i.e., by clicking).

AR hardware & software

AR can be experienced via advanced HMDs such as the Microsoft Hololens or smartglasses such as the -now discontinued- Google Glasses. However, most AR applications are designed to run on mobile devices that go wherever the user goes. The majority of studies support that mobile devices are considered the ideal platform for AR applications (Liu, Tan, & Chu, 2007; Holden & Sykes, 2011; Arvanitis, 2012; Liu & Tsai, 2013; Khoshnevisan & Le, 2018). The latest generation of smartphones disposes a vast range of mechanisms, sensors and technologies that makes them able to support XR applications: they have advanced user interfaces and can be operated by touch, gesture and voice, they are location-aware, thanks to inbuilt GPS receivers, and they have built-in compasses, gyroscopes and accelerometers, they support Bluetooth, RFID and NFC connections, they have all kind of input mechanisms such as cameras, microphones, OCR, QR codes and other augmented reality (AR) markers (Reinders & Pegrum, 2016) as well as visual, auditory and haptic output modes (vibration). Thanks to these possibilities, today's mobile devices can help the user perceive the reality around him in a new way by the overlay of varied digital information (Ong, Shen, Zhang, & A. 2011)

By viewing an object through a mobile device camera, the user is exposed to enhanced virtual layers placed over the real object. As soon as the user's camera points at the predefined trigger, namely an image or object, augmented media (e.g. video, 3D, and animation) are sent to the mobile device from an online database. Azuma (1997) believes that augmented reality is not limited to the sense of sight but might have application to the sense of sound as well. AR could be used to augment the sight of blind users or users with poor vision using audio cues, or augment hearing for deaf users using visual cues. Similarly, AR could be used to augment the sense of touch, using haptic sensors. Gloves with devices that provide tactile feedback could augment real forces in the environment.

There are currently two types of AR systems: Markerless and marker-based AR (Johnson et al, 2010; Lee, 2012). However, the terms location-aware or place-based AR and Vision or Image-based AR are also used in literature (Dunleavy & Dede, 2014). Markerless or location-based AR applications use positional data, such as the GPS and the compass or image recognition, to determine the locations of its users and then guide them to a specific location. Once users reach the location, they can interact with superimposed elements such as images, videos or 3D objects and experience a reality augmented with resources, information, tasks, or prompts (Carmigniani et al., 2011; Thorne & Hellermann, 2017). One of the most well-known location-based AR applications is the Pokemon Go, an AR game developed by NINTENDO in 2016, which detects players' locations and allows users to collect Pokemon monsters in different locations based on GPS sensor. Marker-based AR systems are based on image recognition and predefined markers as triggers to display AR content. Users must point the smartphone camera to perceive a specific visual cue to trigger AR actions.

Once the device recognizes the marker, the AR app overlays the digital data on top of the augmented object.

AR can also be used to augment print media by superimposing 3D rendered models. Newspapers, magazines or books can be loaded with marker or trigger images that mobile devices with camera tracking AR applications can augment with audio, video, hyperlinks, images, social media feeds or HTML5 content from the web. In that case, printed material can be read normally, but if someone looks at the pages through a handheld AR display, they see three-dimensional models appearing out of the pages.

There are several SDKs (Software Development Kits) and platforms available for the development of AR applications. The most widely used are ARKit, Apple's SDK for iPhone and iPad, ARCore, Google's own SDK, Vuforia, which is one of the largest AR developer communities online today, Wikitude, which allows users to build augmented reality worlds on basis of HTML and JavaScript, ATOMIC Authoring Tool, a front-end for the open-source project ARtoolkitX, EasyAR, Lumin, Magic Leap's AR SDK for Unity, and Mixed Reality Toolkit (MRTK) for HoloLens and other Windows-based Mixed Reality headsets. When it comes to language learning applications, a research carried out by Parmaxi & Demetriou (2020) showed that Vuforia, ARIS (Augmented Reality and Interactive Storytelling) and HP Reveal (former Aurasma), gained researchers' preference for the development of mobile-based AR. ARIS is an open-source platform for creating GPS based AR enhanced learning games with storytelling structure, designed to be used by nonprogrammers, although customization and interactivity can be reached through HTML and JavaScript. ARIS is the platform used by several successful projects such as Mentira, Paris Occupé, ChronoOps and Hiroshima game (Perry, 2015; Godwin-Jones, 2016). HP Reveal / Aurasma, the most widespread AR platform with almost 100,000 global users and the most popular AR app among language educators, was shut down in 2020. This app used images or QR code (as triggers) and object recognition technology to activate AR content. In addition, it was possible to use a geographical location to create triggers from physical objects.

There are also several other AR platforms available which are potentially exploitable for educators as they allow users to select and design their own triggers and augmented overlays. Layar is based on printed materials and uses the GPS location to show what is nearby by displaying real time information on top of the image on the mobile's camera. Blippar lets users look at real-world objects enhanced with text, music, games and digital graphics through their smartphone camera and is also a platform that allows you to create and publish AR. ZooBurst is another popular educational digital storytelling tool, as it is designed to let anyone create their own augmented reality 3D pop-up books easily (Mahadzir & Phung, 2013). Other systems are buildAr, TaleBlazer, Actionbound and Arloopa, which is recently gaining popularity as the successor of Aurasma.

Examples of AR applications

Several studies have proposed the development of AR systems to improve language learning. In 2004, Ogata, Akamatsu & Yano (2005) developed TANGO, a system capable of detecting objects around learners and provide object-related language learning materials by RFID technology. In 2007, Liu et al (2007) created HELLO, a 2D barcode, handheld, AR-supported English learning environment, aiming to enhance students' language skills. HELLO was part of the "My Campus" course and consisted of an English learning management system and a mobile learning tool. The evaluation results showed that HELLO and the proposed learning activities could increase students' motivation to learn, provide enjoyable and effective English learning experiences, and improve the students' English listening and speaking skills Liu et al, 2008). Two years later, Holden & Sykes (2011) presented Mentira, the first AR place-based game for foreign language learning. Mentira was developed at the University of Wisconsin-Madison for Spanish language courses using the open-source ARIS platform. Results showed that playing the game increased students' motivation and awareness of pragmatic issues in Spanish. Perry (2015), inspired by Mentira, used ARIS to create Explorez, a place-based game directed towards the acquisition of French language skills. Explorez transforms the University of Victoria, B.C. campus into a virtual francophone world where students improve their French language skills by interacting with characters, items, and media in their quest through the campus. Another example of a place-based game is Paris Occupé, a series of role-playing (RPG) games, which allows learners to experience a simulation of life in Nazi-occupied Paris in the French language (Blyth, 2018). It is also worth mentioning LangAR, a foreign language phrasebook based on wikitude, developed in 2013 by the Future Technologies group at Pearson, to promote real-time contextualized vocabulary learning (Godwin-Jones, 2016), and ChronoOps, a quest-type mobile place-based AR game, which is currently available in seven languages (Thorne, & Hellermann, 2017). The global success of Pokémon GO has inspired language experts, who found different aspects of the game suitable for language learning (Schrock, 2016). A similar concept is adopted by ImparApp, a location-based mobile game developed in Coventry University with MIT's game-authoring tool TaleBlazer, to offer tasks and challenges in Italian language (Cervi-Wilson & Brick, 2018)

Several AR language learning studies were based on the very popular apps AURASMA / HP Reveal. Scrivner et al (2016) developed a beginner's level Spanish course, Taskiran, (2018) designed four different games to promote learners' skills in English, Yang & Mei (2018) created an AR-based animation guide to help their students learn Japanese orthography with their mobile devices, and Allagui, (2019) used HP Reveal to facilitate EFL students' writing performance.

Many AR applications have been developed to investigate the promotion of all language skills. Parmaxi & Demetriou (2020) found that vocabulary represents the most investigated topic area (23.9%), followed by reading (12.7%), speaking (9.9%)

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and writing (8.5%), whilst a substantial number of manuscripts focused on generic language skills (9.9%). Liu & Tsai (2013) designed AR-based mobile learning material about scenic spots to provide linguistic and content knowledge in English composition for the participants. Seedhouse et al (2014) created the marker-based app "European Digital Kitchen project" which allows learners to collaborate in English language learning tasks. Dalim et al (2016) created TeachAR, an AR tool which uses Microsoft Kinect's speech recognition to teach basic English words (colors, shapes, and prepositions) to children for whom English is not a native language. TeachAR was developed using the Unity game with the ARToolkit for Unity plugin and is also available in a non-AR version which works with mouse clicks. Dita (2016) proposed an AR app that uses the camera of the mobile device and text recognition to identify written texts. Krystalli et al (2020) used Blippar to develop an AR app based on augmented Greek buildings and spaces of cultural interest for the improvement of speaking skills and the pronunciation of students in the French language. Draxler et al (2020) developed an AR app for the learning of gram¬mar through dynamically created quizzes based on real-life objects in the learner's surroundings. Agata et al (2021) used Unity with the addition tool Vuforia SDK to create an Android AR app with learning media and English quizzes based on the "Thematic English Learning 1" book to enrich students vocabulary.

Another implementation of AR technology which is becoming more and more popular is Enhanced textbooks, or 3D pop-up books. Zooburst is an educational digital storytelling tool, frequently used for such interactive books (Mahadzir, & Phung, 2013). Hadid et al (2019) developed "Reader Buddy", an app which uses triggers or QR codes to augment textbooks. Finally, several applications covering other aspects of language learning such as TranslatAR, a mobile AR translator, have also been developed (Fragoso et al, 2011).

Mixed Reality (MR)

There is not a clear definition for mixed reality, as the term is used to cover all extended reality applications that, as mentioned earlier, are lying somewhere on the con¬tinuum between AR and VR. Hein et al (2021) define MR as the human-machine interactions generated by computer technology and wearables in combined real and virtual environments. AR and MR systems have the ability to alter human perception as they both augment the real world with virtual objects. The difference is that augmented reality takes place in the real world, while mixed reality is a blend of physical and digital worlds and produces new environments and visualizations, where physical and digital objects co-exist and interact in real time. MR systems may allow users to interact with these objects (Leonard, & Fitzgerald, 2018; Parsons et al, 2019; Al-Gindy et al, 2020). Pomerantz (2019) notes that users can affect the state and behavior of these virtual objects, and these virtual objects may also affect the state and behavior of physical objects.

MR hardware & software

HMDs, with the ability to project a computer-generated environment and, at the same time, a real-world camera view from integrated cameras. Common VR Headsets, such as Oculus Rift S ($599) or HTC VIVE ($799) are not suitable for Mixed Reality, as they do not dispose cameras. MR Headsets leave the natural world completely visible, allowing the user to move around while engaging with virtual and natural objects. Microsoft's Hololens 2 ($3.500) is the most well-known commercially available Mixed Reality device. Hololens 2 is a holographic wearable computer with lenses that project holograms and allows users to interact with both real-world artefacts and virtual artefacts as though they existed in the physical surroundings. Hololens 2 allows for the user's movement in space and adjusts the image accordingly so that it appears to act like a real object (Leonard, & Fitzgerald, 2018). The device offers hands free interaction using natural gestures and a more intuitive perception of the AR experience. Another very advanced MR Headset is the Magic Leap One ($2299). ML1 headset is a wearable computer for enterprise productivity and can support 3D visualization and collaborative co-presence as well as concurrent web apps. Both devices are independent, stand-alone headsets and offer a high level of mobility but they have differences in terms of portability and freedom. The HoloLens 2 is heavier and bigger, as it keeps all the necessary equipment in the headset. The Magic Leap One keeps the computing separate in a portable pint-sized computer connected by a trailing cable. There are other options on the market, such as Varjo XR-3 (€5.495,00) and VR-3 (€3,195,00) headsets which can deliver high-end results, but they need a powerful desktop computer to operate and therefore are not directly competitive with the aforementioned. MR headsets may offer new educational possibilities, not possible with virtual reality (VR) and AR technologies. However, they are much more expensive than VR headsets, and thus, their wider usage in real-classroom contexts seems limited.

MR hardware & software

Mixed reality applications for language learning, are in their majority based on Microsoft Hololens 2. As this device can support both mixed and augmented reality some of the examples presented below could be considered relatives to augmented reality applications.

Based on the HoloLens 2, Leonard & Fitzgerald (2018) developed an educational design research project in a secondary school setting in Australia. Both learners and teachers found the technol¬ogy engaging and promising, although some implementation issues, both technical and pedagogical, have been reported. Vazquez et al (2017) developed WordSense, a Mixed Reality platform designed to facilitate dynamic, markerless embedding of content on physical objects for vocabulary learning. The system was based on Hololens' depth-sensing capabilities, which allowed designers to seamlessly blend reality with content in order to achieve contextual affinity. Ibrahim et al (2018) developed Arbis, a Hololens based

application for vocabulary learning and compared it to a traditional flashcard-based learning approach. Results showed that the immersive AR experience of learning with virtual labels on real-world objects was more effective and more enjoyable for the majority of participants, compared to flashcards. Rzayev et al (2020) developed a Hololens-based application that enables detecting text in the foreign language in the environment and displaying translation for these words. During the study, participants learned vocabulary in the foreign language while reading the words in the real world and viewing the translation on the specified positions using Hololens. Finally, Huynh et al (2019) developed a framework for improving in-situ learning paradigms. The system uses a client-server architecture that allows for real-time labelling of objects in a Hololens that automatically displays the concept(s) associated with an object in the target language and provide a method for both the viewing and selection of a particular term or concept.

Benefits for language learning

Several AR and MR applications, that cover a wide spectrum of hardware specifications, learning design, theoretical bases, and linguistic targets, have been presented in the previous paragraphs. There is a sense that the main target, in an important part of these studies, was the exploration of these new technological means, as a specific pedagogical approach is not easily recognizable. However, there is also a strong conclusion that AR and MR technologies offer several important benefits in language learning. These benefits could be classified in four categories:

Increased motivation, engagement, and participation enjoyment constitute the most widely reported category of benefits in the literature review. Several studies report students' increased motivation to engage with XR technologies and higher levels of interest and engagement in comparison to conventional teaching methods (Perry, 2015; Richardson, 2016; Godwin-Jones, 2016; Taskiran, 2019). AR technologies can also create playful and motivating multimedia training environments (Azuma (1997). Thorne, & Hellermann (2017) believe that AR games increase engagement in the language learning process by moving students and language learning experiences out of the classroom and providing opportunities for communication and language use. Several other researchers found evidence of AR/MR leading to heightened levels of motivation, engagement, and interest (Scrivner et al, 2016; Akçayır & Akçayır, 2017; Rafiq & Hashim, 2018; Khoshnevisan & Le, 2018).

Reduced anxiety is also a benefit that can be registered into this category. Alemi et al (2015) have pointed out that employing technology to assist language learning can reduce students' anxiety and foster their positive attitudes towards the course. Drawing attention (Solak & Cakir, 2015; Jamrus & Razali, 2019), increasing students' learning interest, concentration (Wu et al, 2013; Zhang et al, 2014) and helping students enjoy the learning process (Núñez et al, 2008; Solak & Cakir, 2015) are also some additional benefits worth considering.

The second category includes benefits concerning cultural awareness and language skills. AR applications, in some cases, focus on cultural understanding and awareness, as in the previously mentioned Mentira project on Spanish language and culture (Holden & Sykes, 2011). According to Jamrus & Razali (2019) AR can offer great benefits by offering students an augmented world that they never experienced before due to geographical and cultural differences. However, in AR applications there is usually a more specific linguistic aim. Khoshnevisan & Le (2018) carried out a literature review in 19 papers concerning AR applications on language education. The majority of the studies explored the impact of AR on literacy and on vocabulary. Hein et al. (2021), as well as Parmaxi & Demetriou (2020) in their literature review in integrating AR into language learning, recorded benefits for vocabulary acquisition, writing, reading, speaking, comprehension, pronunciation, and phonics. The most common applications seems to be those targeting at the enhancement or the acquisition of vocabulary. Draxler et al (2020) successfully used geo-location to en¬hance vocabulary learning, Hadid et al (2019) believe that AR make the acquisition of vocabulary easier than traditional methods and Solak & Cakir (2015) found that AR had positive impact on increasing undergraduate students' motivation towards vocabulary learning in the language classroom. There is little or no study regarding the incorporation of AR in skills such as listening, speaking, and writing. However, Jamrus & Razali (2019) mention the studies of Tobar-Munoz, Baldiris & Fabregat (2017) on the use of AR for the development of reading comprehension and of Li, Guo, Zheng and Rau (2018) for the development of reading skills, and Parmaxi & Demetriou (2020) the studies of Tang and Young (2014) for Chinese pronunciation and of Wang et al (2017) who used AR to improve a group of Chinese students' first language writing skills.

The third category includes benefits concerning general learning skills related to language learning. In their review Leonard, & Fitzgerald (2018) found evidence that AR/MR applications lead to stronger interaction among students, between students and learning materials and between students and teach¬ers. Akçayır and Akçayır (2017), Yeh & Tseng (2020) and Parmaxi & Demetriou (2020) arrived at the same conclusion. Another finding deriving from literature review is that AR/MR technology makes learning more long lasting and effective (Solak & Cakir, 2015) and leads to higher productivity and effectiveness in learning outcomes as compared to traditional learning methods (Ibrahim et al, 2018). Benefits such as decrease in cognitive load, improvement in long-term memory retention, collaboration (Leonard, & Fitzgerald, 2018; Ibrahim et al, 2018), and development of learner confidence (Hadid et al, 2019) are also reported in AR/MR literature.

The last category of benefits refers to the 21st Century Skills (4Cs). Several researchers are convinced that XR technologies can enhance collaboration, creativity, communication, critical thinking and problem solving (Dunleavy et al, 2009; Rafiq & Hashim, 2018; Scrivner et al, 2016) as well as students' multimodal literacy (Yeh & Tseng, 2020). Several more studies conclude that AR/MR activities create

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opportunities for critical thinking, collaborative engagement and problem solving by providing location-specific information, prompts and use of multimedia elements (Thorne & Hellermann, 2017; Holden & Sykes, 2011; Perry, 2015).

The value of AR in language learning is undeniable, as they offer several benefits at cognitive, academic, and linguistic level. However, skepticism is also expressed. Cheng and Tsai (2013) as well as Khoshnevisan & Le (2018) believe that the technical complexity of AR technology and the demanding learning tasks could lead to increased cognitive load and therefore to loss of motivation. Wu et al (2013) consider that students who apply AR in their learning may be cognitively overloaded by the large amount of information and the necessary simultaneous use of multiple technological devices. Dunleavy & Dede (2014) also consider increased cognitive overload as a possibility that comes with AR use. Finally, Jamrus & Razali (2019) fear that distraction from learning may be a problem, as the students may pay more attention to the virtual and augmented information rather than the real education content.

Conclusion and future perspectives

According to MarketWatch (2021, May 27) global demand for XR (VR, AR and MR) will grow by 45.0% to reach $346.39 billion by 2026. Global XR production was valued at $25.4 billion in 2019 and is expected to grow by 46.5% annually over 2020-2026. The educational XR market is also growing very fast not only thanks to the offering of innovative applications but also due to technological developments in network technologies. Advances in wireless and cellular networks, such as Wi-Fi 6 (802.11ax) and 5G, will make XR experiences more immersive and more accessible to both local and remote learners.

As the cost of equipment decreases, the future of AR/MR technologies in education, and particularly in language learning, seems very promising. For some researchers, a future lighter and smaller "always-on" AR headset, capable of being worn and used all day, much like current smartphones, could be imagined (Ibrahim et al, 2018). Such an AR system could seamlessly provide the user with the foreign-language terms describing objects (or later possibly even processes) in their own physical environments. Huynh et al (2019) push the idea a step forward by imagining the combination of the system with vital sensors such as eye-trackers which can monitor the physical and mental state of the user, similar to the health sensors included in smartwatches. They argue that continuous monitoring of users' cognitive response when consuming educational content may provide the ability to gauge the user's current understanding of the foreign language. This information could be processed by a -future- machine learning classifier that could detect whether a user understands or is confused about a foreign word.

As research in both XR hardware and software is underway, similar attention should be paid to research on the pedagogical exploitation of these technologies. It is obvious

that innovative instruction design is one of the main factors required for successful application in language education. AR/MR applications must adopt an inspired student-centered, instructional design, with emphasis to guided and collaborative interaction, and activities that combine formal and informal learning, in order to place students in meaningful, real-life situations.

It is certain that innovations such as these should be answered after implementation in real educational settings. Therefore, research and exploration of the vast potential of AR/MR technologies in language teaching and learning must be continued in order to create new learning opportunities and practical benefits for learners.

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EFL Corner in Algeria: Single-Sex vs Co-Educational Schools

Faiza Haddam Bouabdallah

Abstract

Nowadays, English is significantly popular among Algerian generation but not to such an extent to be used in social context. Its use is, however, limited to classroom environment except for those students who are fond of this foreign language and master it with a high level of fluency. The purpose of this paper is to highlight the status of English as second foreign language in Algeria, and how it has been injected within the educational system by taking into consideration social and cultural aspects. Education is a process and like other processes, it is exposed to several factors, some of which are aid and some others are obstructive. The type of school can be one of these factors that may affect teachers and students: Single-sex or coeducational schools. Algeria is a country that still offers different types of schools that have great impact on pedagogy and on learners' performance in the EFL context due to social and cultural impacts.

Keywords: Algerian context – EFL students – single-sex and co-educational schools

Introduction

Today English is not leading the world only through the increasing number of its speakers; however, its dominance reaches different domains including Education, Business, Politics, Science and Technology. Algeria has recently been in tune with Globalization, therefore the government tends to give more importance to the global language. Moreover, English has started to be recognized within the Algerian society especially among young generation impacted by the use of different social media. Thus, countries that want to join the ranks of developed nations have no way to do that except through attention to education and teaching system. Algerian educational system is shaped by several factors, the type of schools is among them: Single-sex or coeducational schools. These two different learning situations may affect teachers and students either positively or negatively.

Therefore, Algerian educators have to cope with different learning/teaching situation by taking into consideration the social and cultural aspects. In this regard, the main objectives in this research are threefold. The first one is describe the status of English language in Algeria. The second one is to scrutinize whether school type influences EFL teachers' performance. The last one is to highlight the ways by which educational

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psychology supports EFL teachers to enhance their quality of teaching in different situations.

Nowadays, the English language occupies such a global position that covers various world perspectives mainly communication, education, science, economy and culture that is why, English were implemented by Algerian policies within the educational system. Presently, it gains its status as a Second Foreign Language (FL2); however, the government started to give more importance and shed light on this global lingua franca to gain a new and higher status in Algeria as a First Foreign Language (FL1).

Therefore, one of the pillars of educational processes is the teaching process through which the student is provided with knowledge and experiences, but its role does not stop here only, but goes beyond that to develop the abilities, aspects of learners, and here the role of educational psychology. The teaching process in general, and the teacher in particular, are exposed to several influencing factors, as studies confirmed that there is an educational gap between the male and female category, and this is what was confirmed by educational psychologists at the American Johns Hopkins Institute.

Theoratical Background

Historical Background of the Linguistic Situation in Algeria

There have been a set of events that characterized the history of linguistic situation in Algeria. During French colonization, Algeria has witnessed a chaotic language planning that aimed to eliminate both mother tongue (Arabic) and the culture of Algerian population and replace them with the French one. However, immediately after independence the government started a set of reforms implementing different policies especially within the field of education in order to retrieve the value of Arabic as well as Arabo-islamic culture. It was such a decision in which the English language were injected into the educational system aiming to reduce the status of French in Algeria.

The Status and Spread of English in Algeria

After the Arabization reforms in 1971 and the financial changes occurring around the world, the role of English as a conveying vehicle increased more space inside globalized Algeria. Therefore, starting from 2013, the use of French begun to blur away at the cross-streets leaving more space to English among young generation. (Mami, 2013, P. 910).

It is clearly understood that the phenomenon of Globalization has a great effect on the Algerian nation. In this regard, English tends to gain more power and importance in Algeria thanks to its global status instead of French. According to Rezig (2011, P. 1330), by 1993, the government attempted to give the opportunity to young children to learn English in the primary schools in addition to French as a Second Foreign Language. The process was to give choice to pupils between French and English.

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However, the process did not cover all the primary schools since the primary statistics showed that French was the preferred language among parents. To sum up, at the beginning of the 90s, English was considered as a FL2 and as FL1 after the 2000 reform (Mami, 2013), to gain later the status of language of science and technology (Berrabah, 2014) used as a medium of instruction in some faculties in Algerian universities in recent years.

Single-sex and coeducational schools

Since the school environment, and more specifically the type of school, influences students' academic accomplishments, it may also have an impact on teachers' performance. The type of school can be determined based on the gender composition of the students, whether it is a single-sex school or a mixed school.

As for single-sex school "single-sex education refers most generally to education at to elementary, secondary, or postsecondary level in which males and females attend school exclusively with members of their own sex"(Mael at al,2005, P.1).Accordingly, single-sex school is designed for specific gender only, be it male or female. Concerning mixed schools, also known as coeducational schools, are an integrated educational system where both sexes are taught together in the same institution. (Spender & Karamarae, 2004).

Advantages and disadvantages of single-sex and coeducational schools

From the above-mentioned definitions, it is essential to discuss the advantages and disadvantages of both types of schools. There are numerous advantages to single- sex schools, which outweigh its drawbacks. One of the benefits stated by Finn (1980), is that single-sex schools promote higher academic achievement and social solidarity based on a shared gender identity (cited in Radford,1998).In addition to that, students in single-sex schools receive more attention and guidance from their teachers. Furthermore, students' experience in single-sex classrooms improve their performance and confidence by allowing a better match for teaching and learning (McNeil, 2008).

Another advantage is that students tend to express themselves more during discussion group, as they are not intimidated by the presence of the opposite sex(Spielhagen,2006); especially girls as they "feel less inhibited and devote more time to academic work"(Spender and Karamarae,2004, P. 522). Single-sex school not only stimulates students, but also their teachers; as it gives teachers the opportunity to focus more on teaching and learning and less on conflict between students. In addition, single-sex classes become a safe environment where bullying, violence and distraction are reduced (Blair & Sandford, 1999).Therefore; students get more involved and participate in the work proposed by their teachers. The latter will be more creative and innovative in their educational activities (Rex & Chadwell, 2009).Single-sex education is not without its disadvantages, however. According to Guarisco (2010), single-sex schools cannot prepare students for real world situations

(cited in Ogden, 2011).Moreover, single-sex schools exacerbate gender stereotypes and inequality. In single-sex schools, students promote poor social skills.

Apart from what has been stated, there are several advantages of coeducation schools. One advantage is that coeducational schooling provides a natural social environment. Another feature is that coeducational schools are committed to treat boys and   girls equally.(Spender & Karamarae,2004).Additionally, Sather (2005, P. 215) claims that ''competition between sexes is greater than between same-sex rivals, and this competition leads to higher standards of academic achievement''. Conversely, as a downside of coeducational schools, the different sexes may distract each other.

Another drawback, coeducation ignores the existence of gender differences in interests and aptitudes (Schneider & Coutts, 1982).From Lorenzi-Cioldi's (1988) point of view, stereotypes in mixed classes are reinforced. Girls are likely to be interested about their image, and boys are likely to impress girls. Finally, coeducation may adversely affect students' academic achievements because both genders' interest may be more dependent on non-academic factors rather than on academic achievements. (Coleman, 1961).

Pratical Side

Research design

To address the research objectives, the researchers opt for the exploratory research. The current research work employed both qualitative and quantitative methods as well as a combination of primary and secondary sources. As for data collection, two research instruments were used: the ''teachers' questionnaire'' and the ''inspectors' interview''.

Teachers' profile

The investigation covered a sample of 23 teachers, males and females, working in three single-sex schools namely: Ibn Kheldoun, Elmakarri, and Salima Taleb middle schools situated in Tlemcen (West Algeria), wherein they teach English as a Foreign Language (EFL). These teachers have had teachers experience in both types of school i.e. single-sex and coeducational schools. Those teachers obtained their degrees from diverse institutions: sixteen of the participants graduated from university and seven of them have received a training course from ITE (Institut Technique de L'enseignement).

Inspectors' profile

The interview was conducted with three inspectors males and female in the secondary school « Motkan Ibn Saad » situated in Tlemcen which is also teacher training center, and all of them were teachers for more than ten years in both types of school i.e. single-sex and coeducational schools. All the inspectors obtained their degrees from university of Tlemcen "Abou Bekr Belkaid University". They also

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received a training course from Education Inspectors Training Center in Algiers for one year.

Discussion of the main results

This section will spotlight on discussing the main results that emerged from the teachers' questionnaire and inspectors' interview. The analyzed data do not reveal any significant differences between single-sex and coeducational schools with regard to the teaching process. Indeed, teachers' answers show that teaching is the same in both types of schools as the same teaching methods are used in the two settings. What differs is the way in which teachers treat their students according to level of knowledge acquisition whereby they respect the individual equity between students. The inspectors who emphasized that teaching in single-sex portrayed the same picture and co-educational schools is identical owing to the fact that teachers undergo the same training and use the same teaching methods. Furthermore, teachers report that there are no specific teaching strategies for each type of school because the current educational system stipulates that the focus is on the learner, but they noticed a better challenging environment in mixed schools rather than in single-sex schools. Regarding the teachers' performance in both types of schools, though more than a half of the total number reveal that their performance varies since the type of school affects them, 47.8% of teachers opposed this fact arguing that their performance remains the same in both settings without any effect. In the same realm of thought, the inspectors believed that the school type does not affect teachers' performance for a simple reason that the work plan is the same.

Regarding the ways educational psychology refine teachers' performance in both types of schools, interesting results were obtained. Teachers reveal that educational psychology plays a pivotal role in promoting the teaching and learning process as it provides concepts, principles and methods that help in recognizing students' psychological and social differences. In addition, teaching cannot be conducted without taking into account the psychological aspect. The inspectors who asserted that knowing the students' mental abilities helps the teachers managing effectively the classroom that pictured a similar view. Teachers also confess that educational psychology is an essential part in teacher training. All these results come down to the same concluding point, holding that educational psychology provides teachers with strategies and methods that help them identifying students' individuals and mental abilities for an effective and   productive teaching-learning process and for a positive learning environments for better learners' achievements.

Conclusion

The collected data indicate that teachers and inspectors were aware of the important role-plays by educational psychology. Educational psychology allows teachers to know how to think, how the learning process should be underway, how to inspire and how to memorize or remember. It allows teachers to guide students and canalize their

skills in the right direction. On the other hand, teachers and inspectors have stated that there are no differences between single-sex or co-educational schools neither in the teaching process nor in the performance of teachers but rather a different challenging environments.

In addition, this research work sheds light on the spread of English language in Algeria and its status within the educational system. It is obvious that English is globally spread because of its international position, but it is still thought at different levels as a second foreign language in Algeria expect for the tertiary level where English is used as a medium of instruction for technical and scientific fields. Based on that claim, there is an urgent necessity to reformulate the actual language policy and planning in Algeria to give English it right position among the Algerian new society.

In the light of all, the educational authorities ought to enact decisions to construct institutions for teacher training as these settings help teachers in their educational journey; by providing courses such as educational psychology. This latter is a substantial aspect in the teaching-learning process as it increases teachers' awareness about students' psychological and social differences.

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Promotion and Protection of Childhood and Adolescence - The "Child Contact Centre"

Giorgia Caruso

Abstract

This paper wants to study in deep one of the existing services to help and to improve the parent-son's relation: the "child contact centre". This centre is a place where children can meet their parents after different family problems, from parental conflicts until violence and abuses. It's very important that each child could have the possibility to continue to live with his family as reported by the "UN Convention of childhood and adolescence's rights" (1989). The history of these meeting centres is very recent and, in the same way, also the role of the social workers. For this reason, research of peculiarities of this place and the rules of the operators involved is very important. In particular, the history moment where we are living today with the "Covid-19" spread all over the world, has caused many problems in the families and it has compounded family situations already compromised. The choose of this theme is also born from the need of study in deep the organization and the functioning of a child contact centre. This is one of the services most complex and heterogeneous and that's why even today again it doesn't exist one guideline that is the same in each contest. Finally, the paper wants to describe this service and, mostly, it wants make some proposals about the best practises or operations that could improve it.

Keywords: promotion, protection, childhood, adolescence

Introduction

The child's evolution in the story of pedagogy until the UN Convention

In the story of pedagogy, the child has changed different visions from the society and the government. Particularly, in the Middle Ages parents considered their sons as manpower in the family workers as agriculture, farm and home care. In 1989, with the "UN Convention of childhood and adolescence's rights", children have got their rights until today, although not in the same way all over the world. The Convention defines the child as "*every human being under the age of eighteen, unless he has reached maturity earlier by virtue of the applicable legislation*".[1] However, it's necessary to take

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[1] UN Convention of childhood and adolescence's rights, 1989, in
https://www.standup4humanrights.org/en/

a look at the past in order to observe and analyse all the phases that have characterized this path of growth and consolidation of the figure of the child. In fact, in the Middle Age and in the Modern Age, the religious institution possessed great power of influence in the society so as to be able to spread its negative view of the child, that is, it supported the belief that every new-born was corrupted by original sign and for this, if it had not been "corrected" by the adult with violence, it would have spoiled. The maternal figure took care of the physiological care of the child without devoting himself to the relational and playful aspects: the game was considered a waste of time rather than an added value to the parent-child relationship and to a moment of wealth and entertainment for the child himself. As soon child reached such maturity that he could already start working, he followed his father in the chores so that he could contribute to the family well-being. Between the 1700's and the 1900's, the attention of the children's theme grew more, even if very slowly. Mainly, what changed was the mentality of society: the female figure was valued, infant mortality decreased, marriage was seen as a free choose and not an imposition, also thanks to the introduction of separation and divorce. Romanticism and Enlightenment greatly influenced a new vision of the couple and the family. The age of Enlightenment was relevant in the development of pedagogy since at that time, various scholars and doctors began to take an interest in the subject. Among these, we remember Jean-Jacques Rousseau with his work "L'Emilio" (1972) and later, also Jerome Bruner with his work "The role of tutoring in problem solving" (1976) published in the "*Journal of child psychology and psychiatry*".[1] Only from the 1900's the child got a deserving consideration and, for this reason, the name of "century of children" is attributed to this period, a concept coined by Ellen Key with the publication of her volume[2] (1906's), in which the author addresses parents as those points of reference who should get as possible to children, so as to be able to know them and support in their growth.

A lot of authors studied the child as a human with rights and deserving to receive love and cares by his family and society. Between these, there was Philippe Ariès that with his work "Father and children in medieval and modern Europe" (1981), he investigated the concept of "enfant" and that of "sentiment" as the feeling that developed towards childhood from the Middle Age to the Modern Age.

From the United Stated, the representative of these psychoanalytic studies was Lloyd deMause who, with his work *"The history of childhood" (1983), provided his contribution to argument: "The story of childhood is a nightmare from which we have only recently begun to awaken. The further one goes in history, the lower the degree of attention for the child appears, and more frequently it falls to him the fate of being*

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[1] Bruner J., The role of tutoring in problem solving in Journal of child psychology and psychiatry, Vol. 17, 1976, pp. 89-100

[2] Key E., Ellen Key and the Birth of a new Children's Culture in Journal of theories and research in education, Vol. 11 No.2, 2016, pp. 1-26

murdered, abandoned, beaten, terrified and subjected to sexual violence. Our task here is to see how much of this childhood story can be recovered from surviving testimonies".

There was the need to differentiate the childhood from the adult age, as two different life stages, characterized by different needs and abilities but both deserving to receive the due attention. In this way, between the twentieth and the twenty-first centuries, we begin to consider the child as a "real child" and lo longer as a "representation of the adult". It is very difficult to outline a coherent and precise childhood story, as the continuous changes in society and in the vision of things have hindered to recovery of an acceptable historiography. In the middle of 1900's, the image of childhood, underwent a change: the sentiment of childhood did not improve but changed compared to before. The child came more, integrated into the family life and considered as a being not separated from the adult but remained not free to be himself but continuously influenced by the adult's requests.

Turning our gaze to current events, it is clear that the conception of childhood and child still exists characterized by strong ambiguity despite the various successes achieved in this regard. Even today, in fact, there are episodes and behaviours that are detached from the desire to consider the child as a being deserving and worthy of his own serenity. Every day, from multiple sources, reports of abuse, mistreatment, abandonment and paedophilia are very frequent. Moreover, outside Europe, cases of refugee and militarized children still occur today. Even if globalization has tried to homogenize the whole world and make it as similar as possible, on the subject of childhood, still today there are still strong differences and discriminations. Several years passed before the child received a deserving consideration, perhaps the cause would be attributed to the absence of a juvenile right recognized and inviolable? At the international level, the first steps taken towards the child were taken in England, where the Child's Charter was born in 1888, aimed at protecting and controlling the working conditions of minors in English fireplaces. To denounce this condition was the writer Charles Dickens who, in his work "*Oliver Twist*"[1] (1837), described the exploitation and poverty that those children were forced to carry out.

Then, was enacted the "Declaration of Geneva" (1924), adopted by the League of Nations, which was developed through five articles:

"*The child must be given the means necessary for its normal development, both material and spiritual;*

The child who is hungry must be fed, the sick child must be treated, the child must whose development is backward must be helped, the minor offender must be recovered, the orphan and the foundling must be housed and rescued;

The child must be the first to receive assistance in times of misery;

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[1] Dickens C., The adventures of Oliver Twist, Ticknor and Fields, London, 1868

The child must be put all in conditions of earning a living and must be protected against forms of exploitation;

The child must be raised in the awareness that his talents must be put at the service oh other men"[1].

After lots of conventions and declarations about children's rights, in 1989, in New York, was approved the "New York's Convention" by the United Nations Assembly in September 20th. The United Nations (Un) included all the other peace-loving states which accept the obligation of this Statue and which, in the opinion of the Organization, are capable of fulfilling it. The rights of the child enshrined in the New York Convention concern their well-being, its autonomy, the right to education, the right to rest and recreation, the right to cultural and artistic participation, the freedom to associate, gather, express oneself, seek, receive, disseminating information, freedom of thought, conscience and religion, the freedom to be heard and to express their opinion on any issue that interests them. Family relationship of the children are recognized as optimal where they are built on adequate care. The Un Convention represents the goal of consideration for many years deserving of the child in society and, for this reason, the 20th of September of each year is celebrated the "International day for the rights of children and adolescences.

Protecting and safeguarding a minor means staying away from the shadow of silence and making visible all those situations in that minor could experience in a context of discomfort and prejudice. Reporting to the judicial authority, social service, school or trusted people is the first step towards obtaining serenity and well-being in the child. The right of the child to live in his or her origin's family is one of the most debated topics in recent years, a theme characterized by lights and shadows, family rights and the rights of the child that do not always appear on the same wave line. The child must be free to live in his own family context but to do it, he must receive the right care and attention.

The evolution of social services

Before analysing the characteristics of child protection services, it is necessary to take a step back and look at changing societies from the point of view of assistance. In order for a welfare society to develop, it is essential that there is a society the is open and willing to accept welfare and help in all its forms. The term "charity" comes from the Latin "caritas" which means "dear to whom one attaches greats interest, to whom one feels bound" and differs from love and friendship since charity is acted upon towards people who do not, they are part of their family. The first welfare state interventions emerged through welfare, charitable, religious and philanthropic forms: the welfare state is the type of state that provides services and regulations aimed at protecting the rights of citizens, including health care, public education, family subsidies, defence of the weak and the environment, etc... The religious aspect

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[1] Society of Nations, Declaration of Geneva, 1942, in https://www.savethechildren.org/

has significantly impacted the issue of assistance as priests were recognized as protectors of the weakest, orphans and the sick.

The arrival of capitalism then meant that welfare was halfway between the religious and the secular as several owners of land and industries began to hire needy people as a workforce. A first attempt in favour of the welfare state was made by England which, starting from the fifteenth century, began to introduce forms of assistance to the poor on a welfare level thanks to the "Poor Law" promulgated in 1601. The turning point came when these activities ceased to be simply voluntary commitments and became real professions. The rationalization of welfare works towards the poor has consequently promoted the rationalization of social work. The "Charity Organization Societies" (COS), developed in London in 1869 and founded by Mary Richmond[1], had the purpose of bringing together all the associations that offered help to the needy; to follow, in 1877, they also developed in New York. Alongside the Cos, another concrete intervention was implemented by the "settlement" phenomenon, that is, housing settlements of rich people in poor areas of the city. In this way, the proximity between people of different social classes would have caused rejection reactions in the face of inequalities and consequent reduction of social distance. The first "settlement" born in the United States was the "Hull House", founded in 1899 by Jane Addams in Chicago after being spread to Great Britain; its importance in history is evident from the fact that the subject "Settlement's work" was present within the first school of social work, founded in Amsterdam in 1899. The "working houses", on the other hand, represented a more concrete aid intervention towards fragile subjects: from the "poor law", in Great Britain, real houses were established to host people in difficulty, helped in education to work and in improving one's status. The first schools of social work were founded following a conference held in Paris in 1928, among which we find the "International Association of Schools of Social Work", the "International Council on Social Welfare" the "International Federation of Social Workers "; in 1983 the "IFSW" inaugurated the international day of "social work" which is celebrated every third Tuesday in March. In order to try to spread the foundations of social work all over the world, in 2000 the main international schools organized a convention that will be held every two years in a different country, creating a "global social Agenda" on which to place all future events.

The importance towards the child, as we well know, has gone through centuries before obtaining the relevance it deserves. Thanks to the contribution of studies in the humanities already present and the construction of the welfare state, new interventions were experimented in favour of children such as foster care, educational communities and home and territorial interventions. Interventions in favour of children can be of two types: those in the spontaneous context and those in the judicial context. In the first case, the request for help comes from the family itself,

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[1] Richmond M., Social Work Pioneer, Administrator, Researcher and Author in Social Welfare History Project, in https://socialwelfare.library.vcu.edu/social-work/richmond-mary/

from parents in particular who are aware of being in a precarious or prejudicial situation and accept the help of operators to improve themselves. In the second case, however, the social workers receive an assignment from the Judicial Authority and, without family consent, activate interventions with the aim of protecting a minor in a situation of hardship. The interventions can be activated on minors living in their family such as home and territorial educational interventions and the activation of monitored and protected meetings with the non-custodial parent. In the case of meetings monitored by operators, one of the main objectives, in addition to the protection and protection of the child, is to promote change by supporting the recovery of the parent-child relationship. These meetings are held within a "neutral space", that is called "the child contact centre" that it is neither the home of the minor nor that of the parent.

The story of the child contact centre

The child contact centre has its roots not so long ago and, for this reason, unlike other services already active for some time, it has some peculiarities probably not yet well defined and clear. It is as if there was a surface of doubts and non-words that make this service still not too concrete and clear. Hence the intention to analyse its history, in order to bring out its deepest peculiarities as well as its purposes. From an international point of view, there is talk of a "protected encounter" in France, through the implementation of the "espaces-rencontre" or meeting spaces, born around the end of the 1900s. The different models depended on the four great strands that revolved around the concept of the child contact centre. The first is the legal one, which focused on the aspect of marital separation, parental custody and the right of access of the minor. The second is the psychological one which was concerned with the effects of parental separation on the minor and on the emotional ties with the custodial parent and with the non-custodial parent. The third is the social one which investigates how to support minors and families in which there has been a parental separation and how to deal with the issue with them, promoting the well-being of the nucleus. The last aspect is the protectional one conceived as the protection of the minor from a non-custodial parent who has acted prejudice against him and, consequently, in approaching him, must be protected. In this way, subsequently, it was decided to unify all these intentions in a single model that was the result of the sum of the four strands listed above. This is how in France the child contact centre became a space in which the purpose was to guarantee the continuity of ties, in which the operators involved provided the service for both the minor and the parents and guaranteed protection for the child. The new "single" model provided for the presence of social workers, social workers, psychologists, family mediators and lawyers; a way to make the four fundamental aspects that revolve around the child contact centre exist at the same time.   Simultaneously with the French situation, Child Contact Centres developed in Great Britain by the National Association of Child Contact Centre (NACCC) founded in Nottingham in 1991. "*To keep children in contact with parents after separation in a safe environment because*

parenting should not end when relationships end" [1]is the mission of the NACCC association. Furthermore, the focus of the association is neutrality that must be respected both in the environment or in the context offered but above all among the operators who, for this reason, are different from those of the other services involved in the network. It is precisely in Nottingham that, in 1985, the first "Child Contact Centre" was born thanks to the intuition of a magistrate, Mary Lower, who, observing a son who met his father weekly at the McDonald's in the city, managed to create an informal space that it could be entirely used for those family gatherings. Initially, within these centres there were religious volunteers who took care of mediating in the relationship and during parent-child meetings. Subsequently and thanks to the spread of these centres in many other countries, the NACCC association began to invest in its human resources, offering training courses for the operators of this service. The "Child Contact Centres" have spread to other countries such as Ireland and Wales, reaching a total of 350 parent-child meeting centres. In Great Britain, there are two types of "CCC": the first deals with promoting and supporting family gatherings; the second, on the other hand, focuses more attention on the protection and protection of the minor who is in a relationship with a prejudicial parent. The English experience, unlike the French one, placed greater importance on the aspect of protecting the minor rather than maintaining the family bond. In this way, the perspective changed and the focus shifted from the adult and his relationship with the child to the minor himself. For this reason, a new way of viewing the meetings was being developed which drastically changed the view by ensuring that in parallel with the "Child Contact Centres" there were also the "Supervised Child Contact". The peculiarity of these supervised meetings referred to the fact that the meeting place was held inside the family home so that parents felt more comfortable in getting involved in front of specialized operators. With a view to the protection and protection of the child, meeting places that approached the English ones were spreading in America and Canada. In 1992, in the face of a strong spread of abuse and maltreatment of minors, Anne Reiniger, founder of the "New York Society for the Prevention of Cruelty to Children" gathered specialists from all over the world at a conference in order to find a way to meet safe for all those children who had suffered injurious acts. Unlike the French and English experience, the American protected encounters had the sole purpose of protecting the minor from inadequate adults; for this reason, most of the children who were present in these meetings came from parents with conflictual separation or were victims of crimes committed by the parents themselves. With this vision, the "Supervised Visitation" was founded whose key concept was expressed in this ideology: "*the service provider can provide parents and guardians with information and help to ensure that children have safe, comfortable and satisfying visits. Following the rules and guidelines of the service is the first key to this. Foster parents / guardians should be positive and encourage children to enjoy their visit. After the visit, they should be willing*

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[1] National Association of Child Contact Centres in https://naccc.org.uk/

to listen if the children want to talk about the visit, but they should never ask the child for information. The visiting party should be prepared to have fun within the limits set by the service provider. Children seek displays of love and acceptance; the other factors are not that important to them"[1]. After analysing the various historical and geographical phases, we intend to focus on the peculiar characteristics of work within a child contact centre. To address the characteristics of a child contact centre service, it is necessary to identify the focus and main purpose of the same which, thanks to historical and experiential sources, we can trace back to the protection and protection of the minor during meetings and the promotion of the parent-child relationship. In some cases, the neutral place team is created within a social service, selecting operators who take care of that particular service. In other cases, and especially more recently, it happens that the public body entrusts this service to an external cooperative or association. In both cases, however, the continuity and monitoring by all the operators involved in the situation represent the driving force behind the intervention in support of that family unit. A first feature to consider is the user. Social changes occur repeatedly and so rapidly as to create confusion and bewilderment in personal services; this happens because social change is brought about by people who, in the same way, change quickly and consequently their problems and needs also change. The users who come to a child contact centre are varied and heterogeneous: you may encounter prejudicial parents who have abused that child, parents with many parental skills but very fragile, who abuse alcohol or drugs. You could also meet people with psychiatric diagnoses who struggle to manage their children or even with parents who, following separation, cannot find a meeting point to be able to peacefully continue their life and that of their child. What unites the people who find themselves within a service like this is almost always the sending by the judicial authority: it is the Judge who, by issuing a provision, orders the start of the meetings in a child contact centre. Another common component is the amount of trouble existing in the lives of such people which on the one hand affects adults but, almost certainly, goes to rage in the daily lives of the little ones. The reaction to being sent to this service is always linked to resistance and rejection: adults tend to belittle the situations their children are forced to live in or do not realize the importance of being able to recover and improve the parent-son relationship. The other side of the coin is the reaction of the children to this measure: some of them may experience that meeting positively but many others do not, for fear of that parent or for the concern of hurting the foster parent. A second feature concerns the operators involved and, as has already been reported, the child contact centre is a recent service with respect to the evolution on the subject in history, in the same way the role of the operator involved within the aforementioned service is also a novelty. The heterogeneity of the functioning of the child contact centre also affects the organization of the work of educators. However, there are "best practices" or good practices, key points or guidelines useful for carrying out the task of an operator within a neutral space. We

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[1] Supervised Visitation in Supervised Visitation Network in https://www.svnworldwide.org/

speak of an "educational relationship" when it comes to sharing of daily life, from the recovery and educational enhancement of the meanings of routine activities, from the use of unexpected events and uncertainties, from the interpretation and processing of events. An educational relationship exists only if there is therefore an interaction between two people that must be supported by a well-structured structure aimed at pursuing objectives. In this case, we speak of "educational planning" when the educator, together with the beneficiary of the intervention, stipulate a project with one or more objectives to be pursued to improve the current situation. To draw up an educational project, it is important to recognize what are the needs of the beneficiary and what are the resources available to offer in order to work together on the pursuit of the objectives. The child contact centre's operator usually works both as a team and individually. Teamwork is useful for discussions between professionals in view of the development of the project to be implemented, in parallel with the networking that unites the various operators involved in the case. The educator then works individually on direct work, or on the location of the parent-child meeting. In parallel to the educational project, there is the consent that the parent undertakes to sign as a sort of "pact" or "contract", regardless of whether the activation of the child contact centre has been ordered by the court or is desired by a free choice. The four main functions that an educator should perform within a child contact centre are:

- Promoting change
- Control and observation
- Relationship support
- Function of building a daily life

The role of the educator in the child contact centre service can therefore be defined as flexible, heterogeneous and variable. In addition to the external functions expressed above, there is the internal dimension, that is, that of all the personal and transversal skills that an operator could possess. Among these, listening, attention, availability, welcome, openness to others, the ability to adapt and above all empathy can be emphasized. To ensure that the aspects related to one's professionalism remain and improve over time, it is essential to offer the educator a training course and a supervision course. Furthermore, the educator must possess the skills for a profitable and structured network work that can become a strength in achieving the objectives. The child contact centre's operator collaborates, in taking charge, with the other professionals involved such as the Social Services, the Courts, specialist services such as the drug addiction service, the health service, psychology and neuropsychiatry services, etc... Despite the presence of various social workers who may have a certain situation in a load, the social actor with whom the educator must interact more frequently and with whom he must collaborate for the success of the project is the family. For this reason, the educator should be trained on issues related to family mediation, the evolution of family models in history, clinical work with pathological families and with immigrant families.

In addition to the "best practices" detailed above, there are several techniques, some still on an experimental basis, to be implemented within a CCC to promote and facilitate the parent-child relationship. These techniques do not represent guidelines to be followed as their use is determined by the type of organization of that service and by the choice to activate or not activities to support the relationship. Among these techniques we find the "*Photovoice*"[1], that is a method of investigation that, through photography, directly involves the subjects, inducing them to reflect on specific issues and on the ways to produce a change. The photographed image constitutes the synthesis of concepts that could be in some cases, or for some groups of subjects, difficult to express through traditional communication channels, such as speech and writing. Furthermore, the image is able to synthesize stories, emotions and ideas and uses an easily understandable language. The photovoice was used to carry out needs assessment, programs with participatory methodologies and to communicate requests and proposals to decision makers. In this sense, the technique lends itself to being used as an educational method, and therefore for empowerment, as it is able to activate the subjects in the expression and in the search for solutions to their problems (Wang 1998).

Conclusion

This paper wants to do a time travel and to investigate the evolution of the child's vision. Unfortunately, today, despite the different results obtained, child doesn't still have the value he deserves. The society still thinks that the child doesn't deserve to be value and listened; so, the social workers should mostly work with families to convey the importance of considering him as a precious being. Also in the child contact centre, the main function of the educator is that to promote change. Each change can involve suffering and pain but it is from that pain that something magnificent can happen!

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Perceptions of Students for Sudden Movement from Face-to-Face Teaching to Online Learning Environment: A Regional Study in Conditions Affected by the COVID-19 Pandemic

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Abstract

This paper is focused on exploring the learning experiences of students of Faculty of Education Sciences, University of Elbasan, Albania, during the period of sudden movement from teaching in auditorium to the online learning environment due to the COVID-19 pandemic. **The purpose** of the study was to identify the positive and negative aspects of online learning as experienced by students, as well as to find out their preference for the most appropriate form of higher education delivery (face-to-face, hybrid, online) for young people of digital age. **The methodology** used in this study included an item-based questionnaire to collect *data* which was developed through a web-based application known as Google Forms and was delivered to students via Internet. Qualitative and quantitative analysis was undertaken for the answers obtained by the open-ended and closed-ended questions. **The results** of the study showed that the biggest challenge for all students was the immediate adaptation to the form of distance learning. Most of them had perceived the online learning dominated more by negative experiences than positive ones. The study **concluded** that new reality created by COVID-19 tested the current capacity of Higher Education Institutions regarding the ICT integration process in teaching. As this process was progressing very slowly, universities were found unprepared to transfer the teaching process from the auditorium to the online environment with the same quality. In order to meet the demands of the future, **it is imperative** that every university to plan strategically the increase investment towards its digital transformation.

Keywords: student learning experiences, online learning, face-to-face teaching, hybrid teaching model, higher education digital transformation.

Introduction

Online learning has shown significant growth over the past decade at most universities in the world. According to a Tracking Distance Education Report in the

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United States (Seaman, J., et al., 2018) it was estimated that more than half of students (52.8%) took at least one distance course. Referring to the recent Online Education Trends Report (*Venable, M., 2020*) it is learned that the number of students enrolled in "at least one distance education course" is increased by more than 6% (Ginder, et al., 2018).

In Albania, except rare cases of experimenting with online platforms as a part of Erasmus+ projects, there are no other data on the development of online learning in higher education before the onset of COVID-19 pandemic.

Due to the situation created by COVID-19, all universities in Albania were being moved rapidly from face-to-face teaching setting to online learning environment. The use of online model was considered by the academic staff and higher education management authorities as the only solution of the moment in the extraordinary conditions of social isolation.

The focus of this paper was to explore the academic experience of transition from face-to-face teaching to online learning, based on the perceptions of students who were attending the study programs in the field of teaching in the Faculty of Education Sciences, at the University of Elbasan, Albania.

The notion that learning only takes place in real environments (e.g., classrooms, laboratories) has since been challenged and overtaken by the use of the Internet and network technologies (Stacey et al, 2004). The access to digital technologies that allow interaction between subjects at different times and spaces has opened precedents for new ways of teaching and learning. One of them was the creation of the Virtual Learning Environment (VLE), an electronic classroom, interactive, flexible and decentralized, in which learners and tutors participate in online interactions of various kinds, including online learning (*Carmo&Franco, 2019*).

Online learning or E-learning (*Glossary of Online Learning Terms, 2019*) refers to an instructional strategy in which the learners are geographically separated from the instructor, and the instruction is delivered totally through the computer (*WCET, 2004)*[1]. Studies have identified practical and pedagogical benefits from applying online teaching to universities. The online classes are seen as an effective way with reduced costs to offer study courses. They allow more flexibility, particularly to the non-traditional students who may have family or work obligations (Arias J., Swinton, J., Anderson, K., 2018). The accessibility of the internet and flexibility of online courses have made online education an integral part of higher education (Kebritchi, et al., 2017; Devine, J., Gordon, M., 2020).

However, moving from face-to-face teaching to online teaching is a complex and challenging endeavour for the higher education institution, academic staff and students as well. Adapting to the online learning environment takes time, energy,

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[1] Cited from Mansour, B. E., Mupinga, D. M., (2007)

patience, and a willingness to try new teaching strategies and new tools (Boettcher, J., Conrad, M., 2010).

Given that the online education is expected to be critical for the future of higher education institutions, this paper is also interested in examining students` preferences towards the various forms/*modes* of education delivery at the university (face-to-face, online, hybrid). A better understanding of this trend can help the higher education institutions, in particular the faculties that prepare future teacher to build a new culture of teaching and learning that best responds to the needs of digital age students.

Materials and Methods

This study was conducted with students who were attending a Bachelor or Master Study Program in the field of teaching for various specialty subjects, in Faculty of Education Sciences, University of Elbasan, Albania. All study programs were offered full time for the academic year 2019-2020 which means that they would be developed through the direct form of teaching in the auditorium.

This study was designed to explore the students` experience affected by the sudden movement from teaching in auditorium to online learning environment during the period of social isolation caused by COVID-19 pandemic.

The purpose of the study was to identify the positive and negative aspects of online learning as experienced by students as well as to find out their preference for the most appropriate form of higher education delivery (face-to-face, hybrid, online) for young people of digital age.

The methodology used in this study was consistent with social research and the previous studies with similar topics. After reviewing the relevant literature, an item-based questionnaire was developed to collect data through a web-based application known as Google Forms. In order to ensure the validity of the questionnaire, its first draft was subjected to a review and pre-testing (pilot) process on a small size of representatives from the students` population to which it was going to be administered. After that, the final questionnaire was developed with 7 items covering the following components: (1) The data on the academic profile of the participants; (2) Students` perceptions towards online learning; (3) Level of mastery of the digital competence; (4) The web-based applications most used for online learning; (5) The difficulties with online learning; (6) Students` preferences towards the various modes/forms of higher education delivery (face-to-face, online, hybrid) in the future, and (7) Something else to add.

In the questionnaire were used a total of 5 closed-ended questions with the option to choose from a set of pre-determined answers, including a five-point Likert Scale as well, and 2 open-ended questions that allows to be formulated the response as a text written by the own student.

This questionnaire was delivered to 118 students via the Internet respecting the anonymity of each study participant in order to get more accurate information. A total of 86 (n=86) questionnaires (73%) were collected in return, where 70 of them (81%) were completed by students who were pursuing a Master Degree and 16 questionnaires (19%) were completed by students who were pursuing a Bachelor Degree. The questionnaire started in early May, 2020 and after two reminders, data collection ended in early June, 2020.

Quantitative analysis was undertaken for the results derived from closed-ended questions which were expressed as percentage of occurrence per item and were calculated by the Google Forms Program. The answers obtained in the open-ended questions were extracted from the written text and were analyzed quantitatively for repeated themes and finally summarized.

Results

The core findings of the study were presented statistically, analyzed and discussed as follows. The data collected by the questionnaire were expressed as percentage of occurrence per item and were organized using visual aids in order to make the results more easily understandable.

The response rate in this study was 73% (n=86) or a total of 86 responses out of the 118 online delivered questionnaires were returned. This result could be justified not only by the fact that participation in the study was voluntary, but also by the isolation situation caused by COVID-19, where not all students could have access or a stable internet connection from home.

3.1. Students' perceptions towards online teaching/learning

The study results regarding the students` perceptions for the sudden movement from teaching in the auditorium to online learning are summarized in Figure 1.

- 22% were stressed because they had no previous experience in online learning;
- 12% were anxious because they did not have the tools and access to online learning;
- 12% were curious about new way of developing online teaching and learning;
- 6% were satisfied because online instructions allows they to gain time for other activities (working, caring for children and family, attending training courses, etc.);
- 3% were diffident because they did not have the knowledge and skills needed for online learning;
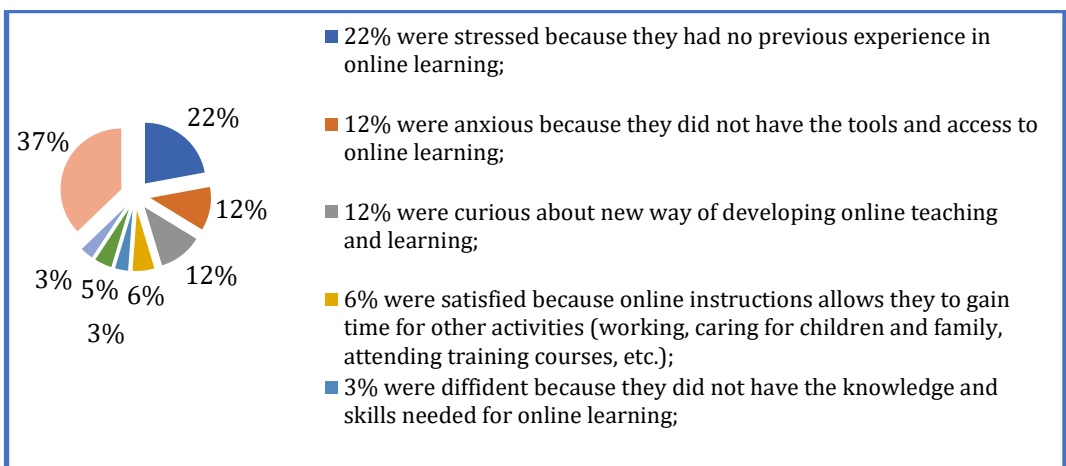
Figure 1: The perception of students for the sudden movement from teaching in the auditorium to online learning.

As it can be seen from Figure 1, approximately 23 % of students reported the positive experiences in online learning which were expressed with attitudes such as positivity (5%), curiosity (12%), satisfying (6%).

Positive experiences reported by students toward online learning were mainly related to factors such as the attractive nature of the internet-based learning model, its flexibility that allowed individuals to gain time for other activities, self-confidence about the knowledge and practical skills gained in the field of ICT.

Almost 77% of students reported the negative experiences in online learning. They showed that had found themselves in difficulty (37%), stress (22%), anxiety (12%) diffident (3%), and loneliness (3%).

Negative experiences were mainly related to factors such as lack of previous experience in online learning, lack of available digital tools and internet access, lack of needed knowledge and digital skills, feeling of isolation and lack of interaction with classmates, difficulty understanding the specific lessons and assignments in terms of independent learning.

A comparison of study findings showed that the new online learning situation was perceived by the vast majority of students (77%) as dominated more by negative experiences than by positive ones.

3.2 Level of mastery of digital competence rated by the students themselves

One of the issues investigated in this study was also the assessment of students` level of digital competences by their own perception. A five-point Likert Scale was used to assess the level of mastery of students` digital competence. The competence levels were ranged from a minimum of 1 point (very poor) to a maximum of 5 points (excellent). The statistical data are presented in Figure 2.
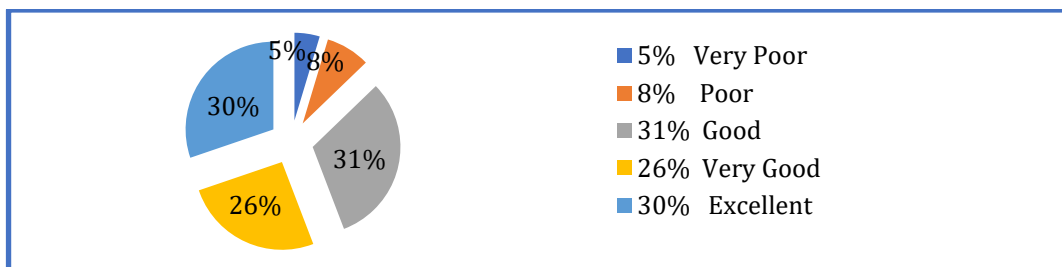

Figure 2: Level of mastery of students` digital competence rated by students themselves.

As can be seen from the data presented in Figure 2, more than half of respondents (56%) in total rated themselves at an excellent level (30%) and a very good level

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(26%) of digital competence. There were 31% of respondents who rated themselves at a good level of digital competence. Only 13% of all respondents self-reported a poor level (8%) and a very poor level (5%) of digital competence.

To summarize, there were 87% of all students who admitted that they had a high level of digital competence, compared to 13% who admitted that they did not possess it sufficiently.

Web-based applications more used for online learning

One of issues included in questionnaire for study purposes was the investigation of web-based applications more used for online learning. Statistical data are presented in Figure 3.
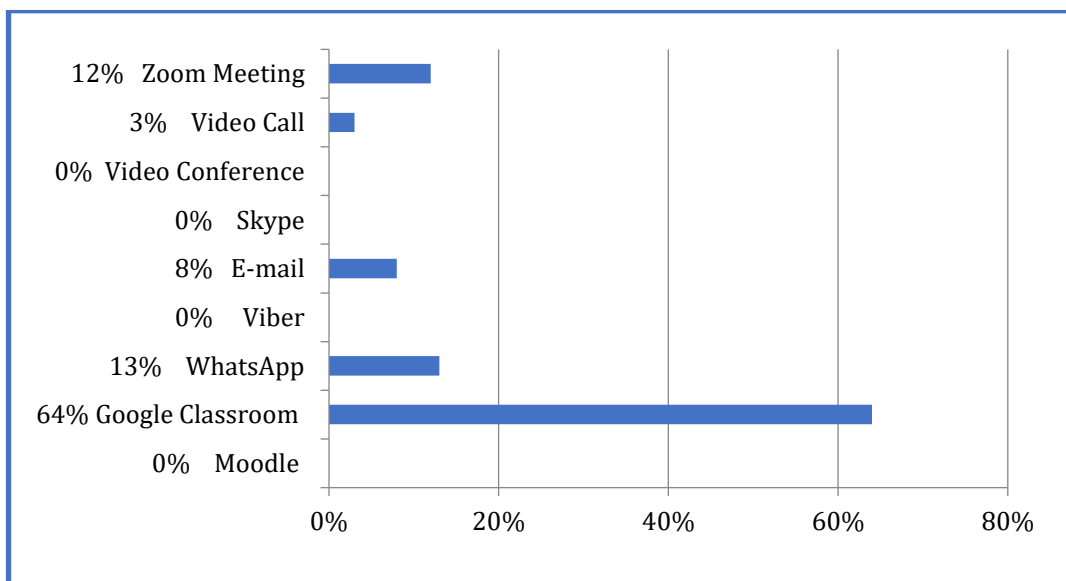
Figure 3: The more used web-based applications for online learning

As is indicated in Figure 3, there were some of types of web-based applications more used for online learning during period when the teaching in auditorium was interrupted due to COVID-19 pandemic. Majority of respondents (64%) reported the use of Google Classroom for online learning. There were 13% who reported the use of WhatsUpp application and 12% declared the use of Zoom Meeting. The web-based applications rarely used for online learning were E-mail (8%), followed Video Call (3%).

The results showed that more used web-based applications for online learning was Google Classroom, followed by WhatsApp and Zoom Meeting. In particular, Google Classroom and Zoom Meeting are recognized as the cost-effective teaching platforms that can be easily used if professors and students would have an adequate level of digital competence.

The difficulties with online learning

The study also focused on identifying potential difficulties that students could have encountered during online learning. The data obtained from students in response to the open-ended questions were extracted from written text and were analyzed quantitatively for repeated themes, as well as were categorized and presented in the Figure 4.
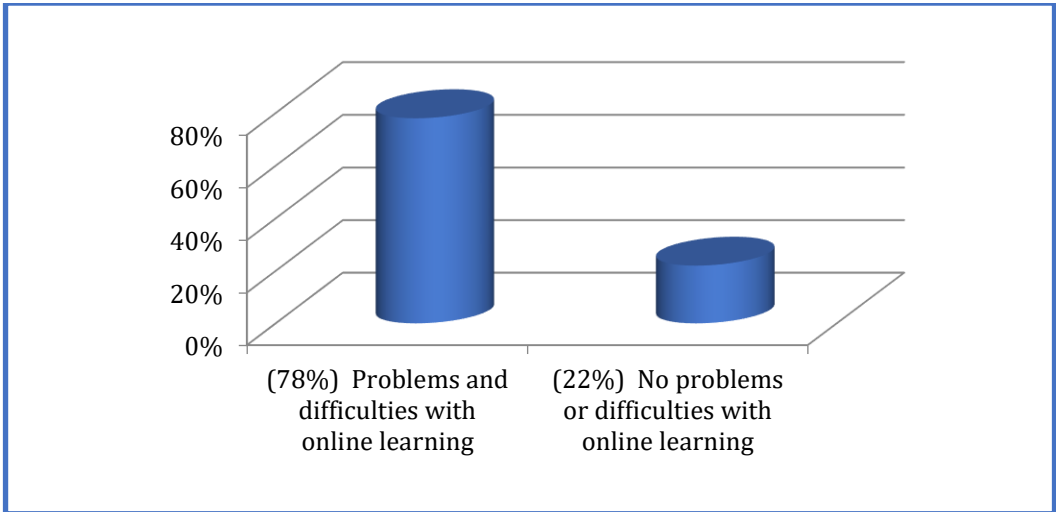
Figure 4: The percentage ratio between the students with and no problems/difficulties with online learning.

Most students (78%) reported encountering problems or difficulties with online learning, and the rest (22%) reported that they had not encountered any problems or difficulties. The nature of problems and difficulties that students had described in their answers fell into two categories, as presented in Figure 5.
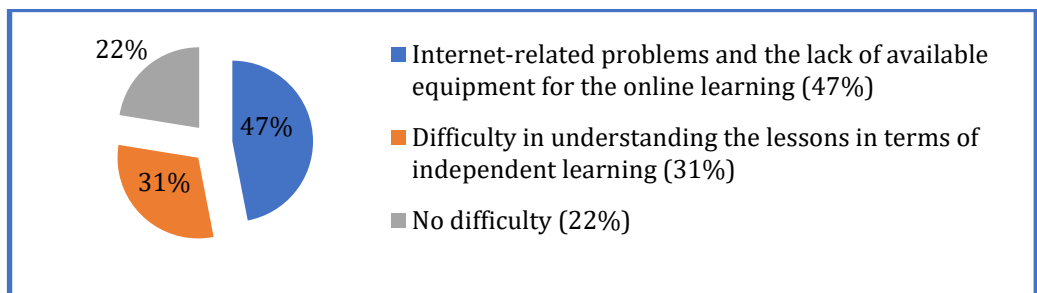
Figure 5: The nature of problems and difficulties that students faced with online learning.

Approximately 47% of students reported having internet-related problems and difficulties caused by the lack of an available device to attend online learning, as follows:

Lack of internet connection at home;

Poor quality of internet distribution on various regions of country;

Lack of a personal computer (PC) or laptop to attend online learning at home conditions;

Low family income which does not allowed the students to benefit from purchase of telephone packages to navigate the internet;

Difficulty in using mobile phone during all hours of online teaching;

Writing and reading assignments for a long time on the small screen of mobile phone have caused eye strain, fatigue, frustration;

Inability to adapt quickly to the use of different online learning applications for different subjects, because one subject was taught in Google Classroom, others in Zoom Meeting or WhatsUpp or E-mail;

There are significant statements among students` answers to internet-related problems, such as:

"Online learning had its difficulties. Not all students have the financial means to secure a computer, laptop or continuous internet connection. Most students used cell phones because they did not have a computer at home".

"Of course online learning could be effective, but as long as most students do not have a laptop at home this complicates their learning process. How do you learn a topic or do a task with a phone? I have personally experienced eye strain every time I interacted with the small cell phone screen".

The lack of internet at home and available equipment for the online learning has exposed a significant number of students (approximately 47% of them) with unequal opportunities to participate in distance education.

While, 31% of students reported the difficulty in understanding lessons and assignments in terms of independent learning, such as:

Overloading with individual assignments by a part of professors;

Lack of online services by university library;

Difficulty in finding online literature to perform the individual assignments;

Need for additional explanations by professors about materials of their lectures;

Longing for classroom meeting and interactions with peers;

Some of significant statements among students` answers regarding difficulties to learn independently are:

"In conditions of study from home we have worked only with reduced literature send by email by our professors. The university library still offers no possibility to use online textbooks".

"Doing lesson only with online way was not very effective, because the lack of necessary textbooks creates a very big gap in getting most complete knowledge".

"I suggest that online learning be done properly because otherwise it may not be effective. We were found overwhelmed with assignments while not having access to internet and tools needed to complete assignments".

"I hope to be back in auditorium as soon as possible and have the opportunity to meet my classmates and professors".

It seems that high number of assignments given for independent work in the context of online learning was perceived by a considerable part of students as overload. The lack of lecturer-student and student-student interaction has influenced them to take responsibility for their own learning. The lack of service in university library to provide online textbooks of various subjects may have pushed students to find other online sources to obtain information needed to complete assignments. All of this situation, as well as the need to interact with classmates, seem to have influenced students to perceive certain levels of difficulty in understanding lessons and performing assignments independently.

Students` preferences towards the modes/forms of higher education delivery

The results regarding students` preferences towards the modes/forms of higher education delivery (face-to-face, online, hybrid) are presented in Figure 6.
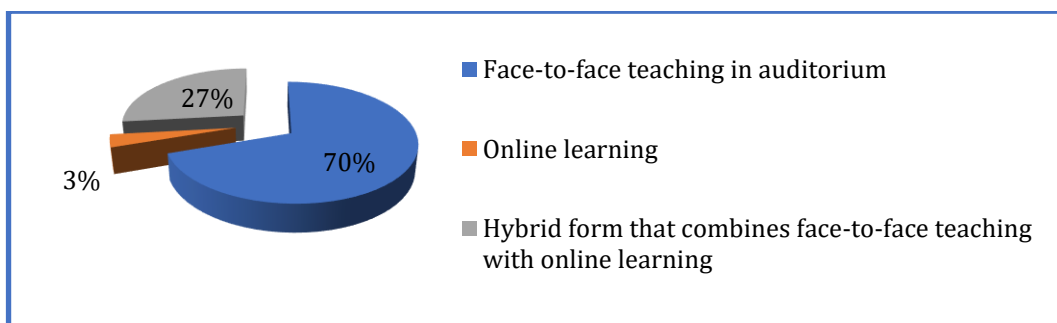

Figure 6: The students` preferences towards modes/forms of higher education delivery (face-to-face, online, hybrid).

As can be seen in Figure 6, the vast majority of students (70%) had preferred the face-to-face teaching form in auditorium compared to online or hybrid teaching form. But, 27% of them had preferred the hybrid teaching compared to other forms. Only 3% of

students had preferred the online learning form compared to teaching in auditorium and hybrid teaching form.

Among students` answers regarding their preference towards the forms of higher education delivery, a participant noted "I like online learning because I`m at work and cannot attend university class full time. During the period of pandemic, I benefited from online learning because it allowed me to manage my time to learn independently". Someone has written "I think that teaching in auditorium is more effective than online one. In class we have opportunity to listen to the professors` explanations and discuss with classmates about various subject matters". Another stated "Teaching in auditorium does not compare in terms of values with online teaching! There is no possibility in a virtual world to concretize the laboratory lessons or teaching practices". Others suggested "It would be better to combine teaching in auditorium with online learning".

As noted, partly students have showed a positive attitude towards the integration of online learning at university as a necessary approach in the digital society, but without underestimating face-to-face teaching.

It was possible that students` initial personal experience with online learning have influenced their attitude and preference for the most appropriate mode/form of higher education delivery (face-to-face, hybrid, online).

Discussion

The primary purpose of study was to examine students` perceptions of their online learning experience during the sudden transition from teaching in auditorium to online learning environment in conditions of social isolation caused by COVID-19. A further aim was to find out their preference for most appropriate form of higher education delivery (face-to-face, hybrid, online) for young people of digital age.

The study findings indicated that the biggest challenge for most of students was the immediate adaptation to the form of distance learning. Almost 77% of all students had perceived the online learning situation dominated more by negative experiences than positive ones, and only 23% of them had perceived the online learning situation as a positive experience.

Also, there were 78% of students in total who reported having encountered problems or difficulties with online learning, and the rest (22%) reported that they had not encountered any problems or difficulties. The nature of problems and difficulties that students had described in their answers fell into two categories: 1) internet-related problems or difficulties caused by the lack of an available equipment/device to attend online learning (47%), 2) the difficulty in understanding the lessons and assignments in terms of independent learning (31%).

Statistical analysis of study data revealed a significant correlation between the value in percentage of students (78%) who reported a range of problems or difficulties with

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online learning, and the value in percentage of students (77%) who perceived online learning as a negative experience. The strong association between these two values can be considered as an important indicator of study reliability.

The positive and negative experiences such as those perceived by students in this study could also be explained not only in terms of advantages and disadvantages of online learning compared to face-to-face teaching or opportunities and digital skills that students had to attend online course from their home, but also by availability of university`s digital infrastructure to support distance education, as well as the capacity of academic staff to transfer immediately teaching courses from auditorium to the online space. Recent studies have suggested that an online class will be as effective as face-to-face class if it is designed appropriately (Nguyen, 2015).

Despite the internet-related problems and various difficulties, the transfer of teaching from auditorium to online environment has brought more focus to student-centered learning. Qualitative analysis of results derived from open-ended questions showed that the high number of assignments given for independent work and the lack of the subject textbooks offered online seems to have induced students to take more responsibility for self-direction of their learning process. Previous research has pointed out that students who have this sense of responsibility tend to have positive online learning experiences (Blackmon, S.J., and Major, C., 2012). However, e-learning may lack real interactions between instructors and students (Mansour, B.E., Mupinga, D.M., 2007).

According to study results, 31% of students reported the difficulty in understanding lessons and assignments in terms of independent learning, especially in cases where in the online learning context the lecturers had increased the amount of academic workload for their students and where there was a lack of instructional interaction between lecturer and students. Given that independent learning is essential prerequisite not only for the management of online learning but also for lifelong learning it is very important to be cultivated in students. To succeed in an online learning environment, instructors should implement good teaching through good online course design, provide thorough explanations, define goals clearly and seek continued feedback from students (Crews, Kelly, et al., 2015).[1] Several studies have noted that instructors also have a strong influence over student experience, in large part through their accessibility and through their efforts to provide opportunities to connect with peers (Blackmon, S.J., Major, C., 2012). In this framework the online teaching model may have the potential to improve the quality of university learning in the future, but it need to be seen more carefully before it is applied.

Regarding web-based applications used for online learning, the majority of respondents (64%) reported that Google Classroom was the most frequently used. It was a surprising finding the use of social media platforms, such as WhatsUpp, E-mail

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[1] Cited from Carnasciali,M., Erdil,N., 2020

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and Video Call, for online learning purposes. The use of such social media may be seen by lecturers as an easy quick way to communicate with students, rather than as an effective opportunity to teach online. However, these approaches may be a potential for further research in future.

Although the experiences with online learning platforms were new in faculty, the analysis of findings showed a much higher dominance of student population (87%) who admitted that they had a high level of digital competence compared to student population (13%) who admitted that they did not possess it sufficiently.

Since the success of online learning depends primarily on mastery of digital competence, this result can also be seen as a significant indicator of the readiness of the majority of students to attend the web-based learning courses in future. However, there are other factors identified by research that influence the student readiness for online learning such as self-directed learning, self-efficacy, digital engagement, and motivation for learning (Doe, at al., 2017).

The data analysis showed that a vast majority of students (70%) preferred face-to-face teaching and a minority of them (30%) preferred other forms that integrate online technology. There may be a number of reasons why students showed an extremely strong preference for teaching in auditorium. However, it seems that this choice has been largely influenced by problems and difficulties they encountered during immediate transition from face-to-face teaching to online learning, where according to present results of study, almost 77% of all students had perceived the new situation of online learning dominated more by negative experiences than positive ones, as well as 78% of all students had reported problems or difficulties with online learning. While the rest of respondents (30%) who showed more preference for the hybrid or online teaching/learning forms seems to have been able to explore or appreciate some of the advantages of distance education offered by university during the period of social isolation caused by COVID-19 pandemic.

It is known from research that online learning offers several advantages over traditional classroom learning. Among these are the elimination of barriers of time and space. The online learning environments offer flexibility of instructional pace, and more control over which learning activities are more appropriate to engage in (Alexandra, 1996).[1] In contrast to these findings many still feel that online learning excludes some within society, the poor/less well-of, the socially disadvantages, who are unable to effort the equipment that is essential to this mode of study. The arguments against online learning are focused mainly on the concern for loss of traditional classroom face-to-face interaction, and potential feelings of isolation (O`Donoghue, et al., 2004).

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Conclusions and Recommendations

This study is in line with other studies which have contributed to the idea that student opinion is essential for improving quality of distance learning in the higher education system.

Hence, the findings of present study on the favorable and unfavorable perceptions by students regarding online learning can be considered as important indicators of quality of teaching transfer from classroom to the online environment. However, some recent studies focusing on educational situation influenced by COVID-19, have suggested that this new experience should not be seen as a threat by students and educational institution based on conventional teaching, but should serve to adapt the benefits of online education system to their teaching (Ramirez-Hurtado, et al., 2021).

The study concluded that the new reality created by COVID-19 tested the current capacity of higher education institutions regarding the ICT integration process in teaching. As this process was progressing very slowly, universities in countries like Albania were found unprepared to transfer the teaching process from the auditorium to the online environment with the same quality.

Therefore, the academic initiatives to apply in the near future a full approach to online teaching still seem difficult. However, more research is needed to examine the current needs of higher education institutions in Albania regarding the improvement of infrastructural conditions that support distance education as well as training needs of lecturers about adapting the course content and developing innovative materials and methods to deliver online teaching.

The evolution of online instruction and continuous search to incorporate the best educational methods from both traditional and virtual environments has led to many institutions adopting a "hybrid," also known as blended learning (Dziuban, et al., 2004). The goal of blended learning should be to unite the best features of in-class teaching with the best features of online learning, to promote active, self-directed learning opportunities for students (Garnham & Kaleta, 2002)[1]

In order to meet the demands of the future, the recent studies have recommended that every university should set up in its strategy clear and concrete goals towards its digital transformation, taking into consideration three main areas: its digital infrastructure, the development of its academic staff`s skills to use digitally-based methods in their teaching and the improvements of its students` digital skills (Grosseck, G., Malita, L., Bunoiu, M., 2020).

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[1] Cited from Joutsenvirta,T., Myyry,L.,2010

Limitations

This study has some limitations which can affect generalizing study results in other contexts. The participants in study were students of a faculty at University of Elbasan, Albania. If the study had been extended to other universities of country, than results of study could have been different. Also, the study is carried out in a very short period of time attempting to take a snapshot of a changing situation. Students` perceptions can change over time. The recorded results are limited to time, place and culture where the study was conducted. However, this study may serve to promote in future the further studies on online learning at university.

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Assessing Students' Minds: Developing Critical Thinking or Fitting into Procrustean Bed

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Abstract

Standardized tests have been applied as student knowledge assessment in many countries, including Azerbaijan. However, studies have shown that standardized tests are not an effective way of measuring students' knowledge because they limit students' creativity and prevent instructors from applying individual teaching methods due to the pressure of passing the tests. The tests do not consider students with different learning abilities and treat them equally, which may not favor some students. Also, teachers are pressured to ensure their students pass the tests, leading to an excessive focus on the topics likely to be set rather than the whole curriculum. The study recommends implementing different assessment methods with no ranking to ensure that students do not memorize for passing tests, eliminate competition, and promote equality in the education sector. The assessment methods should allow students to debate, compare and analyze ideas through critical thinking, inquiring, and understanding for applying the learned knowledge into real life. Thus, the importance of an inquiry-based curriculum and assessment is stressed.

Keywords: standardized tests, creativity, individualism, critical thinking, multiple assessment methods, Azerbaijan, equality, students' knowledge, inquiry

Introduction

What is knowledge? What kind of knowledge must be assessed? These two closely interlinked questions can set the base for the educational philosophy we need at schools. Today, knowledge assessment heavily relies on standardized testing. However, at the same time, the innovations in education and technology have made it essential to create more modern knowledge assessment tools.

Students' knowledge evaluation has gone through different stages of changes in different societies. It is widely accepted that educators need a tool to evaluate students' academic performance and knowledge level. Traditionally students

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demonstrate and certify their knowledge by answering questions on past material. What became different in recent years is that the arrival of the knowledge economy and new teaching philosophy, which emphasizes critical thinking, has created more precise knowledge evaluation. In addition, the widespread use of standardized testing has generated questions about its accuracy and efficacy for the demands of modern teaching methods and the job market.

The question of what kind of tests can best evaluate students' knowledge is still under discussion. Unlike the past, when the source of knowledge was teachers and libraries, today, the internet has become a significant source of easily accessible knowledge. As a result, it significantly impacted how knowledge must be delivered, learned, and assessed.

Besides the inquiry into the problem from the general perspective, this paper reflects on the dilemma of standardized testing in Azerbaijan.

Literature Review

The global economy is gradually changing, and every country must emphasize education systems that would encourage innovation and knowledge towards the globalized economy. According to Caroll (2013), some students may perform well in standardized tests and move into high schools; however, they struggle in basic skills and knowledge. Critical thinking is essential in education because it enables students to apply their learned skills to real-life problems. Standardized testing has been applied in various learning institutions as a method to measure student's knowledge. However, Albino (2008) states that standardized testing may not be the most effective assessment strategy since assessments are not merely auditing the student's performance but improving the student's education. Therefore, testing assessments should aim at helping the education stakeholders and the government make informed decisions that would assist in improving the education sector in the country. Caroll (2013) adds that critical thinking is based on students' ability to reevaluate their thoughts, intending to improve them. Therefore, standardized testing may not provide the students with an opportunity to reevaluate their thoughts and skills. Chomsky& Robichaud (2014) argues that standardized testing is politically made to diminish teachers' and students' creativity so that to forge uniformity and control. The study further argues that standardized tests present an idea of privatized power to prevent the majority from reaching the top of the social, economic, and political class.

A study by Shively, Stith, & Rubenstein (2018), which aims to evaluate the benefits of measuring design process creativity and critical thinking in gifted education, states that in standardized assessment, if students were to develop cars, scores would be given based on the speed of the car, distance covered and how it looks. However, these aspects are not adequate to measure the students' skills and knowledge; therefore, various assessment tools should be employed to measure skills, knowledge, and

critical thinking. Similarly, Smith & Szymanski (2013) states high stakes and consequences concerning standardized tests. Most education institutions use standardized tests to promote the student to the next grade, to be admitted to a college, or to graduate from high school. For example, several schools have applied standardized testing when selecting students for honors programs in Azerbaijan. A study by Abizada & Mirzaliyeva (2019) notes that Azerbaijan's learning institutions use students' first-year perfomance, the honors-program selection test, and the university centralized admission tests to predict student's academic success in their program. However, it states that these criteria may only be effective in some programs; therefore, there should be different assessment methods depending on the study program. Novinger & Compton-Lilly (2005) argues that standardized tests are unfair because "all kids can't achieve at the same level" (p.195); therefore, standardized testing leads to demeaning of some students, and it would be better if students were given basic tests and only on things they would need to apply in their daily lives.

While these tests make students and teachers accountable, the stakes in the results have been put so high that some students become depressed and demotivated to study (Smith & Szymanski, 2013). A study by Phi Delta Kappa (2015) states that 64% of American parents believe the schools have adopted too much standardized testing, ignoring other aspects of students' knowledge assessment. A study by Shukakidze (2013) to understand how school, family, and student factors impact the students' achievement in Azerbaijan and Estonia noted that standardized testing in Azerbaijan might be unfair to assess students' knowledge. The study used 4600 Azerbaijan students to answer how students' background, family-related issues, and school-related issues affect their scores in standardized testing. The study concluded that several variables impact oral communication, reading, and writing assessment method because it ignores individualism and social variables that influence students' test outcomes.

Phi Delta Kappa (2015) further states that most parents believe American instructors have deviated from giving students the knowledge to "teaching the tests" due to the high pressure of achieving the required minimum. The pressure originates from the public, parents, principals, and education managers. This pressure has resulted in skewed teaching systems aiming to pass the standardized tests even though there are minimum studies on the connection between creative thinking and standardized tests. Smith & Szymanski (2013) states that the level of creativity in America has been diminishing in the last 50 years even though I.Q. test scores have risen since 1990. Most teachers have been focusing on education areas included in the standardized tests, ignoring areas requiring creativity and critical thinking.

Similarly, Berliner (2009) states that a third of North Carolina instructors spent more than 60% of teaching hours preparing students for state standardized tests, ignoring most of the teaching materials they deem may not be tested. This shows that

standardized testing harms a country's education system, and there should be alternative ways of evaluating student's knowledge. A study by Moon et al. (2007) to understand the impact of standardized testing on teachers, students, and schools found that students and teachers feel pressured by such tests due to high stakes placed in them. This pressure is the motivation that instructors use to design the curriculum areas that they will teach. Such tests are disadvantaged because schools that underperform in the standardized tests are unlikely to attract new students, and the teachers may be viewed as underworking. Talented and gifted students may fail to exploit their full potential due to the pressure of passing the standardized tests. The Azerbaijan study by Eminli (2019) states that multiple-choice tests dominate Azerbaijan education assessments. They are inappropriate for measuring students' knowledge since teaching should focus on academic writing at the secondary school level instead of multiple choices that can limit student's thinking.

Further, Briggs (2013) states that standardized testing of students harms learning in several ways. Briggs argues that standardized testing is misled and misused because schools and districts in America have been involved in test cheating to get higher grades, especially by giving students tests before the stipulated time or students caught changing their answers in states like Atlanta, Texas, and Washington. The standardized tests also kill knowledge because students may have knowledge but fail to use it. Jorgenson (2012) describes standardized tests as "Sit, Get, Spit, Forget," where students do not demonstrate their skills in explaining, researching, public speaking, and reflecting, among others. University admission in many countries is based on standardized tests but focuses little on creativity and critical thinking (McCarthy& Blake, S 2017).

In addition, most schools use summative assessment methods, where students are tested at the end of the semester to understand whether the students have met the study objectives (Gardner, 2012). However, Briggs (2013) argues that standardized tests have defined students, equating them to their scores. As a result, the students are influenced to compare themselves with their peers and may put some of the students at a disadvantage; therefore, even though standard tests provide a consistent measurement method, the end product of the tests is not beneficial to all students. Similarly, Moon et al. (2007) argue that some students equate the results of the tests with their self-worth, making those who underperform have low self-esteem and feel demotivated to learn. Orfield (2004) adds that a study at Harvard University found that standardized tests significantly contribute to student dropout. Students at the 10% bottom of the rating scale had a 33% possibility of dropping out of college. They are affected even in their social life. Britanica (2020) adds that standardized tests have been used to create a bureaucracy in China, where those who can pass the tests are admitted to the top social class while those who fail to meet the required marks are ignored. For example, Spann and Kaufman (2015) state that in 2014, Peking, an elite university, admitted only 0.02% of students from Shadong 657,000 high school graduates, meaning that elite universities preserve positions for students coming

from the capital than in rural areas. This argument is similar to Briggs's claim that more prominent companies like Google and Amazon look at the school test results before skills when looking for potential employers. Therefore, the impacts of standardized tests go beyond school.

A standardized testing system ignores students as individuals and treats them as a group despite their unique abilities and limitations. Altwerger et al. (2002) state that teachers have abandoned meaning-centered content in favor of commercial instructional schemes that only provide measurable reading skills with quantitative assessment, ignoring the quality of knowledge that the students may have acquired. Students learn differently; learning is relative, and teachers may apply different teaching methods (Taylor, 2021). Therefore, standardized tests may not be helpful in defining learning, ignoring slow learners and those abled differently. Also, Taylor argues that each different setting may call for different modes of teaching, and using standardized tests to evaluate teachers is unfair to both the teacher and students. Thus, instructors would be effective in their testing if they considered each student's background and learning mode to ensure they achieve the study's objectives. Briggs (2013) states that under pressure to perform in the standardized tests, schools ignore teaching areas that are not tested even though they may be part of the curriculum, especially on co-curricular activities. This trend limits the quantity and quality of education that students are given.

The purpose of this study was to test the hypothesis that standardized testing does not promote the creativity and individuality of the students. Thus, there are high stakes in these tests. The study also identifies the impacts of standardized tests on students, schools, and teachers. Recommendations are provided manifest that assessment methods implemented in the future will consider each student individually. The objectives will improve students' skills, enhance their creativity, and develop critical thinking and knowledge that may be useful even after school.

Objectives of the study

To identify the harmful effects of standardized testing on students and teachers.

To identify the impact of standardized testing on students' creativity and individuality.

To provide recommendations on potentially fair assessments methods

Methodology

To demonstrate that standardized tests do not promote critical thinking and do not consider individual abilities and students' individual needs, the study relied on secondary data where it employed evaluation of peer-reviewed journals, a systematic online search using keywords: standardized testing in Azerbaijan, negative effects of standardized testing in schools, effects of standardized testing in the United States, most effective students' assessment strategies, types of students tests, evaluation in

education, the importance of tests in school, tests outcomes, tests, and academic success, standardized testing does not promote the creativity and individuality of the students, meaning of student creativity and individualism, among others.

The databases that have been used include Google Scholar, JSTOR, ProQuest, Azerbaijan government education websites, and PubMed. In addition, the researcher employed a desk survey (2) and document analysis (2). A total of 20 publications were thoroughly reviewed to understand their concepts of tests and education research, focusing on the effects of standardized testing on students, teachers, schools, and the primary motive behind standardized testing. The elimination strategy was applied using documents based on their perceptiveness, credibility, and authenticity. The research questions were:

1. What are the harms of standardized testing on students and teachers?
2. What are the potential alternatives of assessments that can promote fairness?
3. How can the education system promote student's creativity and individuality?
4. How effective are alternative student assessment methods

Results

From the qualitative and quantitative data analyzed from various studies, the majority agree that standardized tests do not promote students' critical thinking, creativity, and individualism. McCarthy & Blake (2017) used a standardized test on 11 students and concluded that age played a significant role in student's results and creativity, where younger students were more creative than adults. The study also shows that students who score higher in the tests have a low capturing ability of concepts. Therefore, using standardized tests for students may limit their creativity, especially if they have not captured concepts. Similar, low capturing skills show that standardized tests are an ineffective way of measuring student's knowledge since some students may have high memory skills. Still, after the tests, they forget the concepts, leading to a wrong interpretation of the results. PISA (2021) argues that creative thinking is an essential part of the education system because it gives students the will and the need to change the world positively. Creative thinking helps students adapt to the changes of the world. However, these may not be measured in standardized testing, where students are given specific questions with multiple choices. Also, the studies argue that education should motivate students to show their creativity in answering questions and solving problems. However, the standardized tests force students to follow specific directions, limiting their ability to express their subject knowledge.

Because of stated rules that students and teachers have to follow in standardized testing, they cage students and teachers to show their creativity in thinking, expression, and problem-solving. Data by Nusche (2013) states that it is challenging

to find a neutral and inclusive assessment method; therefore, teachers should implement multiple assessment strategies that promote fairness and promote students' creativity. The use of multiple assessments methods helps students who are not favored by standardized test methods to express their knowledge and skills differently. Nusche (2013) found that in Organisation for Economic Co-operation and Development (OECD) countries, 36% of the primary school principals are likely to admit students based on their standardized test results, while 18% of the principals are likely to transfer students showing low results in the standardized test. This data shows that standardized data leads to discrimination, where test results are used as the only tool to evaluate a student's potential. In addition, there are schools where students are grouped based on their abilities in particular subjects, 55% in OECD countries (Nuesche 2013). In addition, the study has noted that standardized tests make most students be focused on good grades than the concepts of the study. Some students memorize a few facts before the tests, and after completing the test, the information is quickly forgotten (Jorgenson, 2012). Jorgenson shows that standardized tests ignore the fact that students have different learning styles. The tests do ignore public speaking creative skills. Children have no room to elaborate, explain, and debate, especially in countries where tests have multiple choices, like in Azerbaijan.
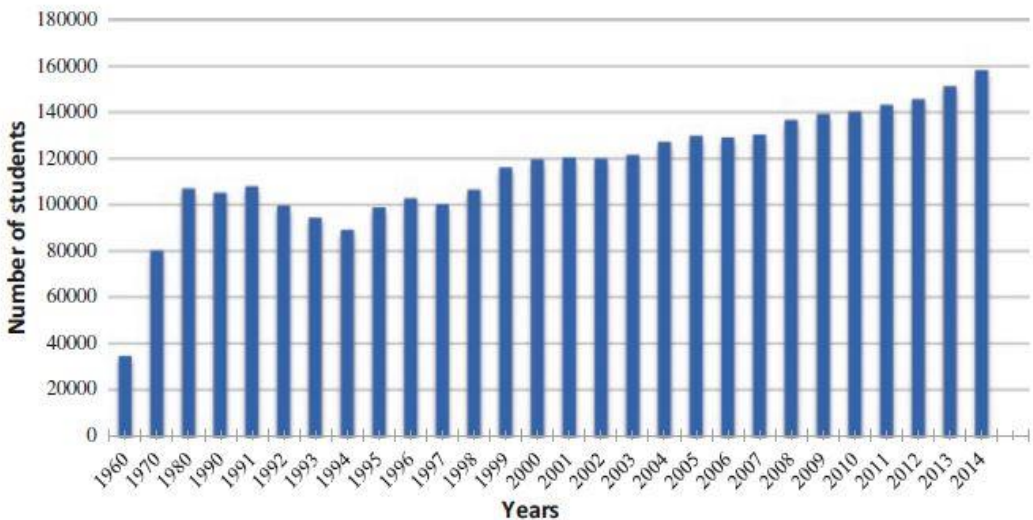
From the above statistics, it is evident that there is a significant increase in the number of students in institutions for higher learning. However, there have been debates in Azerbaijan on efficiency, harm, and effectiveness of standardized tests. There is little room for creativity and individualistic learning for students.

The analyzed studies show that standardized testing has made education a competition rather than a learning activity. In Singapore, students are subject-based

grouped using the standardized test results, which is further used to determine whether they will join a college, university, or technical institute. The trend of a standardized test is common in many countries, including the United States, China, South Korea, Azerbaijan, and the United Kingdom, among others. Instead of thinking creatively and showing their knowledgeability, some students have resorted to cheating due to the pressure of passing the tests, making them unknowledgeable to be regarded as the best students when their results are not a reflection of their knowledge. Also, standardized tests make teachers treat students uniformly instead of assisting them individually, denying some students an opportunity to learn in their way.

Further, students may feel demoralized and have low self-esteem if they do not pass the standardized tests. This means that the tests ignore the student's individuality aspect, and assisting the slow learners may challenge some teachers. Finally, data shows that standardized tests deny the students an opportunity to participate in the curriculum development since the teacher aims to ensure that their students pass the tests, limiting their creativity and individuality in learning.

Discussion

Procrustean bed or fitting all students into one standard assessment tool is what one might define today's knowledge assessment. The origin of standardized testing goes back to the Chinese Han dynasty, employed to recruit staff for the state bureaucracy. Later it was adjusted to the needs of education and adopted first in Europe in the early 19th century and later in the U.S. (Britannica, 2020)

Today employment of standardized tests has become an educational pandemic. In the world of speedy innovations, the approach to knowledge assessment has not significantly changed since then. The definition of literacy has evolved to meet the needs of society. Literacy was once defined as the ability to read, count, and write. In the previous century, when public education became a widespread institution in many states, education was characterized as a tool for adequate work skills and a medium for receiving information about political and social ideals. Nowadays, literacy is linked to the ability to perform specific tasks related to certain industries and a more sophisticated understanding of the political, economic, social, and cultural environment.

Therefore, tests are also changing – they are becoming more unified, complex, and sophisticated but not necessarily creative. Standardized tests cannot measure students' creativeness because, in preparing students for the test, the idea of individuality and uniqueness of each student is lost. Teachers' loss of freedom in the learning process hinders the ability to inspire students to develop their abilities individually and cultivate critical values. Moreover, teachers must devote much of their instructional time to preparing students for standardized tests rather than promoting creative, innovative, and critical thinking.

The problem of standardized testing is multifaceted and can be examined through different perspectives depending on what we consider a challenge of this type of assessment and what these tests are applied for. Whether they are applied for obtaining professional diplomas or applied at educational institutions to test students' literacy, it is not arguable that we need some standard knowledge. The problem is how we teach and assess that knowledge.

Teaching students to fit into the standard knowledge assessment box without considering their individual needs and suppressing critical views also undermines the values of democracy. Children explore the world through touching, sensing, and asking multiple questions. That is how they learn and develop. It has to be understood that an adult's best way of learning still stays the same - through inquiring and applying the knowledge. Inquiry is a part of critical skill, which brings progress.

Altwerger and Strauss (2002) stress that big corporations are behind the promotion of standardized tests.   Their interests go beyond the profit-making from test textbooks and testing industries. It also goes beyond interest to recruit skillful workers with demanded knowledge. Big corporations have interests in establishing a social order, which serves their benefit.

Novinger and Compton-Lilly (2005) illustrate through many stories told by parents that standard curricula harm children's ability to advance, reduces diversity, and deny differences. Instead, it promotes intellectual compliance and textbook industries, "serve[s] particular interests while silencing competing voices" (p.198). Novinger and Compton-Lilly further argue,

Too many schools are fixated on passing tests. Thousands of teachers are currently constrained by the discourses that position them as testers and technicians rather than as thoughtful individuals who work alongside parents for children (p.198)

Rees (2001) believes that forcing instructors to address content measured in standardized tests and avoid more analytical material hinders learning. Test preparation mania, which swept the American schools and is spreading further across the globe, endangers our diversity. Tests cannot measure critical thinking and truthfully evaluate students' knowledge.

Moreover, sometimes guessing and cramming can allow students to pass tests without deep knowledge of the subject. Special training actually can help pass the test. Chomsky and Robichaud (2014) argue that:

Teaching for tests instead of cultivating one's intrinsic interest is just inconceivable from a humanistic point of view, considering that students are being trained instead of encouraged creatively and individually. By doing so, with standardized practices, it tends to undermine any likelihood of the child wanting to learn or gain the capacities to proceed on his own (p. 5)

There are some other arguments about the efficacy of standardized testing. The test is a measurement taken at a particular time. A student taking the test can be sick, hungry, nervous, frustrated, or disturbed by some events in their personal life. The question evolves around evaluating students' past learning experience appropriateness within a 2-3 hours period.

The problem of standardized testing and curriculum should also be approached from a political viewpoint. Teachers lose the freedom to implement the teaching material, foster skills, and enhance knowledge creatively. While teachers must inspire students to constantly inquire in their learning process, they are more and more seen as facilitators of test preparation and fact-based curriculum implementers. This issue is not only related to the problem of what is best for students. It is the question of democracy, too. Rees (2001) argues that he is entitled to academic freedom as an instructor at an educational institution.

Case of Azerbaijan

In the Soviet Union, the high school diploma was called the "Certificate of Maturity " (*Attestat Zrelosti*). The knowledge assessment was based on oral and written exams. The name of the diploma speaks for itself. The students were supposed to demonstrate more than just standard knowledge and prove that they were mature enough to step into graduate studies. The primary issue with this type of education was that the educational system was politicized, indoctrinated with Marxism, and thus not intended to bring up critical thinkers, as it did not serve the cause. Therefore, the Soviet schools did not foster dissent opinion.

After the collapse of the USSR in 1991, many countries adopted standardized knowledge assessment. Azerbaijan embarked upon reforms in education; trying to westernize the system had created many frustrations and positive changes. One of the major reforms was the implementation of standardized university admission testing. The positive consequence of this standardized testing was that it helped eliminate corruption for admission exams. Students had to pass standardized tests through the country-wide central testing commission, which did not depend on university admission.

 Incrementally testing became one major tool for evaluating students' knowledge in all educational institutions, not only part of university admission. Comparing the evaluation system of the universities before adopting the standardized testing, one can notice that the old system considered a more individual approach. The teachers had a huge role in evaluating their students, thus knowing their needs and abilities. Moreover, the exams covered inclusive spectra of knowledge.

Testing became a mechanical system of evaluating knowledge. Giving the students the opportunity of multiple-choice has diminished the demand for creativity and a broader understanding of the subject because the students could sometimes guess

the answers. Unfortunately, when teachers' jobs became preparing to pass the test successfully, their status diminished in the learning process.

In the initial period after the collapse of the Soviet Union, the evaluation system at the university was still based on the Soviet approach, i.e., the teachers examined the students themselves based on the specially prepared exam questions. Certain subjects even consisted of two types of exams: oral and written. In the end, the teacher was the authority to grade the students. Based on the student's overall performance and the exam results, the teachers marked them considering their knowledge and performance during the term. Thus, it gave freedom to teachers and valued the teachers' input during the term.

When the university introduced standardized testing for evaluating students after each term, the teachers lost the authority to evaluate the students' performance. Thus, teachers taught them during the whole term, and in the end, students took one standardized test based on multiple choices. Based on collective work, one test was prepared for the entire faculty relevant for every level. Teachers from different faculties proctored the testing procedure. Although this type of knowledge assessment eliminated corruption, it diminished the role of the teacher and creative approach in students' knowledge assessment. Another shortcoming of this type of standardized testing was that teachers had to prepare students for specific tests. Literacy became a matter of secondary importance, as the students had to prepare to pass a test based on textbooks. Enhancing students' knowledge became more challenging to achieve, especially because of the psychological pressure students endured in preparation and passing tests. Teachers' role was reduced to test preparation merely. While a teacher was supposed to increase the students' literacy, they had to care about bureaucracy. Chomsky and Robichaud (2014) argue that:

Standardized educational practices represent an attack on humanistic and critical education, as they are politically made to annihilate students and teacher's creativity, individuality, and autonomy to create more effective measures of uniformity and controls (p.1)

Changes in the educational system are still in progress, and even though universities and schools have introduced different types of knowledge assessment, tests are still part of it. For example, standardized tests are still applied for university entrance the same as in the West.

Limitations

This study solely relies on secondary data that was collected at different times from different countries. Therefore, there may be variability of the information and the present time. Also, the populations of various studies are small; therefore, it may be challenging to use the conclusions for the general students' population. Additionally, there is no generally accepted definition of students' learning and creativity and; therefore, creativity in this context has been defined as the ability of students to

express their knowledge in a unique format; or diversely express their thoughts. Data analysis was challenging for the study because samples are different, and there are many variables involved. This study has used a theoretical approach, and there is a possibility that the results may vary if questionnaires and random sampling from the students' population were conducted. Therefore, there should be further studies on the impacts of standardized testing on students, the country's economy, and teachers for a particular country.

Recommendations

The government should incorporate multiple assessment methods such as oral tests, essay writing, designing prototypes while standardized tests are made the last assessment option. A study by Eminli (2019) notes that there is no perfect method of testing students' knowledge; therefore, using multiple forms of tests in a single assignment such as essays and multiple choices may be a relatively better way of assessing students' knowledge.

Students' knowledge should be assessed based on their critical thinking and creativity.

Tests should not be used as determinants of academic success and could be used to redefine the curriculum.

Redesigning the curriculum to promote inquiry-based learning could foster developing better knowledge assessment methods.

There should be no ranking of students based on the tests; instead, teachers should hold the scores as tools for strategizing to teach the students effectively.

Conclusion

Like the famous figure of Greek mythology, Procrustes, who was trying to fit people into standard beds by cutting the limbs or stretching them, the concept of standardized testing might follow the consequences of his approach. The educators need to promote an inquiry-based education process instead of memorization.

Education needs to change the attitude of treating students as a whole and not as an individual. Instead of enhancing literacy, the educational system is more concerned about fitting into the standards without considering the students' cultural and intellectual backgrounds and considering the students as individuals with unique abilities. Suppose the teachers were given a chance to evaluate students' knowledge based on their ability. In that case, it could have subdued many frustrations and brought more benefit to developing creativity, enhancing knowledge, and preparing them for the modern job market.

Trying to improve the educational system, Azerbaijan, like other countries, was trapped in standardized testing. It is an example when the countries trying to improve the system do not necessarily have to copy the West as the West has created its

problems on the way of advancement. The positive outcome of the standardized test was that it eliminated the corruption for university admission in Azerbaijan.

In the modern world of innovations, the knowledge is constantly changing, and a skillful learner or employee needs to be able to find the "knowledge," to apply the "knowledge," and to change the "knowledge" if needed. Unfortunately, the standard knowledge assessment does not yet meet the requirement of this new concept.

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Developing Multilingual Competence and Cultural Awareness through Forms of Non-Formal Learning: A Contribution to Sustainable Employability, Active Citizenship and Social Inclusion

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Abstract

We live in a fast-changing world, where breakthrough technological advances have not just disrupted industries but also changed the way we live, work and learn to a degree humankind has never experienced before. As the modern workplace becomes ever more global and interconnected, proficiency in foreign languages (FL) assumes a fundamental role in international business relations. Simultaneously, being able to navigate culturally diverse environments, i.e., understanding how international stakeholders think, work, and express themselves through their attitudes and behaviours is of paramount importance as well. These challenges also raise pressing questions: How can we prepare learners for a global world in constant evaluation? How can we help them develop 21st-century skills as important as critical thinking, creativity, communication, adaptability, digital literacy and cross-cultural understanding? In May 2018, the Council of the European Union (CEU) adopted a *Recommendation on Key Competences for Lifelong Learning*, a framework that attempts to establish a common understanding of competences needed in the present moment and the future, by emphasising the inter-relatedness of knowledge, skills, attitudes and values. An important reference tool for education and training stakeholders, this recommendation identifies the following key competences: 1) Literacy competence; 2) Multilingual competence; 3) Mathematical competence and competence in science, technology and engineering; 4) Digital competence; 5) Personal, social and learning to learn competence; 6) Civic competence; 7) Entrepreneurship competence; and 8) Cultural awareness and expression competence. The EU Member States are, thus, encouraged to prepare their citizens for changing labour markets and active citizenship in more diverse, mobile, digital, and global societies, and to develop learning at all stages of life. While teacher-guided approaches will remain an important pedagogical practice, the main approach to teaching key competences is through providing learning environments that facilitate active learning, i.e., student-centred settings where open-ended problems and challenges can be solved through

debate, experimentation, exploration, and creativity. This paper aims to narrate a non-formal activity carried out within a Business English Communication course taught at the Higher School of Technology and Management of the University of Aveiro (Portugal), in collaboration with an international group of volunteers from the European Solidarity Corps. This initiative sought to contribute to the development of some of the key competences for lifelong learning, especially multilingual skills and cultural sensitivity and expression, but also digital skills and personal and social skills of the participants.

Introduction

Education is no longer about teaching students something alone; it is more important to be teaching them to develop a reliable compass and the navigation tools to find their own way in a world that is increasingly complex, volatile and uncertain. Our imagination, awareness, knowledge, skills and, most important, our common values, intellectual and moral maturity, and sense of responsibility is what will guide us for the world to become a better place. –Andreas Schleicher, OECD Education Directorate

We live in a fast-changing world, where breakthrough technological advances have not just disrupted industries but also changed the way we live, work and learn to a degree humankind has never experienced before. This is a time characterised by interdependence among nations, where socioeconomic, linguistic, and cultural diversity is the foundation on which societies are built; a time of global communication and decentralisation of power, which is accelerated by social media, emerging nationalism, and increasing incidents of terrorism; a time where workplaces have become more open, flexible and transparent and teamwork is highly valued (OECD, 2019). In its *Employment Outlook 2019* report, the Organisation for Economic Co-operation and Development projected that one-third of all jobs worldwide would likely be transformed by technology by 2030 (OECD, 2019). In early 2020, the World Economic Forum (WEF) adverted that the world was facing a "reskilling emergency" (Zahidi, 2020), then later, six months into what became a global pandemic, WEF reinforced that 50% of all employees will need reskilling by 2025 (Whiting, 2020). To tackle all of these changes, we need to continuously develop competences that allow us to successfully manage the challenges posed by the many transitions taking place in our work, in our personal lives, and society. Above all, we need too to learn how to deal with uncertainty, nurture resilience, develop on a personal level, build successful interpersonal relations, and learn how to learn (Sala et al., 2020).

This need, however, poses a quite complex question: how can we prepare ourselves for jobs that have not yet been created, technologies that have not yet been invented and problems that we don't yet know will arise? (OCDE, 2019). Seeking to provide an adequate response to this challenging interrogation, the European Union (EU) has established a series of initiatives to equip individuals with the skills, competences and qualifications required to thrive in such an evolving socio-economic environment. The *New Skills Agenda for Europe*, the *Digital Education Action Plan* or the *Recommendation on Key Competences for Lifelong Learning*, among others, are some examples of such initiatives (European Commission, n.d.).

Following a review of the 2006 *European Reference Framework of Key Competences for Lifelong Learning*, an updated framework, one that aims at setting out a core set of skills necessary to work and live in the 21st century, was adopted in 2018. This revised *Recommendation on Key Competences for Lifelong Learning* emphasizes that "in a rapidly changing and highly interconnected world, each person will need a wide range of skills and competences and to develop them continually throughout life. The key competences, as defined in this reference framework, aim to lay the foundation for achieving more equal and more democratic and inclusive societies. They respond to the need for sustainable growth, social cohesion and further development of the democratic culture" (CEU, 2018). An important reference tool for education and training stakeholders, this *Recommendation* identifies the following key competences: 1) Literacy competence; 2) Multilingual competence; 3) Mathematical competence and competence in science, technology and engineering; 4) Digital competence; 5) Personal, social and learning to learn competence; 6) Civic competence; 7) Entrepreneurship competence; and 8) Cultural awareness and expression competence. The EU Member States are, thus, encouraged to prepare their citizens for changing labour markets and active citizenship in more diverse, mobile, digital, and global societies, and to develop learning at all stages of life (CEU, 2018; European Commission, 2019).

This paper aims to present a non-formal activity developed with undergraduate students of a Business English Communication course, in collaboration with a group of volunteers from the European Solidarity Corps (ESC). The main objective was to contribute to the development of some of these key competences, especially multilingual skills and cultural sensitivity and expression.

Literature review

Developing and enhancing human skills and capabilities through education, learning and meaningful work are key drivers of economic success, individual well-being and societal cohesion (WEF, 2020). As Schwab (2016) advises, our ever-evolving reality calls for a response that must be integrated and comprehensive, one that involves all stakeholders of the global polity, from the public and private sectors to civil society and higher education institutions (HEI). In fact, with the aim of better preparing graduates for a demanding job market, major changes have taken place in European

HEI already. One of the most significant developments is the shift in the learning paradigm: the evolution from traditional, teacher-centred instructional models to learner-centred approaches, where students take an active role in their learning process – that is, in the development or consolidation of their set of competences. The European Council defines "competence" as a combination of knowledge, skills and attitudes. Knowledge is composed of the facts and figures, concepts, ideas and theories which are already established and support the understanding of a certain area or subject; skills are defined as the ability and capacity to carry out processes and use the existing knowledge to achieve results; attitudes refer to the disposition and mind-sets to act or react to ideas, persons or situations (CEU, 2018).

Competences are often divided into two distinct categories: the cognitive and technical competences, also commonly known as "hard skills", and those of a transversal nature, coined as "soft skills". Hard skills refer to easily defined and measured knowledge or abilities that are obtained through (certified) schooling, training, courses and on-the-job training, whereas soft skills, which are often transferable across careers and industries, refer to any skill or quality that can be classified as a personal trait. In other words, these refer to the individual characteristics that shape how individuals communicate with others; personal and interpersonal skills such as active learning, adaptability, creativity, critical thinking, dependability, effective communication, empathy, flexibility, managing feedback, organization, problem-solving, resilience, stress tolerance or teamwork are all important pieces in the set of transferable skills that can be applied in nearly every setting in today's fast-paced global economy (Simões, 2020).

The new reality brought by the Fourth Industrial Revolution calls for a reskilling effort, which to be meaningful requires individuals in general, and HEIs in particular, to adjust and focus on the fastest-growing professions of the future. Alongside engineering, cloud computing, data and AI – all obvious examples of professional areas that will soon be most sought after – people and culture-related jobs, where specialised interpersonal skills are fundamental, will be equally crucial (Zahidi, 2020; Whiting, 2020; WEF, 2020; Desjardins, 2018). According to OECD (2017), to perform these jobs "social intelligence" and "cross-cultural competency" are among the set of critical 21st-century skills necessary to tackle the disruptive shifts that are already reshaping the workforce landscape.

It is a fact that, more than ever before, the world is characterized by an interrelated, interdependent global community (Samovar, et al., 2013). With the increasing mobility for education, training and work, increasing migration from third countries, and the overall global cooperation, two key competences (CEU, 2018) play a particularly important role in ensuring individuals are up to the challenge: 1) Multilingual competence and 2) Cultural awareness.

On the one hand, the ability to communicate in a language other than one's mother tongue is acknowledged to be one of the key competences which citizens should seek

to acquire. In the *Recommendation on a comprehensive approach to the teaching and learning of languages* (CEU, 2019)*,* the Council recommends that EU Member States explore ways to help citizens acquire foreign language (FL) competences in at least one other European language, up to a level that allows them to use the language effectively for social, learning and professional purposes. The acquisition of an additional (third) language, to a level that allows them to interact with a degree of fluency, is also recommended. Above all, this recommendation seeks to reinforce that language skills are a valuable asset that provides competitive advantages for both businesses and job seekers, while simultaneously providing a better understanding of other cultures, thus contributing to the development of citizenship and democratic competences*.*

As Ninian Smart affirms, "what appears to us as reasonable conclusions from within the perspective of our own culture may, in fact, look different from another cultural perspective" (as cited in Samovar et al. 2013). Therefore, with the current trend towards globalization and internationalisation, not only FL skills but also grasping how international stakeholders think, work, and express themselves through their attitudes and behaviours is also of paramount importance. According to Landau (2018), awareness of how cultural differences can affect business communication is not just helpful, it's essential; organisations that understand and accommodate individuals from different cultural backgrounds are better equipped to scale and build a better reputation amongst such a competitive global market.

With this respect, OCDE stresses the role of this key competence by calling for a global competence education. Global competence can be defined as a "multi-dimensional construct that requires a combination of knowledge, skills, attitudes and values successfully applied to global issues or intercultural situations" (OECD, 2016). As highlighted in the *OECD PISA Global Competence Framework* (OECD, 2018), globally competent individuals can examine local, global and intercultural issues, understand and appreciate different perspectives and worldviews, interact successfully and respectfully with others, and take responsible action toward sustainability and collective well-being. Moreover, educating for global competence can boost employability, in the sense that effective communication and appropriate behaviour within culturally diverse teams is vital to many international organisations, where employees are also often required to quickly adapt and apply and transfer their skills and knowledge to new contexts.

Methodology

The activity that shall be presented next was carried out at the Águeda Higher School of Technology and Management, of the University of Aveiro (ESTGA-UA), with a group of undergraduate students of the upper-intermediate level course English Language

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and Business Communication (ELBC). It was planned and organised as a non-formal[1] initiative, and aimed at addressing two key competences for lifelong learning in particular: the multilingual and the cultural awareness competences.

Through its Youth Center Office, which is one of ESTGA-UA's local partner entities, the city of Águeda has been the host location of several ESC volunteers over the years, in an EU initiative that aims at creating opportunities for young people to work in projects that benefit communities and people around Europe (European Youth Portal, n.d.). In September 2019, the city welcomed volunteers from seven different countries: Austria, England, Spain, Finland, Germany, Greece and the Republic of North Macedonia. Their stay created an excellent opportunity for an invitation to visit the ELBC class and help students link some of the studied conceptual aspects to real testimonials.

This intercultural encounter, which took place on the 12th December 2019, marks the beginning of the project *Building Intercultural Bridges in the Classroom*, an initiative that aims at involving students in the development of their linguistic and intercultural skills in more active and motivating ways, such as the direct contact with peers from different geographies[2]. Such collaborative experiences not only represent a valuable opportunity to engage students in their own learning process, they also allow for a better understanding of the world through first-hand knowledge. Moreover, as stated in the *OECD Future of Education and Skills 2030 Project*, such collaborations are perfectly in line with today's vision for the education sector:

Schools are no longer seen as closed entities in themselves, but as part of the larger eco-system in which they operate. Some schools collaborate with each other, forming networks or partnerships with other schools. Some schools have started to collaborate more widely with other organisations in their communities (…), where teachers and students can become familiar with the skills and competencies that employers and other community members deem critical. (OECD, 2019)

With a month to prepare themselves, ELBC students were challenged to organise in groups and present their country and culture to the ESC volunteers. To help each group focus on specific aspects, students were given a list of relevant topics to research (Figure 1)[3]. Above all, the focal point was not so much the information or aspects that can be easily seen/found by non-natives, i.e., the explicit manifestations

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[1] Whereas formal learning follows a syllabus and is intentional in the sense that learning is the goal of all the activities learners engage in and the learning outcomes are measured by tests or other forms of assessment, non-formal learning takes place outside a formal learning environment but within some kind of organisational framework; the goal is still to develop a particular knowledge and set of skills, but it does not follow a formal syllabus nor is it formally assessed (Council of Europe, n.d.).

[2] The project was interrupted in 2020/2021 due to the restrictions imposed by the Covid-19 global pandemic, but a second encounter is already being planned with the Águeda Youth Center for 2021/22.

[3] The theoretical framework that supports topics 1.4. and 1.5. — Geert Hofstede's cultural dimensions model and Edward Hall's high and low-context cultural framework — is part of the course syllabus and had been, therefore, extensively discussed in class.

of national culture, rather a reflection upon students' thought patterns and underlying beliefs, attitudes and behaviours, that is to say, all those specific traits that are implicit or out of conscious awareness. When interacting/working across cultures it is precisely this deeper level of culture that leads to difficulties or communication problems that intercultural training seeks to help overcome.

GROUP 1. COUNTRY'S PRESENTATION
1.1. General info, geographic and demographic data
1.2. National symbols
1.3. Celebrations / Festivities
1.4. Country analysis through Hofstede's 6-D model
1.5. Allocation to Hall's high- / low-context cultures

GROUP 2. COMMUNICATION MADE EASY
2.1. Gestures and other nonverbal communication
2.2. Idioms
2.3. Curiosities
3.4. At the table

GROUP 3. BUSINESS ETIQUETTE
3.1. Greetings, introductions and business cards
3.2. Eye-contact, personal space and touch
3.3. Time
3.4. Socialising
3.5. Gift-giving
3.6. Dress and appearance
3.8. Particular cultural attitudes and behaviours
3.9. Tipping customs
3.10. Conversational customs and manners

Figure 1 – Profiling Portugal: list of suggested topics

Following the invitation to come to an ELBC class to attend students' presentations, an informal meeting with the ESC volunteers was arranged. After discussing the meaning(s), characteristics and different levels of culture, our visitors were also challenged to present their countries and their national cultures to our students, with a special focus too on the implicit manifestations of their culture, such as, for example, values, attitudes and beliefs, concepts of time and space, authority perception, etc.

The session was organised into three moments:

Firstly, each group was granted 15 minutes to present their research to the class and ESC volunteers. From creative presentations of factual data, current trends and conceptual frameworks to the showcase of different musical styles (especially those that most likely only locals know about) and the screening of a short film where students portray the Portuguese, with some of our most typical behaviours, cultural habits and funny quirks, colloquialism and curious idioms (Figure 2), the result was a fun yet serious look into ourselves and the matrix – or the "cultural programming of the mind" (Hofstede, 2005) – we are all built upon.

Figure 2 – Screenshot of the film "Friends getting together at a Portuguese tavern" (written, played and edited by students)

Students' presentations were followed by a coffee break where a variety of traditional products (proudly) brought by students from their hometowns was served. In a culture where food and gathering around the table are a central part of social relationships and many rituals, this moment was particularly symbolic and meaningful. It also provided students and ESC volunteers with the opportunity to comment on students' presentations and socialize and interact in a relaxed, informal way. Afterwards, the floor was given to the ESC volunteers, who participated enthusiastically in the task by introducing their countries to the attendees. Overall, each one of them conducted a candid self-analysis, which revealed the volunteers' creativity as well as their ability to laugh at themselves and, above all, demonstrated how culture does shape the way we act in our daily lives, see the world and interact with others.

After the end of the semester, students were invited to answer an online questionnaire, which was anonymous and included 16 items that aimed at assessing the overall learning experience, as well as students' perceptions regarding the development of specific skills. Answering the questionnaire was not mandatory and data from the 19 participating students were collected.

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Results

The applied questionnaire was divided into three sections: 1) the overall learning experience; 2) hard and soft skills development; 3) future initiatives and improvement suggestions.

In section I, the response to the first question – *Did this activity help you relate the intercultural communication concepts and theories discussed in class with the reality presented by our visitors?* – was 100% positive. As for question 2 – *Which stage(s) of the activity do you consider most interesting and/or rewarding?* (Figure 3) –, to learn about our visitors' cultural background (94.7%) and the interaction moment (84.2%) were the most selected options. 57.9% of the students also selected the group interaction and the preparation of activity for the event day. The nervousness and unease usually inherent to public speaking, especially in such group age (18/19-year-olds), might have influenced the lower results of the fourth option, the presentation delivery.
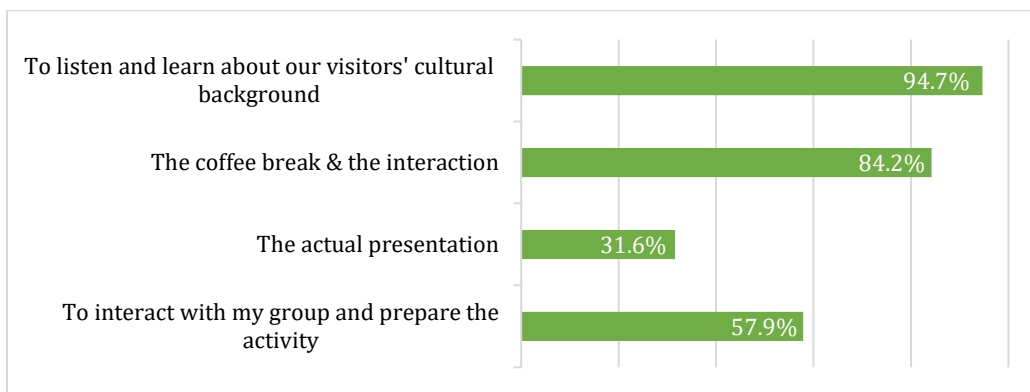

Figure 3 – The most interesting and/or rewarding aspect(s) of the activity

As for question 3 – *How do you feel about being involved in an activity with no reflection on your final grade?* – 17 students considered that every experience is a learning opportunity, regardless if it's part or not of the formal evaluation. 2 students mentioned that they would have preferred to be formally graded for their work, even though that's not reason enough to not participate. Above all, students seem to recognise the intrinsic value of such experiences where it is not all about immediate outcomes, rather about processes that contribute to personal and academic improvement. Regarding the fourth question – *On a scale from 1-5, with 1 being 'very bad' and 5 'very good', what's your overall assessment of the activity?* – the results are very positive with over two-thirds of the class (78.5%) considering it a 'very good' experience and the remaining 21.5% assessing it as a 'good' one.

Section II aimed to assess how this activity contributed to the development of specific skills. A Likert-like scale from 1 to 5 was used for every item and data analysis shows

that, on average, students consider the accomplishment of the activity as being very positive.

As can be observed in Figure 4, skills of a more cognitive and functional nature are assessed with mean values above 4. According to students' perception, research and information selection skills is the most developed item (4.3); all other items are assessed with 4.2. As shown in Table 1, for every assessed item, the value that occurs the highest number of times (mode) is 5.0. General vocabulary expansion (standard deviation 1.1) and Overall improvement of communication skills (standard deviation 1.0) are the items where opinions most diverged, which can be justified with the actual group's heterogeneity in terms of language proficiency level. Nevertheless, the remaining results are quite consistent with all minimum and maximum values between 3.0 and 5.0.
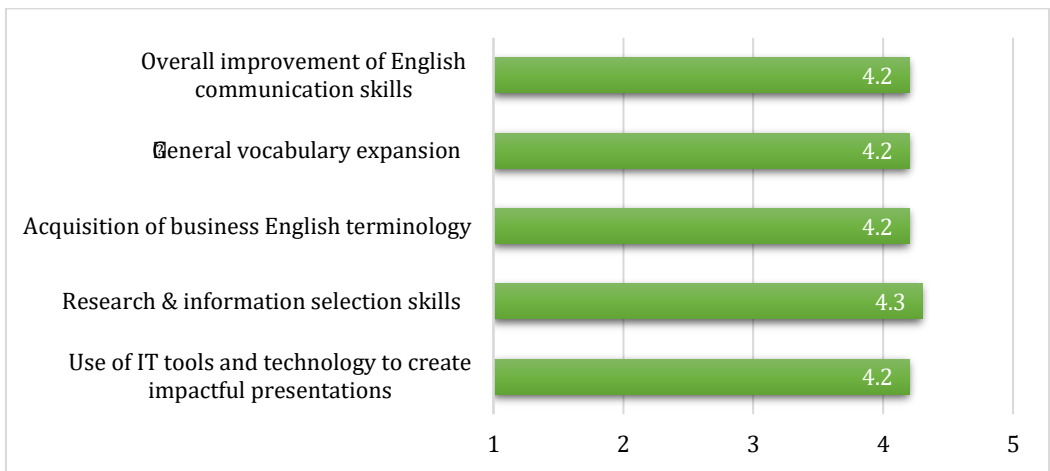
Figure 4. Developed hard skills: students' perception (mean values)

Table 1 - Developed cognitive and functional skills:
mean, standard deviation, minimum and maximum, mode and median values

	Overall improvement of English communication skills	General vocabulary expansion	Acquisition of business English terminology	Improvement of research & information selection skills	Use of IT to create impactful presentations
Mean	4.2	4.2	4.2	4.3	4.2
SD	1.0	1.1	0.9	0.9	0.8
Median	4.0	5.0	4.0	5.0	4.0
Mode	5.0	5.0	5.0	5.0	5.0
Max.	5.0	5.0	5.0	5.0	5.0
Min.	2.0	1.0	3.0	3.0	3.0

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Concerning the self-assessment of the developed interpersonal and social competencies, Teamwork (4.7), Creativity (4.6) and Recognition of cultural differences (4.6) received the most positive ratings (Figure 5).

Figure 5. Developed interpersonal and social skills: students' perception (mean values)

As shown in Table 2, with minimum and maximum values between 4.0 and 5.0 and a standard deviation of 0.5, students' opinions are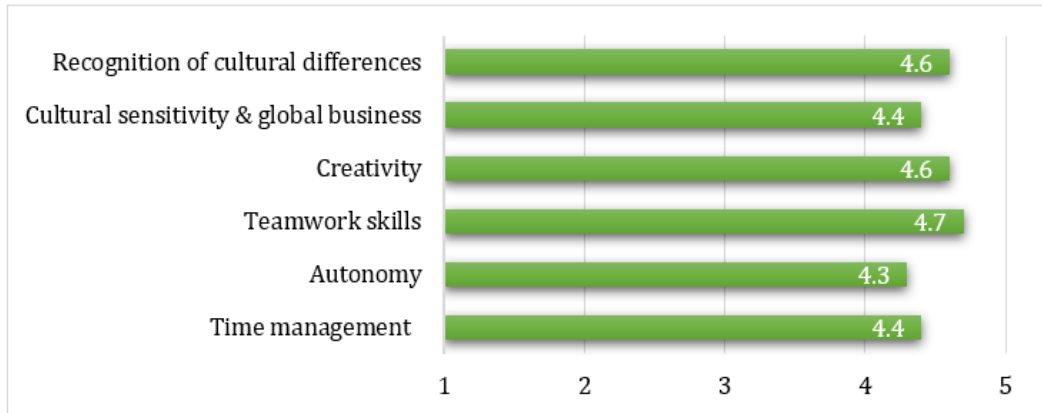 convergent. With 4.4, the recognition of the impact of cultural differences on international business interactions is another positively developed/consolidated competency, with 63% of the respondents giving it a score of 5.0. Similarly to the previous set of competencies, for every assessed soft skill, the mode is also 5.0.

Table 2: Interpersonal and social skills:
mean, standard deviation, minimum and maximum, mode and median values

	Recognition of cultural differences	Cultural sensitivity & global business	Creativity	Teamwork skills	Autonomy	Time management
Mean	4.6	4.4	4.6	4.7	4.3	4.4
SD	0.5	0.8	0.5	0.5	0.9	0.9
Median	5.0	5.0	5.0	5.0	5.0	5.0
Mode	5.0	5.0	5.0	5.0	5.0	5.0
Max.	5.0	5.0	5.0	5.0	5.0	5.0
Min.	4.0	3.0	4.0	4.0	2.0	2.0

In the final section of the questionnaire, students were asked to leave a comment and refer to the possibility of repeating the initiative in future editions of the course (open

question). The overall opinion is that the initiative had such a positive impact it should again be implemented in the future. Next, a sample of students' final feedback:

- "It was an excellent activity that should be repeated next year! It makes us practise everything we learn in English classes, including learning new cultures."
- "It is always great to meet new people and learn more about other countries."
- "I think it is a good activity for us to interact with people from other cultures, thus learning more about these cultures."
- "Close contact with other cultural realities is an excellent way to assimilate knowledge and share experiences in the first person."
- "I loved learning a little about other languages and cultures. I think that this experience is very enriching for our professional future."
- "These initiatives help a lot to understand how other cultures and countries work and it's interesting to meet people who have completely different perspectives from ours."

Discussion

Considering students' concrete performance in terms of the conducted research, content and materials creation and oral presentations/interactions, as well as their positive feedback on the developed activities, it can be considered that the proposed activity was effective, with a beneficial impact on both academic achievement and personal growth. On the one hand, some of the formal learning outcomes established for the ELBC curricular unit were successfully addressed, namely

a) the production of oral and written texts in English
b) the development of research in the field of intercultural communication
c) the oral presentation of the results of this research
d) the production and optimisation of oral and written texts through the use of online/IT tools.

On the other hand, the proposed assignment allowed students to develop their linguistic and intercultural communication skills through teamwork and collaboration, by creating content and presenting it to an audience, which contributes to the development of a broader set of critical knowledge and competences. Communication and interaction skills, organisation skills, initiative and creativity, assertiveness and problem-solving techniques, or negotiation and conflict resolution skills – all attributes that are highly valued in real-world scenarios – were, on a level or another, developed/consolidated through the activity. For some students though, autonomy and time management seemed more difficult to navigate effectively, which demonstrates that more practical activities are necessary to more adequately prepare learners for the demands of the current workplace, where not rarely professionals are asked to multitask under tight deadlines.

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Conclusions and Final Remarks

All in all, by assuming an active rather than passive role in the learning process, such learner-centred activities represent an opportunity for students to enter the workforce with experience in the areas of research, team cooperation, even critical thinking and project management, which will constitute a competitive advantage once these graduates enter the labour market. Moreover, creating opportunities for students to engage with both local organisations and individuals from diverse linguistic and cultural backgrounds allows for a better understanding of their community and the world, which not only contributes to the development of core employability skills, but also strengthens their sense of belonging and active citizenship.

On a final note, and despite being at the heart of EU's vision to create a European Education Area, the importance of FL skills and cross-cultural competency is still not fully considered, especially at some HEI, where FL courses are not included in curricular plans where FL mastery would be a major asset for students – or even systematically suppressed from plans undergoing reformulation. The option for core contents instead of investing in transferable skills that would better equip students for the global economy seems to be an ongoing trend, probably based on the incorrect assumption that language skills acquired before the end of secondary education are sufficient enough. They are not, as only four in ten learners in secondary education reach the "independent user'" level in their first foreign language (CEU, 2019). It is, therefore, recommended to look at these options more cautiously and reflect whether we are indeed preparing our students for a future where they have to quickly adapt regardless of what life throws their way.

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The Mediating Effect of Creative Thinking on Multiple-Intelligence and Thinking Patterns Among 10th-Grade Students in Abu Dhabi Private Schools

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Abstract

This study aimed at investigating the mediating effect of creative thinking on multiple-intelligence and thinking patterns among 10th-grade students in Abu Dhabi private schools. This study used descriptive approach and SEM. Also, the study sample consisted of 350 students from five private schools in Abu Dhabi. The instruments used were Gardner's multiple-intelligence scale and thinking patterns scale. Data was analysed using descriptive statistics, correlation coefficient and Amos. The results showed significant positive relationship between multiple intelligences (IV) and thinking patterns (DV) through creative thinking (MV). Direct significant positive relationships were found between interpersonal intelligence (IV) and thinking patterns (DV) (r=.241); natural intelligence (IV) and thinking patterns (DV) (r=.113); musical intelligence (IV) and thinking patterns (DV) (r=.000); bodily-kinaesthetic intelligence (IV) and thinking patterns (DV) (r=.000). In conclusion, the findings revealed the influence of creative thinking on the relationship between multiple-intelligence and thinking patterns.

Keywords: multiple intelligences, thinking skills, tenth-grade, thinking patterns, creative thinking

Introduction

Teaching thinking skills is very important for school students because they are the new generations. Schools should do everything they can to provide thinking opportunities to their students. Moreover, many teachers consider the task of developing the student's ability to think as an educational goal that they place at the top of their priorities (Jarwan, 2007). Developing thinking would develop the learning (educational) process, as it makes students more aware of their mental processes.

Thinking skills must be learned through human sciences in order not to be misused. The instrumental enrichment program is one of the worldwide programs applied to develop thinking skills, it relies on independent subjects that are not based on a specific context, and its results showed a great ability to the non-verbal deduction and this proved that thinking can be taught (Al-Otaibi, 2007). On the other hand, thinking is a goal of education, and thus, the development of thinking is an important educational function for all institutions to help the learner in dealing with this era of information, which requires individuals with mature mentality, objective outlook of ideas and attitudes, and search for reasons and evidences. Thinking is a necessary process to establish a democratic life and achieve scientific and social progress. (Ruzzuqi & Abdul-Karim, 2015).

The importance of thinking is vital to discover the universe and has a great role in life and learning success. It also improves the student's achievement level and gives him/her a sense of control over his/her thinking stemming from the achievement level which makes him/her feel confident. The elements of thinking include visualization, imagination, symbolizing, muscle activities and brain functions (Jarwan, 2014). However, educators see that the elements and tools of thinking are to expand the student's horizons by looking at ideas including the pros and cons, organizing the ideas of the learner through analyzing the problem to primary and secondary procedures, identify the similarities and differences between the phenomena as well as the interaction between ideas, and provide the environment that helps to stimulate thinking. Educators agreed upon the following thinking patterns: scientific, empirical, logical, high-level, creative, critical, analytical, deductive and reflective thinking.

The interest in the development of creative thinking is one of the priorities of educational issues in the Arab world. Many studies and researches emphasized the role of the teacher in developing creative thinking among students, including the International Conference on Thinking (1997) and Education Curriculum and Development of Thinking Conference (2000). The Development of Arab Creativity Community made a training workshop that included the development of creative

thinking skills and the importance of developing the human mind. The theories of mental formation, which tried to interpret intelligence, differed, reflecting the believers' visions of these theories of mental formation on one hand as well as reflecting the developments of methods of measurement and evaluation, and the statistical methods used on the other hand, where psychologists took a variety of ways to understand intelligence and its nature (Abu-Hashim, 2007). Multiple intelligences are not limited to one or two types of intelligences, but rather to several types of intelligences that include many aspects of students' lives in school and in real life.

Also, intelligence does not have one fixed ability measured by single measure to be determined. However, multiple intelligences are not just preparations, abilities or talents. To illustrate, Gardner suggested at the evolution of multiple intelligences that each individual possesses these intelligences in varying degrees and has a unique combination of these intelligences that can be improved to varying degrees. Moreover, Gardner showed in his book "Frames of Mind" a new concept of intelligence as an ability of solving the problems faced by the individual with unique and creative abilities that solve the problems creatively in natural situations (Hussein, 2012). Moreover, multiple intelligences proved their effectiveness in taking into account the individual differences, raising the students' level of achievement, expanding the teacher's teaching strategies, taking into account the different intelligences of students and their learning styles, and providing plans and teaching methods that grow the different sides of students' intelligences (Alhamuddin & Bukhori, 2016).

Gardner considered that thinking is the processes of the mind in handling the situation content to reach a solution. According to him, a learning style is the group of intelligences and thus, the development of one or all of them facilitates the thinking processes of students. However, Gardner has criticized the intelligence tests that measure intelligence as a general mental ability (IQ), and considered to be culturally biased, because they measure only two types of intelligences, which are linguistic and mathematical, and he argued that there is no one intelligence, but multiple-intelligences. The intelligence measured by traditional methods defines one area, while multiple-intelligences are psychological abilities that influence and develop the individual's motivation, experience and cultural factors. Also, Fasko (1992) suggested that the results for multiple intelligences-based programs are bigger and better and students with learning disabilities can improve better (Al-Khafaf, 2011).

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Problem Statement

Education should not neglect thinking skills for students through indoctrination and memorization and neglecting all activities that build the student's experiences. Also, neglecting thinking in educational institutions lead to neglecting every activity outside the classroom. This leads to a reduction of similar learning opportunities for all students, because the construction of tests is limited to retrieving only memorized information and neglects individual differences. Thus, it affects the level of quality education that the student needs in the future. (Langer, 2004).

Atiyyah (2015) noted that the academic failure of university students is due to their inability to think abstractly in solving problems efficiently. In addition, the low level of thinking among students is due to what teachers do in the classroom, i.e. the deficiency in transferring the academic content, like (What to think about?) while it is supposed to be based on understanding and evaluation of the scientific material (How to think?). Also, every student can learn how to think if he/she was granted the opportunity of training and actual adequacy practice (Atiyyah, 2015). The development of thinking skills is considered a fundamental pillar and cornerstone of all aspects of educational learning, because it prepares students for future life and qualifies them to be good and productive individuals.

Study Objectives

This study has two main objectives as follows:

1. To determine if there is an effect of relationship between multiple-intelligence and thinking patterns through developing creative thinking among 10th grade students in private schools in Abu Dhabi.

2. To determine if there is an indirect relationship between the study variables i.e multiple-intelligence, thinking patterns and creative thinking among the 10th grade students in private schools in Abu Dhabi.

Multiple Intelligences Theory

The concept of multiple-intelligence theory is considered very important. This theory changed looking at intelligence generally and introduced another concept for intelligence. It has also rejected the single general intelligence idea and showed the existence of multiple intelligences that the learner has, which is considered as the mental capabilities that learners have and can use in their everyday lives. This theory was developed by Gardner, which enables educators to find teaching methods that help learners master the subjects and create an exciting classroom environment,

including activities and assessment tools that respond to eight types of intelligences, which are linguistic, logical, spatial, musical, natural, bodily-kinesthetic, interpersonal, and intrapersonal (Al-Khuzaie & Al-Amrani, 2013). While Al-Samaili and Al-Zahrani (2013) believed that the theory of multiple intelligences is one of the important educational theories reached to by Gardner and published in his book "Frames of Mind". Since then, the theory has evolved from theoretical to practical aspect. The researchers work in each field to use them experimentally and practically to make maximum use of the development of family members and school students. (Al-Samaili & Al-Zahrani, 2013)

This theory is one of the theories that have a great role in the educational aspect, as it focused on things that were overlooked by other theories. Many talents were overlooked because of the reliance on individual assessment and intelligence tests. However, this theory helps to uncover individual abilities and differences. The educational importance of the theory of multiple intelligences is illustrated as follows. The researcher showed that this theory has a logical side (practical) which is not indispensable in the educational ground because it covers many of the sides related to the learners' studying and practical times. This makes the learner varies his educational choices so that they can cover many of the multiple intelligences, which will be as educational episodes that the student will learn from and in the end make for a bridge to the student's goals. This theory is based on the processes that the mind follows in order to solve the problem. It attempts to describe how individuals use their multiple intelligences to solve a problem and it helps teachers expand their strategies to reach as many learners as possible. Also, it has no specific rules, except for the requirements proposed by the cognitive components of each type of intelligence. It proposes solutions that enable teachers to design new curricula and to handle and present content differently. (Al-Rubaie, 2013)

Furthermore, Hussein (2018) explained that helping teachers to improve their performance in the education process and the possibility of adopting multiple intelligences as an input in teaching styles will take into consideration the nature of the learners in the classroom. Moreover, this theory stems from the learners' interests and takes into account their preferences and abilities. It also guides all individuals to the job that suits their abilities and tendencies, improves students' achievement levels and raises their levels of interest towards educational content. Gardner believes that when providing information through multiple intelligences, it produces several things, including that it reaches as many learners as possible; students realize that they are more likely to express themselves and increase the ability of learners to

present what they understood from the taught lessons in multiple ways (Hussein, 2018).

Thinking Patterns

The more intelligence is practiced by the learner through applying thinking skills the more thinking patterns are updated. There are three main types of thinking patterns including, visual thinking, creative thinking and critical thinking (Afaneh & Al-Khazindar, 2005). Visual thinking is one of the thinking patterns that educational institutions are interested in its development among students because of its many advantages. It is important to avoid hasty and impulse decisions and helps to give the best shot by taking full advantage of whatever knowledge, information, and skillset being possessed. While creative thinking is a different pattern of thinking which is a flexible thinking with the ability to change the state of mind, by changing the situation and the trend of ideas depending on the situation. It involves looking out for new ideas and concepts based on your past learning and life experiences. Critical thinking is a higher order, well-disciplined thought process, which involves the use of cognitive skills like conceptualization, interpretation, analysis, synthesis and evaluation for arriving at a valid, unbiased judgment. It is explained in details in the next section.

Creative Thinking

Creativity is a cognitive process with successive stages of production, which is to produce multiple solutions characterized by diversity and novelty in a supportive and harmonious environment. Creative thinking has a deep connection with creativity, where creativity describes the outcome while creative thinking describes the processes and mental skills for creativity, which is used by the individual to produce as many ideas as possible about the problem that he or she is facing, or the situation he or she is interacting with, these ideas are characterized by diversity, difference and non-repetition (Al-Rashidi and Al-Khaldi, 2015).

Psychologists and researchers of creative thinking perceive that the practice of creativity has sentimental tendencies as well as mental skills. Emotional orientations should be available along with cognitive skills and creative thinking, and it has components and skills that distinguish it from other types of thinking. The researchers almost unanimously agreed of the classification and components of creativity, some call them creativity skills, which include four fundamental skills of creative thinking (fluency, flexibility, originality and elaboration). (Armastrong, 2008)

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One of the most important foundations of the theories that studied creativity was Geschtal theory of creative thinking. The authors of this theory believe that creative thinking begins with a problem that the individual faces that is incomplete or deficient, and when thinking about solving it, everything is considered, examined within the overall framework, they see that it is insightful thinking, where the individual reaches the solution suddenly, and then, moves away from the problem and reaching the so-called flash insight. Looking at the problem for the first time will be different from the other times, the more we look at the problem, the more we will receive new information from reordering factors and components, which makes us change our opinion and see things we did not notice before. In the final stage, re-building the field is done to restore consistency to it (Attiyya, 2015; Ruzzuqi & Abdul-karim, 2015).

Also, another important theory in creativity was Humanistic theory. The adopters of this theory, including (Maslow), believe that all individuals have the ability to innovate and that this ability is subject to the influence of the social climate in which they live. There are creative people who are self-fulfilling and other creative people with special talents. Moreover, creative people live their reality more than those who live in the world of stereotypical theories and beliefs, and creative people are more self-expressive, more natural, spontaneous and less articulate. Furthermore, there are two types of creativity: the first type is the one that leads to the production of new things which depends on talent and hard work, while the second type is the creation of self-realization. On the other hand, Rogers believes that the creative process is an authentic production that grows in the person's individuality, materials, events and life circumstances, because creativity cannot be achieved without producing something that can be observed and that this product must be authentic, creativity from his point of view depends on two conditions, which are mental integrity and mental freedom. In addition, he considered creativity as a new production that stems from the interaction between the individual and the different experiences he acquired. However, there is a weakness in this theory, in which that it gives creativity a romantic look and that it fulfills individual's humanity more than it is a particular mentality leads to a certain output. (Assaf, 2013)

Factors Contributing to The Development of Creative Thinking

Abdullah (2017) explained that there are a number of factors that can help in the development of creative thinking and abilities of learners, which are:

Qualified teachers who are able to take care of creativity and creative minds and follow-up their students in and out of school, and communicate with their families to follow the development of their creativity.

Provide an educational environment that encourages creativity, which contains all the supplies of libraries, laboratories, computers, technologies and means of presentation.

Provide curricula with modern contents that are flexible and work on a comprehensive development of the personality of the learner, and is able to develop his/her imagination and enable him/her to develop hypotheses and discovery methods, so as to stimulate the mind and encourage research and experimentation.

Relying on assessment methods that emphasizes measuring creative abilities for learners and these measures are characterized by stability, objectivity, comprehensiveness and discrimination, that is, measuring the higher thinking levels of the students to whom creative thinking skills belong.

Conducting workshops and training courses for creativity which are equipped with all the means and techniques required for the processes of creativity.

Engaging creative students in activities and events that are characterized by depth and diversity and are under the supervision of those who have sufficient experience in creativity and care of creative minds.

Providing optional courses that respond to the students' creative tendencies and guide their path of choosing future career.

Providing programs enrichment in support of the content of the subjects that enrich the learning material in a way that contributes to the formation and development of creative abilities among learners.

Issue a special magazine or newspapers that include creative students' activities and achievements. (Abdullah, 2017)

Assaf (2013) demonstrated that psychologists and researchers of creative thinking perceive that the practice of creativity has sentimental tendencies as well as mental skills. Emotional orientations should be available along with cognitive skills and creative thinking, and it has components and skills that distinguish it from other types of thinking. The researchers almost unanimously agreed of the classification and components of creativity, some call them creativity skills, which include four fundamental skills of creative thinking (fluency, flexibility, originality and elaboration). Where Feldhusen in 1984 and Torrance in 1965 determined them by

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five skills, which are: fluency, flexibility, originality, elaboration and sensitivity to problems.

Another theory of creative thinking is the Psychoanalysis Theory. Jarwan (2014) demonstrated that Freud, the founder of this theory, believes that creativity is the expression of defensive tricks called (transcendence or sublimation), and through these defensive tricks, the individual expresses his potentials in a form that is accepted by society. Creativity arises as a result of psychological conflict at the beginning of the person's life (as a defensive trick) to counteract the libido energy which society does not accept to express. According to Freud, creativity is the creative person moving away from the familiar reality to an imaginary life, and he has linked creativity and other behaviors with the set of motives driven by the unconscious. If the person cannot express his/her desires and tendencies freely, those desires must proceed in other ways or be compensated (Jarwan, 2014).

The Importance of Multiple-Intelligence and Creative Thinking Skills in Teaching

Based on the theories and previous studies, there is a significant relationship between multiple-intelligence-based learning and creative thinking among students. For example, the study conducted by Yi, Sulaiman and Baki (2015) about the role of multiple intelligences and creativity in students' learning style to examine the relationship between creativity and intelligence. The study findings showed that students from both gender possessed high intelligence in common domains, namely interpersonal, followed by intrapersonal and musical. This study concluded that it is important to identify students' intelligence profile as well as their creativity level according to domains. This is to aid students learning, providing them with the optimum learning environment through their preferred learning medium and help them to achieve their fullest potential in their respective talented areas.

Also, Abdi and Rostami (2012) have studied the effect of multiple intelligences- based instruction on Students' creative thinking ability at 5th grade in a primary school. The purpose of this study was to examine the effect of multiple intelligences- based instruction on students' creative thinking ability at 5th grade in primary school. The researchers have used Torrance's Creative Thinking Test as pre-tests and posttests. Results which were analyzed by covariance indicated that multiple intelligences-based instruction significantly stimulated students' creative thinking ability. Hence, it was concluded that strategies founded on MI theory were more effective in improving students' creative thinking ability than traditional teaching. Moreover, Widiana and Jampel (2016) have conducted a study about improving students' creative thinking

and achievement through the implementation of multiple intelligence approaches with mind mapping. This classroom action research aimed to improve the students' creative thinking and achievement in learning science. It was conducted through the implementation of multiple intelligences with a mind mapping approach and describing the students' responses. The findings showed positive results, where students felt happy in learning science through the implementation of multiple-intelligences with mind mapping and this method has improved students' creative thinking.

Teaching based on multiple-intelligence has a great effect on students' learning and creative skills. Also, it helps to increase students' motivation to learn different subjects. However, there is a lack of studies investigating the effect in the social studies and national education subject. Hence, the current study aimed to investigate and prove that teaching based on the multiple-intelligence theory is more effective in improving students' creative thinking ability than traditional teaching in the subject of social studies and national education.

The Relationship between Multiple-Intelligence and Thinking Patterns

The researcher believes that there is a relationship between multiple-intelligence and thinking patterns. That is what many researchers and psychologists in their studies and researches showed, no researcher or student can deny that relationship. Intelligence does its role through thinking and affects it, and through intelligence thinking skills can be updated, growing thinking skills needs high intelligence from the individual.

Al-Sorour (2003) stated that thinking and intelligence are connected to each other and are fundamental to the learning process. Intelligence depends either on genes or early education or a combination of both. In addition, thinking is the skill practiced by intelligence through experience-based activities. This is the true relationship between intelligence and thinking.

The researcher sees that critical thinking must be integrated into the curriculum, and that it must be taught in schools. Students must know the critical thinking steps because they benefit their practicing and learning lives and make them aware thinkers of what happens around them. The teaching strategies must include these critical thinking. Training students in the steps of critical thinking, such as making assumptions, collecting and experimenting data, and arriving at results makes them successful researchers and thinkers in the future. Critical thinking can be taught in different ways and methods. Teachers must include critical thinking in their teaching

methods and not teach in the traditional or old-fashioned way of teaching because information change from time to time but teaching students in new ways will stimulate the students' thinking skills that will definitely help them in the future.

Teaching thinking helps students to discover how to use their multiple intelligences in the taught lesson. Teaching students the practical applications needed to enhance and improve the weaknesses in their intelligence abilities and give them the opportunity to use their different types of intelligences in the classroom. It is also important to create strategies to help them translate their knowledge into forms of intelligence and conduct special events for students to discover their multiple intelligences and help them perform exercises to learn how to activate each type of intelligence (Atiyyah, 2015).

Research Design

The current study uses the descriptive approach. The descriptive approach explains and describes what is really happening, and is concerned with the conditions and relationships that exist, prevailing practices, current procedures and processes, beliefs, different viewpoints and individuals 'directions about an issue. Descriptive research includes surveys and exploratory interrogations in different fields. The primary goal is to describe the current state of a phenomenon. Therefore, the researcher compares the differences between groups or the relationships between them and the variables in this type of research differ in type more than in the amount (Allam, 2001).

Also, this study has used the Structural Equation Modeling Method (SEM). It depends on a descriptive model of the relationships between different variables being studied, is one of the best descriptive statistical methods that can be used in analyzing the correlation coefficients between the variables to direct or indirect effects. In addition, the evaluation of the relative importance of the independent variables in determining or interpreting the total differences of the dependent variable becomes clear when it is studied within the framework of the structural equation modeling. (Sahrawi & Busalb, 2016)

Sampling Method

The study sample consisted of 350 secondary level students studying in private schools in Abu Dhabi. Table (1) below shows the distribution of the study sample in Abu Dhabi private schools.

Table 1. *The Numbers of Tenth Grade Students in Abu Dhabi*

School name	No. of males	No. of females	Total
Al-Rawafid	40	60	100
Al-Shuhub	0	35	35
Al-Mamurah	0	50	50
Al Bateen (Aldar Company)	60	50	110
Gling (ADNOC Corporation	100	55	155
Total	160	190	350

Source: UAE Ministry of Education 2019

(https://www.moe.gov.ae/En/Pages/Home.aspx)

Research Instruments

The following instruments were used in this study:

Howard Gardner's Multiple-Intelligence Survey Instrument: The researcher found that Gardner scale is best suited to measure multiple intelligences, where many studies have used this scale, including: (Al-Jawaldeh, Al-Qamish, & Muqableh, 2011; Al-Shami, Nubi, & Al-Hamad, 2013; Rayyan, 2013; Armstrong, 2008). The scale consists of eight types of intelligence which are, linguistic, logical, interpersonal, intrapersonal, musical, spatial, naturalistic and bodily kinesthetic.

Thinking Patterns Scale: The researcher found the scale of Torrance's test which was standardized by (Muhammad Thabet Ali Al-Din) as well as the scale of (Ahmed Al-Mutairi) who developed it with reference to the study of (Alhamuddin & Bukhori, 2016). In addition to the scale of (Farouk Abdel Salam and Mamdouh Suleiman) which was standardized by (Afaneh & Al-Khazindar, 2005). It is best suited to measure thinking patterns, as many studies have used this scale. The scale consists of three dimensions, namely critical thinking (recognition of assumptions, interpretation, evaluation of arguments and deduction), creative thinking and visual thinking (successive matrix, visual symmetry, visual succession, and visual object recognition). The point-scale used are (yes, no, strong, weak, true and false).

Research Findings

The results showed significant positive relationship between multiple intelligences (IV) and thinking patterns (DV) through creative thinking (MV). Direct significant positive relationships were found between interpersonal intelligence (IV) and thinking patterns (DV) (r=.241); natural intelligence (IV) and thinking patterns (DV)

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(r=.113); musical intelligence (IV) and thinking patterns (DV) (r=.000); bodily-kinaesthetic intelligence (IV) and thinking patterns (DV) (r=.000).

Then, to further establish the full or partial mediation of creative thinking skill. Sobel test was conducted to determine the overall significant mediating effect of creative thinking skills on relationship between multiple intelligence factors and thinking pattern. The outcome of Sobel test analysis and two tail probability value revealed similar findings to that of structural equation model analysis on mediating role of creative thinking in the relationship between Musical intelligence and thinking pattern. The result reveals that creative thinking skill (β=0.771, P=0.0000) mediates the relationship between musical intelligence and thinking pattern. Similar Sobel result was also obtained for bodily kinesthetics. Creative thinking skill (β=0.771, P=0.0000) mediates the relationship between bodily kinesthetics intelligence and thinking pattern. More so, the outcome of Sobel test analysis and two tail probability value revealed similar findings to that of structural equation model analysis. Similarly, Sobel mediating test shows that creative thinking (β=0.771, P=0.0458) mediates the relationship between interpersonal intelligence and thinking pattern. In addition, Sobel mediating test shows that creative thinking (β=0.771, P=0.0192) mediate the relationship between Natural- intelligence and thinking pattern.

Discussion

The results show that the path coefficient of direct between multiple-intelligences and creative thinking variables was of practical importance and statistically significant. This indicates that multiple intelligence factor—musical and bodily kinesthetic intelligence significantly influence students' creative thinking skill. Previous literatures have revealed that musical and bodily kinesthetic intelligence of students have effects on creative or innovative thinking capacity of individual thinking skills of students (Hilal, 2008), while some studies such as (Al-Sarraj's study, 2011) did not find any direct influence of musical and bodily kinesthetic intelligence on creative thinking skill. There is evidence showing the direct effects of musical and bodily kinesthetic intelligence on creative thinking skill (Ahmed, Seman, Awang & Sulaiman, 2014). On the other hand, interpersonal, intrapersonal, verbal linguistic, spatial, natural and logical intelligence have been found to have direct influence on creative thinking skill (Al-Sayyed, 1994). This is true when teacher wants to work on the thinking skills of students, he/she must take into consideration the role of musical and bodily kinesthetic intelligence capacity of the student (Hilal, 2008; Najm, 2007). The study of (Loori, 2005) revealed that there is an impact of multiple intelligence, including musical intelligence on the development of learning styles and patterns of

thinking, including creative thinking. The studies of (Al-Rashidi & Al-Khaldi, 2015; Mahmoud & Al-Maharmah, 2012) have explained the influence of multiple-intelligences, including bodily-kinesthetic intelligence on the development of creative thinking among students. The study conducted by (Winarti, Yuanita & Nur, 2019) showed the effect of bodily-kinesthetic intelligence in particular and multiple-intelligences in general on the development of thinking skills, including creative thinking among secondary school students.

It has been shown that there is a direct relationship between linguistic intelligence and thinking patterns, as well as an indirect relationship between bodily-kinesthetic and musical intelligence and creative thinking, and also a direct relationship with the rest of the multiple intelligences and creative thinking, when teachers are activated to teach thinking skills in the lessons and studies in the secondary stage (tenth grade). Moreover, the researcher believes that the relationship between multiple intelligences and thinking patterns and skills is most evident in linguistic, musical and bodily-kinesthetic intelligence, as their effects appear clearly, and the teacher can highlight them easily. This does not reduce the existence of the relationship between the rest of the multiple intelligences and the thinking skills and patterns, but rather does not appear at times. Clearly for the learners, it may need many accurate measures to measure them and also to distinguish most of the learners with linguistic, musical and bodily-kinesthetic intelligence, as it constitutes a large proportion of their learning. However, educational systems do not give much attention to the development of the rest of the multiple intelligences, such as natural and social intelligence. This leads to the creation of weakness and lack of strong association between these multiple intelligences and thinking skills and patterns.

Also, the results show that the path coefficient of direct between creative thinking skills and thinking pattern variables was of practical importance and statistically significant. This indicates that creative thinking skill significantly influence students' thinking pattern. Literatures have revealed that creative thinking skill of students have effects on thinking pattern of students (Widiana & Jampel, 2016), while some studies such as (Foong, Shariffudin & Mislan, 2012) did not find any direct influence creative thinking skill on thinking pattern. There are evidences showing the direct effects of creative thinking skills on thinking pattern (Al-Saliti, 2006).

Conclusion

This study has added a new perspective to current literature on multiple intelligence in teaching and learning by testing the mediating effect of creative thinking. The results of this study have demonstrated a strong and positive relationship between

the predictors and criterion variables. Multiple intelligence factors--verbal linguistic, bodily-kinesthetics, intra and interpersonal intelligence, logical, musical, and natural intelligence indirectly influence thinking pattern through creative thinking skills. Thus, it can be asserted that multiple intelligence had a significant and positive direct influence on thinking pattern via creative thinking skills. Hence, it can be concluded that the proposed model supported causal relationship between multiple intelligence factors, creative thinking skills and thinking pattern of students in school. It is recommended to conduct further studies on multiple intelligences, thinking skills, and thinking patterns applied on different academic levels. It is also important to study the relationship and linkage between the study variables and other variables such as learning styles and educational subjects and curricula to prove the necessity of including multiple intelligences and thinking skills & patterns in school curricula, textbooks and class activities.

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Vocabulary Control in Nautical Information Resources

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Abstract

Nautical charts are an essential information resource for safe navigation. However, they are not only a useful resource for navigators; According to the International Hydrological Organization (IHO), they essentially fulfill two functions: 1) Maritime navigation, since most hydrographic services have the obligation to provide coverage of the nautical charts of their national waters, in all coastal waters, including major ports and smaller marinas of purely local interest. and 2) as a source of information, since national nautical charts present a detailed configuration of the seabed. Information on the shape of the seabed is required by a diversity of users in addition to navigators; for example, engineers interested in onshore construction, dredging contractors, oceanographers, defense agencies, coastal zone managers, etc. Traditionally, there are three essential elements that play an important role in information retrieval: title, author, and subject access point. Among the latter, one can distinguish indexing by natural language and by controlled vocabularies. The thematic access points, makes it easier for the user to search and retrieve all types of resources that satisfy their information needs. Traditionally in the processing of nautical charts the natural language is used predominantly, motivated by a lack of availability of a controlled vocabulary specific to the área in Spanish. The objective of this work is aimed at establishing the criteria for the construction of a controlled vocabulary in Spanish in the field of nautical charts.

Keywords: nautical charts, controlled vocabullary, subject cataloguing, information needs, information retrieval, thesauri construction

Introduction

Nautical charts are a sort of cartographic information resources, which involve a graphical representation that provides highly significant information to ensure safe navigation. It indicates the depths of the sea, the nature of the seabed and the detailed maritime configuration. However, it is not only users of nautical charts who need to orient themselves to make a journey through navigable waters. The information provided by nautical charts exceeds the purpose for which they were originally

created. According to the Hydrographic and Oceanographic Service of the Chilean Navy (2003), a nautical chart is a graphic representation of the navigable waters and the adjacent coast drawn by means of an adequate projection system according to its purpose. It indicates the depth of the sea, the nature of the seabed and the detailed maritime configuration. It must also show the natural and artificial objects that exist fixed on land, the dangers to navigation, location of lights and other aids that are visible from the sea that can serve as a reference to the navigator to obtain their situation and draw directions.

Nautical charts in their evolution have been gaining importance over time not only as a support for navigation and maritime transport. They have also acquired importance for the determination of maritime safety processes in coastal procedures and in the prevention and monitoring of crisis situations created by ship accidents, in many cases with polluting or dangerous loads.

Nautical charts are also a tool to carry out environmental studies, studies related to natural resources, urban planning, tourism, etc.

In this sense, according to the Naval hydrography manual, the use of nautical charts is related to the following activities, namely

Maritime transport

More than 80% of the international trade in the world is transported by sea. Maritime trade is a basic element for the economy of a nation. Many areas and ports in the world do not have accurate or adequate coverage of their nautical charts. Modern nautical charts are necessary for safe navigation through the waters of a country and nearby coasts and for entry into its ports. The lack of adequate nautical charts prevents the development of maritime trade in the waters and ports of the nations in question. The shipping industry needs efficiency and safety. Poorly mapped areas and a lack of information can make trips longer than necessary, and can even prevent optimal loading of ships, thus increasing costs. The savings in time and money that result from the use of shorter and deeper routes and the use of larger ships or deep-draft freighters can represent important economic income for the industry and national commerce. It is also very important to note that Chapter V of the SOLAS (Save Our Life at See) convention considers a ship worthless if it does not carry the updated charts necessary for the intended voyage.

Coastal zone administration

Proper management of the coastal zone includes points such as the construction of new ports, and the maintenance and development of existing ones; dredging operations for the maintenance of charted depths and for the establishment, monitoring and improvement of channels; control of coastal erosion; land reclamation from the sea; for the establishment and monitoring of the guidelines that regulate the discharge of industrial waste; extraction of mineral deposits; aquaculture

activities; transportation and public works projects including construction of near-shore infrastructure.

The first essential data for the aforementioned projects are obtained from the coastal surveys carried out by the national Hydrographic services, the information of which is included in the corresponding nautical charts. Users of hydrographic information go beyond the traditional user group, mariners, including government agencies, coastal authorities, engineers and scientists.

Exploration and exploitation of maritime Resources

Although the information contained in the nautical charts, prepared by the national hydrographic offices, have been designed mainly to support the safety of navigation, such information also constitutes a considerable economic value for the administration and exploitation of the natural resources of the sea. For example the identification of minerals in marine sedimentary areas. The fishing industry also needs the information contained in the nautical charts, not only for the safety in the navigation of its vessels but also for the identification of the fishing areas.

The trend in modern fisheries science is toward habitat management, bathymetry, and other oceanographic data that will provide input of important data for proper species management and development.

Environmental protection and management

An essential factor for the protection of the environment is safe and accurate navigation. Waste and oil spills are a major destructive factor for pollution, the economic consequences are more devastating than imagined, in some cases, they have been estimated at 3,000 million dollars for a single incident. The value of shipping services for the protection of the marine environment has been recognized internationally. In this regard, it should be noted that Chapter XII of Agenda 21 of the United Nations Conference on Environment and Development (UNCED), held in 1992, recognized that "Nautical mapping is of vital importance for the navigation safety".

Methodology

The research methodology followed to address the issue raised has been based on a qualitative research process evaluating previous works of the author that allowed to establish the starting point of the present work

Subject cataloguing and information retrieval

Considering the cataloging principles of 2009 and its modification of 2016 (IFLA, 2016), the catalog should be an efficient and effective instrument to find information resources that allow the user to identify a particular resource, a set of resources that belong to to the same work, expression, manifestation; those associated with the person in charge of the information resource (s) or all the resources of a given subject, the latter subject of interest in this writing. From this possibility, the user will be able

to identify, select and retrieve the resource and / or related resources that he has been able to identify as a previous step to accessing the primary information. It is vitally important that the catalog, as far as the thematic description is concerned, enables the user to move (navigate) linking concepts, objects, events and places, constituting an element of selection, identification and information on the potentialities that the collection can provide. to satisfy your needs.

The cataloging principles establish that among the essential access points, controlled subject terms must be included as one of the necessary elements to enhance the identification and selection possibilities that the user has before going in search of the primary information resource.

A thesaurus according to ISO 2788-1986 defines a thesaurus as:"a controlled and dynamic vocabulary, composed of terms that have semantic and generic relationships between them and that is applied to a particular domain of knowledge".For his part, van Slype (1991) defines a thesaurus as: "a structured list of concepts intended to uniquely represent the content of documents and queries within a given document system and to help the user in the indexing of documents and queries."

Most authors agree that the first function of a thesaurus or any controlled language is to support the information retrieval process by constituting a guide that allows choosing terms for indexing and retrieving information.

According to ISO 25964-1 standard, The traditional aim of a thesaurus is to guide the indexer and the searcher to choose the same term for the same concept [...] a thesaurus should first list all the concepts that might be useful for retrieval purposes in a given domain. The concepts are represented by terms, and for each concept, one of the possible representations is selected as the preferred term [...] Secondly, a thesaurus should present the preferred terms in such a way that people will easily identify the one(s) they need. This is achieved by establishing relationships between terms — and/or between concepts — and using the relationships to present the terms in a structured display

In the information retrieval process prior to the development of thesauri, the use of character strings was common. With the advent of the thesaurus, the choice of preferred terms improved the information retrieval process

On the other hand, according to ISKO in the language of normal discourse one concept can be expressed in many different ways, and conversely one term can have many different meanings. To achieve the aim of always choosing the same term for the same concept an artificial indexing language has to be established, in which synonyms are controlled, homographs are disentangled, and each preferred term is allowed only one meaning (although some may have very broad meanings). The thesaurus conveys that artificial language. Thus the essential core of a thesaurus is a collection of concepts represented by terms and interlinked by relationships, of which the three main types are equivalence (between terms), hierarchical (between concepts) and

associative (also between concepts). By long established convention, the tags USE and UF (Use For) precede preferred and non-preferred terms respectively, and the equally characteristic tags BT, NT and RT indicate broader, narrower and associatively related concepts respectively.

The thesaurus can also be viewed as a complex network of interrelated concepts, in which each concept is labeled by one or more terms, in one or more languages, depending on whether it is a monolingual or multilingual thesaurus. These are some of the main characteristics

The semantic scope of a concept is indicated partly by the totality of terms labelling it, partly by the hierarchical relationships linking it to broader and/or narrower concepts, and where this is not enough, by a scope note and sometimes term definitions

Admissible hierarchical relationships are of three types: generic, instantial or partitive (subject to some restrictions on the eligible types of partitive link). It is optionally possible to distinguish these types, using the tags BTG/NTG, BTI/NTI, BTP/NTP respectively

dmissible associative relationships apply to non-hierarchical situations wherever two concepts are so associated that an indexer or a searcher should consider using one of them as well as, or instead of, the other
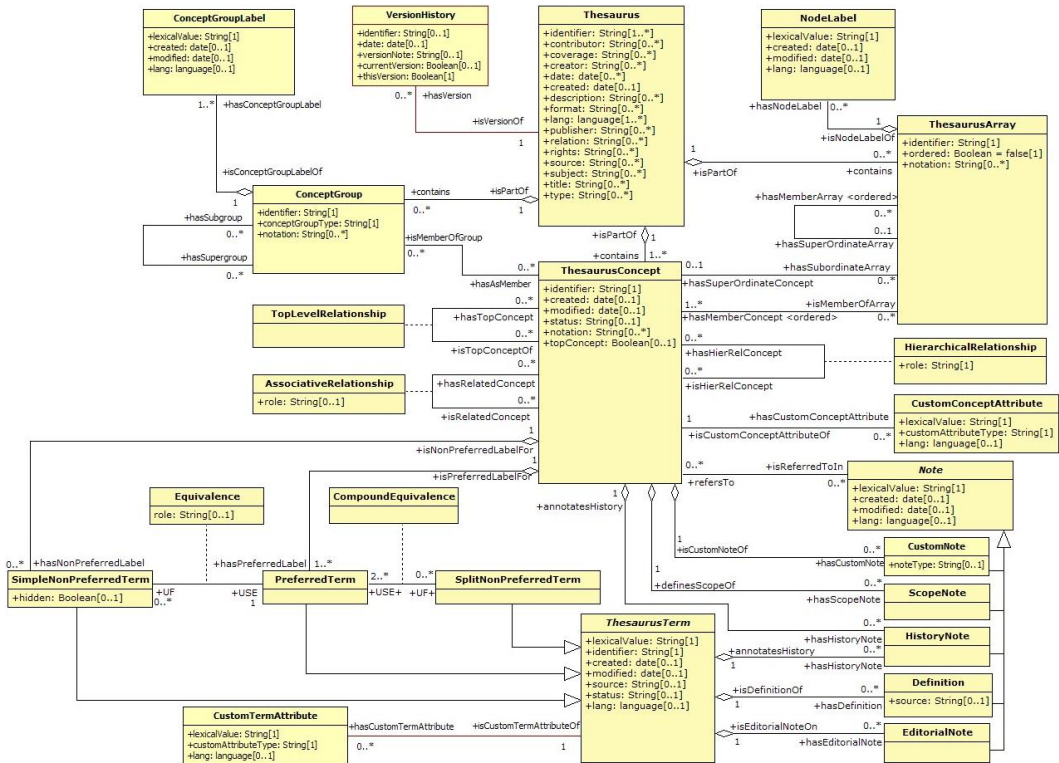
Concepts may be presented and ordered in arrays with node labels, following the principles of facet analysis

Concepts may also be grouped in loose structures to suit particular domains or applications

Concepts not explicitly included in the thesaurus may be represented by combinations of preferred terms (in situations known as "compound equivalence"

It is also possible to add metadata to terms, to concepts, to relationships and to the thesaurus as a whole, such as dates of introduction or change, version history, housekeeping data, copyright information, etc.

According the ISO 25964-1 international standard ISO 25964-1 a tersaurus can be defined as a controlled and structured vocabulary in which concepts are represented by terms, organized so that relationships between concepts are made explicit, and preferred terms are accompanied by lead-in entries for synonyms or quasi-synonyms.

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A data model provided by ISO 25964-1 is shown

Subject Cataloguing and nautical charts

Subject description, through the thematic access points, makes it easier for the user to search and retrieve all kinds of documents that satisfy their information needs. According to (Stubbs et al., 2016) in the processing of nautical charts, the natural language is used predominantly, motivated by a lack of availability of a controlled vocabulary in Spanish specific to the area. The closest are vocabularies of general cartography that do not reach the specificity required for the description of the content of this class of resources. The general controlled vocabularies used in various information units and Libraries to process nautical charts, such as those with a certain degree of specificity, present important limitations for the description of content, making it necessary to include summaries or notes in bibliographic records. In four document languages used for the processing of nautical charts, it was observed that no selected vocabulary could represent at least 50% of the keywords selected for the content description in this class of information resources. (Stubbs, et. Al .; 2019)

It is important to note that many information agencies such as libraries and documentation centers have nautical charts given the interest and needs of the users that they must satisfy.

The control of vocabulary at the time of subject cataloging is essential for the retrieval of information in aspects such as the identification and link between related resources. Control of vocabulary in these sort of resource is related to general aspects of description, issues related to topography, underwater hazards, hydrographic data, and geographic location.

Given the particular characteristic of the cartographic resource and especially the nautical charts, one of the important aspects to take into account is the place or geographic location as terms to control for an optimization of the information retrieval.

Although in many cases the geographical location with which the user would go to look for the information is found or is part of the title, this is not always the case. And even in this case, the record would cease to fulfill one of the essential functions of the catalog, which is the link with other related documents, a situation that would not be exposed when describing only the document with the natural language, omitting the relationships and links that a cartographic resource may have with the rest. On the other hand, other nautical charts that are not linked to a specific locality or population are named by the geographical coordinates and since a geographical coordinate as a keyword is no longer very friendly. From this situation it is necessary to have a controlled vocabulary that in addition to univocally identify the terms and concepts that the resource identifies thematically (type of nautical chart, navigational warnings, natural or artificial underwater risks, aspect of the topography, etc.) It is important that the controlled vocabulary incorporates the standard terms of the location and its hierarchical relationships. This last aspect is what would allow the links to be established within the catalog between the different records that have some kind of hierarchical or associative relationship linked to geographic location.

Discussion

The lack of a controlled vocabulary in Spanish for the processing of nautical charts deprives the cataloger of a tool to incorporate one more element in information retrieval. Some studies suggest that the majority of searches were subject searches (Gross and Taylor, 2005),. Gross and Taylor found that more than a third of records retrieved by keyword searches would be lost without subject headings. Which would indicate that not only is access by subject another element but a very important one that numerous studies, in various disciplines, have found that a quarter to a third of records returned in a keyword search would be lost without controlled vocabulary. So the lack of some kind of controlled vocabulary to retrieve information in relation to nautical charts directly affects the satisfaction of the user's needs in this area of knowledge.

Most of the studies carried out on information retrieval by subject have concluded that the greatest success in retrieving information is obtained with hybrid systems (systems that combine natural language with vocabulary control). According to

Lancaster (1991), systems that do not control vocabulary present problems when performing conceptual searches, so a combination of natural language and controlled language improves information retrieval.

Conclusion

Based on the foregoing, the processing of the information contained in nautical information resources (nautical charts) in Spanish presents weaknesses related to the lack of languages that allow controlling the vocabulary used when indexing an information resource.

As explained above, an attempt has been made to correct this deficiency from the use of natural language, which presents drawbacks related to the specificity of the terms with which the resource is described.

On the other hand, the lack of a controlled vocabulary makes the description present polysemics, ambiguities and inaccuracy in the results of an information search and at the same time it deprives one of the most important functionalities that controlled languages have is the link that allows establishing with similar resources by establishing hierarchical, associative and equivalence relationships between the terms

Finally, the development of a controlled vocabulary for the processing of nautical charts makes it possible to comply with one of the cataloging principles established in 2009, which implies the possibility that the user can navigate through the catalog.

The development of a controlled vocabulary in Spanish for the description of nautical charts constitutes an essential tool in improving information retrieval.

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