Chapter 9
Entrepreneurship in Teaching: The Teaching of Economics A With the Application of Active Methodologies – Case Study

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ABSTRACT

In Portugal, the teaching-learning process in high school education, in some matters, is "measured" by an external national exam classification. Consequently, many teachers believe that the teaching-learning process can only be accomplished through the expositive method, where the teacher is the primary vehicle for transferring the contents in a structured and organized way. However, this methodology does not equip students with critical thinking or mechanisms for problem-solving and, consequently, demotivates students. In the case study, students in extracurricular entrepreneurialism competitions and their evaluation grades on formal curricula subjects improve. Students felt more motivated to learn and understood more about the world of work. This study will use a qualitative methodology supported by quantitative data to present the planning of tasks and procedures applied in this context.

INTRODUCTION

When society, in general, thinks about education, they tend to feel nostalgic (Bailey & Boget, 2022; Crystal, 2017; Pazur, 2020), but when they are asked about what they miss the most in specific, only a few of them identify classrooms as a pleasant place. Instead, they characterize it as a dull and overly formal space (Crystal, 2017).

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In the words of Conradty & Bogner (2022), "Education is supposed to lay the foundation for vocational maturity. However, young people lose their motivation to learn at school instead" (2022, p. 1).

Teaching-learning process, in most countries, is based on a regime where the teachers have a prominent role in the classroom, and students are consigned to a role played through passivity, where subjects must be learned and replicated in assessment tests (Joaquim, 2018).

In Portugal, the teaching-learning process in high school education, in some matters, is "measured" by an external national exam classification. Consequently, many teachers believe that the teaching-learning process can only be accomplished through the expositive method, where the teacher is the primary vehicle for transferring the contents in a structured and organized way (Joaquim, 2018; Leão, 1999).

According to Konopka et al.(2015), this methodology has several disadvantages (Konopka et al., 2015). However, for this chapter matters, two of the most concerning ones are the lack of motivation by students and the absence of critical thinking tools.

Students' motivation in the classroom to learn must be the most important topic for teachers because motivation leads to learning. Steinmayr et al. (2019) wrote that "achievement motivation is not a single construct but rather subsumes a variety of different constructs likeability self-concepts, task values, goals, and achievement motives" (2019, p. 1).

Despite identifying students as the single element that is demotivated in school, it is essential to understand that Portuguese teachers, in particular, are also unbundled with the formal education system. Not only because they feel overwhelmed by bureaucratic procedures but also because of the feeling of disconnection regarding their previous love for the teaching process, consequently they are in the most significant profession that feels burned out at work, with 44% of K-12 education on the top of *U.S. Workers' Burnout Rates by Industry, 2022* according to Marken & Afrawal (2022). Whether this study is about U.S. teachers, applying it to the Portuguese scenario is possible.

However, the "COVID-19 pandemic exacerbated existing challenges and introduced new ones to a profession already struggling" (2022).

Schools were closed, and the teaching-learning process became even more complicated because, suddenly, everything went to a remote way of doing things (Figueiredo & Joaquim, 2022).

It is important to expose that in 2018, according to OECD (2018), Portugal had 47% of teachers aged 50 or more, and this generation tends to lack digital skills (Figueiredo & Joaquim, 2022). For this matter, if teachers struggle for connection and love for the profession, added by the students' demotivation, the challenges become a gigantic task that has repercussions in burnout and abandonment of the profession. In the words of Mineo (2022)

According to the U.S. Bureau of Labor Statistics, there has been a net loss of 600,000 educators in the U.S. since January 2020. Furthermore, in a recent survey by the National Education Association, the country's largest union representing about 3 million educators, 55 percent of teachers said they are planning to leave the field (2022).

Of course, this chapter is not about the reasons for the great quitting of teachers but about active methodologies, in general, and entrepreneurship in education in specific. First, however, it is essential to realize the primary feelings of teachers to understand the importance and lack of some active methods in the teaching-learning process.

Nowadays, and after the COVID-19 pandemic, most teachers are tired and practice obsolete methodologies that have become uninteresting to students. Arends (2008) wrote that the main characteristics

of teachers in the 21st century were to give the students critical thinking regarding their learning process through active methodologies used by the teachers.

Assessment and learning methodologies of teaching are the components of the learning contexts, so it will be even more relevant to produce changes in the educational systems in which the construction and development of diversified skills are necessarily focused, namely at the level of autonomy, cooperative work, critical thinking, and problem-solving capacity (Rodrigues & Cabrito, 2022).

With the importance of the so-called traditional methodologies, it is crucial to diversify the tools and instruments to promote motivation in the teaching-learning process of the students. Becker (2009) alludes that the human being is a project in constant construction. On that matter, the teaching process must include the individual's environment to build interactive knowledge.

Student motivation relies on two different approaches Achievement Motivation and Academic Achievement. The first is understanding students' ability and belief in completing tasks; the other is academic grade goals (Steinmayr et al., 2019). So, bringing extracurricular challenges to the classroom will empower them to believe in their abilities and skills and improve their school results.

Using active methodologies by teachers in the classroom becomes challenging, as it forces the teacher to commit to the student's objectives and to plan activities with playful-pedagogical objectives (Joaquim, 2018); A. (or. . Rodrigues & Cabrito, 2022).

The transmission of knowledge by the teacher cannot or should not be neglected, nor the formal curriculum of the subject, but through effective planning with objectives outlined measurably and pragmatically, motivation for learning by students tends to improve (Arends, 2008; Fernandes, 2007a; Leão, 1999).

"The fundamental role of education is to equip students with the competencies they need – and will need – to succeed in society" (OECD, 2019a, p. 6).

With this guideline in mind, this document intends to present a case study, which took place in a school on the outskirts of Lisbon from 2017 to 2021, of Economics A subject in 4 classes of 10th grade and four classes of 11th grade.

Economics A is taught in regular education in the socioeconomic sciences course in secondary education and is a National Examination subject in Portugal. Consequently, it presupposes an expository and theoretical teaching methodology because it is focused on the final quantitative results.

During this period, the average of the external national examination of Economics A in that institution rose by six values. In addition, the students in question participated in several extracurricular activities (for this study will be privileged the entrepreneurial contests), where they conquered several places on the podium.

Regarding this introduction, the questions of this work rely on the following:

- **Does using different active methodologies in the teaching-learning process contribute to the final quantitative results of the students in the Economics A subject?**
- **Did the students feel more motivated to acquire knowledge of the formal curriculum of the subject?**

Through the discussion of the results of this study, it is intended to understand the importance of entrepreneurship in education to equip students with skills outside the formal curriculum and to motivate them in the teaching-learning process. According to OECD (2019), "Schools play a crucial role in helping young people to discover, develop and define their talents – including their creative talents" (2019a,

p. 6). So, to develop students' talents, critical thinking is fundamental to encourage young people to construct their knowledge.

The objectives of this chapter rely on the following:

O1 – Identify the critical motivation in students for learning formal curricula of Economics A subject.
O2 – Systematize the active methods of the teaching-learning process.
O3 – Conceptualize entrepreneurship in education.

Regarding this case study, the teacher signed up their students in extracurricular entrepreneurialism competitions (like *The Enterprise*, promoted by Junior Achievement Portugal), scientific knowledge competitions called *Olympiads of Economy* (promoted by Coimbra University - School of Economics) or *Generation Euro* (promoted by European Central Bank) and others that will be mentioned during this study to illustrate the student's achievement.

The structure of this chapter is based on three main sections, such as students' motivation: the key to learning, which will be exposure to the causes and consequences of this feeling. The second section intends to conceptualize and identify active methodologies in general and entrepreneurship in education, regarding their critical advantages in their application in the classroom. Moreover, the last section comprehends a real case study from 2017 to 2021, where active methodologies and entrepreneurship in education were applied in the teaching-learning process regarding academic results, students' motivation improved in school subjects, and their achievements in the extracurricular contests.

METHODS

In this chapter, mixed methods research of a sequential exploratory kind will be conducted through two stages: a) a qualitative overview of the literature review regarding active methodologies and teaching methods of entrepreneurship, and b) validating the developed framework. Data were collected through "triangulation" (study of documents, investigating theoretical basics and the literature, and close-ended questions surveys to the student's sample).

The research method of the first part of this chapter is based on a qualitative overview of the literature review of academic articles regarding student and teacher's motivation and active methodologies studies, and opinion articles by academic experts in internationally renowned online magazines and newspapers, and transnational and national organizations' websites.

A comprehensive search was conducted in the dominant databases, namely Scopus, SAGE, Emeralds, Science Direct, and EBSCOhost, following the keywords for article selection presented in Table 1. In addition, studies and reports on this theme developed by private entities were also considered, namely.

Although academia has several articles and studies regarding active methodologies and entrepreneurship in education, student motivation, and teachers' motivation, more literature must be on effective classroom results.

Teachers need to see formal data regarding the effectiveness of entrepreneurship teaching methods in their classrooms.

Our main goal was to systematize the advantages of entrepreneurship in education to improve students' motivation and fulfill their need for critical thinking on school matters.

The following procedure defined the objectives and chapter approach to the literature researched.

Table 1. Criteria used to select research

Students' motivation	active methodologies	Bias between students' motivation and active methodologies
Teachers' motivation	entrepreneurship in education	Bias between students' motivation and entrepreneurship in education

Source: Elaborated by the authors

The authors identified, read, and analyzed about one hundred and fifty academic articles (147) regarding student motivation, teacher's motivation, active methodologies, and entrepreneurship in education, thirty opinion articles by academia experts (28), and five databases of international organizations regarding student's motivation and active methodologies (5). They decided to exclude ten opinion daily newspaper articles (10) from their research based on something other than practical or academic research.

Methodological quality and quantity of evidence were based on several studies where the student's motivation was an enormous issue regarding their absence of school pleasant feeling and to understand the causes adjacent to their emotional position also identify the effects of entrepreneurship in education to undermine demotivation.

The final part of this chapter will present a case study to validate the developed framework. Data were collected through "triangulation" (study of documents, investigating theoretical basics and the literature, and close-ended questions surveys to the student's sample based on the Academic Motivation Scale (AMS) from Vallerand et al. (1989).

According to Crowe et al. (2011), "the case study approach is beneficial to employ when there is a need to obtain an in-depth appreciation of an issue, event or phenomenon of interest, in its natural, real-life context" (2011, p. 1), so in order to validate the qualitative research it will be presented an intrinsic case study (2011, p. 1).

The sample relies on seventy (70) secondary-level students from 2017 to 2021, regarding four classes of economics A subject, in a school on Lisbon's outskirts.

The multiplicity of research methods aims to be the first approach to investigating the advantages of active methodologies and entrepreneurship in education, to improve students' motivation and, consequently, lessen negative feelings about school. Far from being a closed analysis, it is intended to be the trigger to understand the emotional importance that active methodologies and entrepreneurship in education have in students.

STUDENTS' MOTIVATION: THE KEY TO LEARNING

The learning-teaching process is far more complex than being at school and listening to what teachers say to apply to the evaluation instrument. It requires an intellectual basis of scientific knowledge and pedagogical tools for teaching by the teachers, but students should be motivated to acquire knowledge (Arends, 2008).

The biggest complaint of students and teachers is the need for more motivation for academic knowledge matters. Nevertheless, this discussion is familiar. An overview of the historical approach in literature makes it possible to understand better the (de)motivation phenomenon regarding school intervenient.

In the 18th century, teaching was not considered relevant in the education of individuals, being assigned to middle-class men who had no learning in the pedagogical area and came from the priesthood; only in the following century did teaching present objectives based only on simple mathematical operations (counting, adding and subtracting) and reading and writing, according to Arends (2008). In turn, only in the last century did we witness the massive of school and its bases change to the transmission of knowledge, being called Traditional School because the teacher is the primary vehicle for the transfer of content in a structured and organized way (Leão, 1999). In opposition to this methodology, the expositive method, based on Jean Piaget's Constructivism, active methods paced on the binomial subject and environment, where the individual only acquires and builds knowledge through interaction with the environment (Becker, 2009).

According to Rodrigues & Cabrito (2022), students will only achieve knowledge if they experience it since their motivation lies outside the classroom where he/she is inserted. Therefore, it is up to the teacher the role in the selection of diversified and motivating methodologies so that the student feels that a school is a welcoming place for learning, where the student is at the center of the teaching-learning process, transforming the teacher into a facilitator and mediator in the same process, with the use of active methodologies, not necessarily neglecting the expositive methodology (Joaquim, 2018).

However, there is essential to conceptualize motivation.

Regarding the American Psychological Association (APA), motivation is:

(…) the impetus that gives purpose or direction to behavior and operates in humans at a conscious or unconscious level. Motives are frequently divided into (a) physiological, primary, or organic motives, such as hunger, thirst, and need for sleep; and (b) personal, social, or secondary motives, such as affiliation, competition, and individual interests and goals. An important distinction must also be drawn between internal motivating forces and external factors, such as rewards or punishments that can encourage or discourage certain behaviors(American Psychological Association, 2022).

Individuals, in general, and students, in particular, should have a meaningful purpose for acquiring knowledge in school. Nevertheless, unfortunately, they do not have, at present, school subjects.

Vallerand et al. (1989), quoted by Algharaibeh (2021), expose "the existence of multiple factors of academic motivation, arranged along the continuum of self-determination as follows: intrinsic motivation, extrinsic motivation, and Amotivation" (2021, p. 3).

Vallerand et al. (1989) suggested three factors for intrinsic motivation: the intrinsic motivation to know (IMTK), which means that the student performs the activity for the pleasure that they feel when they got a new learning; the intrinsic motivation to accomplish (IMTA) which means that the student interacts with the environment to feel competent; and Intrinsic Motivation to Experience Stimulation (IMES) which means the student engages in the assignment to experience stimulating. The three intrinsic motivation factors exist in the continuum of self-determination, but they are factors of intrinsic motivation with a correlation. The three factors for extrinsic motivation are the extrinsic motivation for external regulation (EMER), which means that the student performs the activity in order to get external reinforcement; extrinsic motivation for introjected regulation (EMIN), which means that the student begins to personalize his actions, reasons, extrinsic motivation for identified regulation (EMID) which makes the behavior valuable and vital for the student, and one factor for the Amotivation (AMOT) which means that the student does not have intrinsic or extrinsic motivation.

Each subscale consists of four items (2021, p. 3).

It is intended to pay attention to the formal curricula of the subjects. On the contrary, this chapter aims to present alternative methodological forms in the teaching-learning process so that motivation and critical thinking are acquired from the beginning of their formal learning.

For instant formal curricula in Portugal need to be in sync with the Information and Communication Technologies (ICT) evolution, not only because ICT has become more and more innovative in a short period, but the suitability of formal curricula to reality is tremendously slow in Portugal specifically. Despite that, in 2017, a *Profile of the Student at the End of Mandatory Schooling* (MEC, 2017) was created. The education ministry identifies several abilities, attitudes, and knowledge that students need to acquire by the end of twelve years in school. In this document, it is also possible to understand the areas of competence aimed by the students. However, the reality is different, not only because teachers and students have a tremendous gap in digital literacy but because several schools and teachers need the technical conditions (ICT) to apply all the items covered in the document.

According to the OECD (2019), digital technologies have gained significant importance in society. However, the skills inherent to them tend to become obsolete quickly since what was once, in the near past (about two years, according to the *OECD Future of Education and Skills 2030* report), considered an added value in the skills of individuals, is now no longer pertinent.

Nowadays, students are called Generation Z "(aka Gen Z, iGen, or centennials), which refers to the generation that was born in 1997-2012, following millenniums. This generation has been raised on the internet and social media" (Meola, 2022, p. 2).

According to Meola (2022), the main characteristics of this generation are that they always lived in the digital era and spent more hours on their digital devices than older generations, including neglected traditional cable television because they prefer streaming services.

Through the authors, characterization is easy to realize the tremendous gap between teachers and students, as most of the teachers are *Baby Boomers* and *Generation X*. Although motivation matter is essential for teachers to understand their student's needs, goals, and social motivations.

According to Steinmayr et al. (2019), several studies support that "students' motivational beliefs are significantly related to their academic achievement" (2019, p. 3). For this matter, teachers must have an obligation to support their academic goals by applying active methodologies in their transition to formal curricula.

It is confirmed to be told that no teachers' cannot change formal curricula, but they can turn the school into a pleasant space to improve practical knowledge.

ACTIVE METHODOLOGIES AN OVERVIEW CONCEPTUALIZATION

For a long time, traditional methods like theory expositive or demonstration ones were enough for teachers and students because the main goal was to transmit knowledge, and students acquired it as a fundamental truth. Although in the 21st century, with the advent of new technologies (ICT), the world is contained in a mobile or laptop screen. The motivation of students is outside the classroom (Joaquim, 2018).

The traditional way of doing things is no longer the best. Teachers need to reinvent their knowledge in the classroom.

In the words of Rodrigues & Cabrito (2022)

Criticism of the traditional teaching style has long been heard, according to Piaget (1968) with his proposals to defend the right to education for all, Freire (1996) for his advocacy of a democratic and participatory school, and Dewey (1960) who introduced the vision of a democratic school and education as an eminently social process (2022, p. 7).

Konopka et al. (2015). Reply that active methodologies can often be understood as a replacement for traditional methodologies, but to the authors, they completed each other. Not only because some concepts must be acquired through expositive methods, but in the end, most students attend to an external exam.

In the words of William Glasser (quoted by Faias (2021), people generally learn by reading (10%), writing (20%), observing, seeing, and listening (50%)[1]; discussing (70%), practicing (80%), and teaching (95%). The first three are passive methodologies, and the last three are active methodologies.

So, the advantages of active methodologies are (Bonwell & Eison, 1991; Faias, 2021). The main advantage is that students become protagonists of their learning because they can acquire autonomy, critical thinking, problem solves abilities and develop confidence. On the other hand, for teachers, active methodologies include more careful planning of classroom tasks (Arends, 2008; Fernandes, 2007b; Leão, 1999).

The use of active methodologies is, according to Arends (2008), the most challenging and effective method to achieve knowledge and motivation in students because the teaching-learning process relies on the student's central role, as mentioned before.

There are several active methodologies that teachers can apply in their classrooms. However, the truth is that the appliance of these methodologies is far more complex than the traditional ones. Not only does it demand teachers' media literacy and digital skills in ICT, but evaluating students has become a challenge.

Also, regarding Arends (2008), one of the essential tasks is planning and correlating the formal curricula subjects to ensure that the domains to be evaluated are measurably covered in the objectives. If they are, the evaluations may be adequate and fallacious.

Traditional forms of assessment often need to be revised to assess when using active and cooperative methodologies, especially when assessing competencies, built and developed, and real-world related tasks (Rodrigues & Cabrito, 2022).

There are, according to the literature, several types of active methodologies, such as Collaborative Virtual Classrooms; Mind mapping / Brainstorming; Role Playing; Data and Tools for Problem-solving; Online Discussion Boards; Game-based Learning (Arends, 2008; Bonwell & Eison, 1991; Faias, 2021), but they all can be connected into the method of Problem-Based Learning (PBL) (Moura, 2017).

Project-based learning equips students with critical and analytical thinking skills. It prepares them to "know how to make project-related recommendations and adjust their work based on the evidence gathered from their research and observations. It then transforms students into autonomous learners, giving them tools to help them build their learning" (Moura, 2017, p. 81). In other words, PBL has the potential to fully engage students in the digital age, in the teaching-learning process, but also gives the students the tools they will need to become more successful in their future work lives.

PBL can be applied through STEAM methodology with " the integration of Sciences, Technology, Engineering and Mathematics pedagogies with those from the Arts takes many forms with myriad intentions, processes, and outcomes" (Carter et al., 2021, p. 1).

According to Newman et al. (2022), implementing this methodology allows students to perceive impossible possibilities because it challenges them to overlook a problem or subject based on the tools and skills inherent in critical thinking through the lens of interdisciplinary and ICT.

STEAM approaches are relatively new in secondary schools in Portugal. However, according to the Directorate General of Education (DGE, 2021), there is a program that teachers and other partners can access in order to "create corresponds to a collaborative exchange environment for actors in STEM education in Europe" (DGE, 2021).

Applying PBL with the STEAM approach, the authors of this case study understand that students are challenged to be entrepreneurs in their school tasks.

Entrepreneurship in Teaching

Active methodologies place the student at the center of the teaching-learning process, thus developing autonomy, reflection, problem-solved techniques of reality, teamwork, and innovation skills since the teacher ceases to play the central role (Joaquim, 2018).

Despite the importance of active methodologies, due to its predominantly summative assessment system, the Portuguese educational system ends up conditioning teachers in their teaching methodologies since it is "almost exclusively associated with grading and certification" (Fernandes, 2007a, p. 588).

The Portuguese education system comprises four primary levels: Secondary Education and the 3rd Cycle of Basic Education. In 2021, 1 319 731 students were enrolled (INE, 2022).

In Secondary education, students have several education systems to finish their studies and complete the Portuguese compulsory education, whether by regular education, vocational courses, apprenticeship courses, education, and training courses (ETC), recurrent education, or technical and artistic courses. However, in 2021, according to the National Statists Institute (INE, 2022), young people enrolled 60% in regular education and 40% in vocational courses.

Although there is still a large gap between regular and vocational education, this gap has narrowed over the past few years. Despite professional education having in its genesis of creation the integration into the world of work, it gives the students the same right to take specific national exams to progress their studies.

Professional education is based, or should be based, on active methods. Therefore, project work Project Based Learning (PBL) regarding entrepreneurship are privileged methodology in this educational system, as they provide students with the knowledge, work management, autonomy, critical thinking, and teamwork skills (Joaquim, 2018; Rodrigues & Cabrito, 2022). However, the teacher, despite being a facilitator, cannot resign from the role of work guide because, in the 21st century, Information and Communication Technologies (ICT) are a reality in society, and consequently in school, making its structured integration in the active methodology (Joaquim, 2018).

The ICT evolution is a reality, but this does not happen with the student's research skills because, without the teacher's guidance, they tend to interpret the researched information fallaciously (Graham & Metaxas, 2003).

So, teachers must challenge that student through active methodologies so they can acquire critical thinking tools and abilities.

Critical and creative thinking promotes a constant search for new ways of thinking and problem-solving through the systematic search for new and lifelong learning. Nevertheless, the tools behind this competence are not innate to the human being and should be taught and fostered, thus returning to the importance of the teaching-learning process. Therefore, several pedagogical techniques are necessary to promote from childhood the use of the tools inherent to critical and creative thinking (OECD, 2019b).

London (2022) presents several techniques that should be implemented in teaching, such as cognitive skills; mastery of subjects; openness to lived and intellectual experiences; focus on goals and self-motivation; collaborative work, and motivation for creativity. In other words, through nurturing knowledge, skills, and attitudes, individuals can develop the tools necessary to apply critical and creative thinking in their daily lives.

As mentioned several times throughout this document, teachers are faced with several challenges in the classroom, corresponding to the evolution of both society and ICT, confirmed by Arends (2008), who also states that teachers have several challenges in the 21st century, such as teaching for the construction of meaning; teaching for active learning; teaching and choice; teaching & responsibility, and teaching & technology.

According to Arends (2008), teaching for meaning construction opposes the objectivist and constructivist perspectives, wherein first, instruction and tasks are standardized. Teachers transmit knowledge through "absolute truths," In the second, instruction and knowledge are personal, and the student constructs meaning through experience and transforming active learning through the involvement of students with the community and not being confined to the classroom only.

Even merely indicating the critical advantages of active methodologies is essential to understand their conceptualization. So according to Bonwell & Eison (1991), quoted by Konopka et al. (2015), active methodologies "comprise a set of pedagogical practices containing a variety of activities that hold a common element engaging the students to do things and to think about what they are doing" (2015, p. 1540).

Through the application of entrepreneurship in education, teachers challenge students to solve problems based on real adult life. For example, it can be an academic work project or finding a solution for the real world, like creating a company, brand, product, or service, because entrepreneurship in education is not based on a specific method.

Regarding Mojalal et al. (2011), quoted by Esmi et al. (2015), "by utilizing problem-solving, active training methods, and practical learning activities, presenting creativity opportunities, developing new ideas, and holding classes and specialized workshops can be offered as entrepreneurship teaching methods" (2015, p. 173).

In the words of Lachèus (2015), using these methods in education is relevant not only because of the "result of economic growth, job creation and the increase of societal resilience"(2015, p. 6) but also because it provides high levels of students motivation and engagement that can trigger profound learning results.

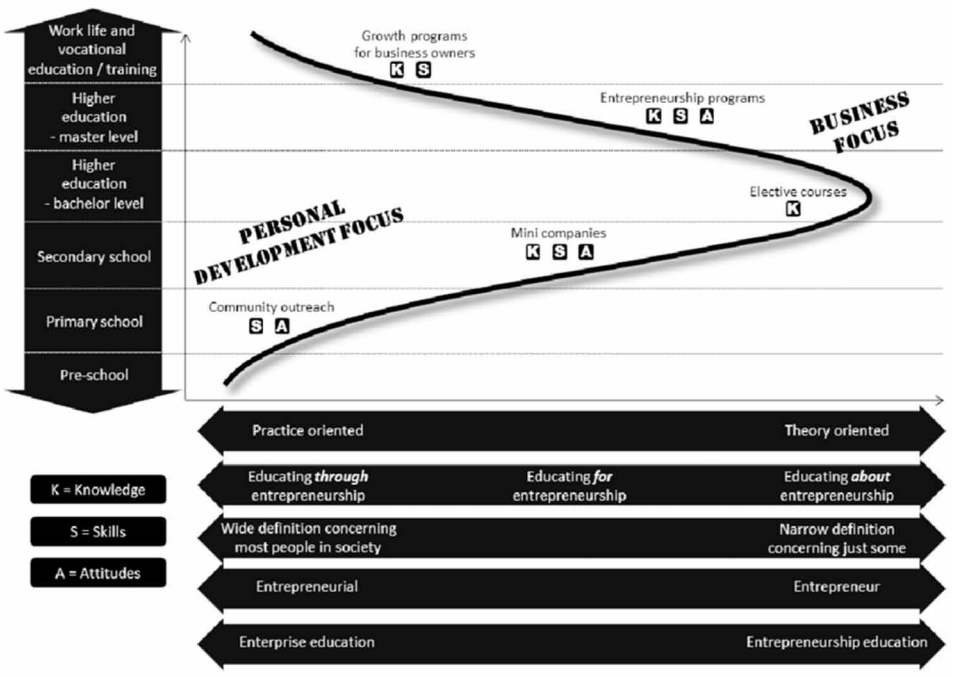
Today, the economic importance of entrepreneurship and self-employment is indisputable. Accordingly, many governments began to design policies that favor promoting self-employment to stimulate economic progress and alleviate unemployment because entrepreneurship is closely linked to the concept of change (Daniel et al., 2015).

Daniel et al. (2015) and Lachèus (2015) understand that entrepreneurship in education should begin at the first level. However, as mentioned before, there are several constraints in teachers' lack of time and digital knowledge to improve such methods.

The conceptualization of entrepreneurship in education has not been a consensus in academic literature. However, it is unanimous, by several authors believe that this method relies on a changing pattern from traditional and conventional exposure methodology to active methodologies (Esmi et al., 2015; Lachèus, 2015).

Lachèus (2015) created an overview of terms to "illustrate the current progression over time in the educational system, with shifting definition, pedagogical approaches and varying emphasis on theory over practice" (2015, p. 8), presented in Figure 1.

Figure 1. Overview of terms and definitions currently used in entrepreneurial education



The simple existence of this chapter intends to highlight the relevance of learning entrepreneurship skills from an early age (Daniel et al., 2015; Lachèus, 2015).

These transversal and multidisciplinary skills should be acquired throughout life.

Entrepreneurship education is a relatively new area. Although it is part of the curricula, in Portugal, of the various degrees in most higher education institutions and some primary and secondary institutions of basic and secondary education (DGE, 2022), there is little uniformity of pedagogical objectives, content, and approaches among programs and courses (Daniel et al., 2015).

Esmi et al. (2015) describe the teaching methods of entrepreneurship in education as direct presentations that "include inviting guest entrepreneurs, tutoring entrepreneurship, presenting an official speech, holding seminars, watching and recording videos, counseling, and training through extracurricular activities (2015, p. 174)".

Despite all these arguments, entrepreneurship in education is crucial to students' motivation and acquisition of social, problem solving and critical skills.

3. FROM THEORY TO REALITY: CASE STUDY (2017-2021)

3.1. Results

From 2017 to 2021, one of the authors of this chapter worked as a teacher of Economics A in a school located on the outskirts of Lisbon. During that time, she attempted to attend four classes of the 10th grade and four of the 11th, for a total of seventy students.

As mentioned before, this subject is a national exam held by an external entity linked to the education minister to verify and grade the student's learning in the subject's two years.

Economics A is taught in regular education in the socioeconomic sciences course secondary education for two years.

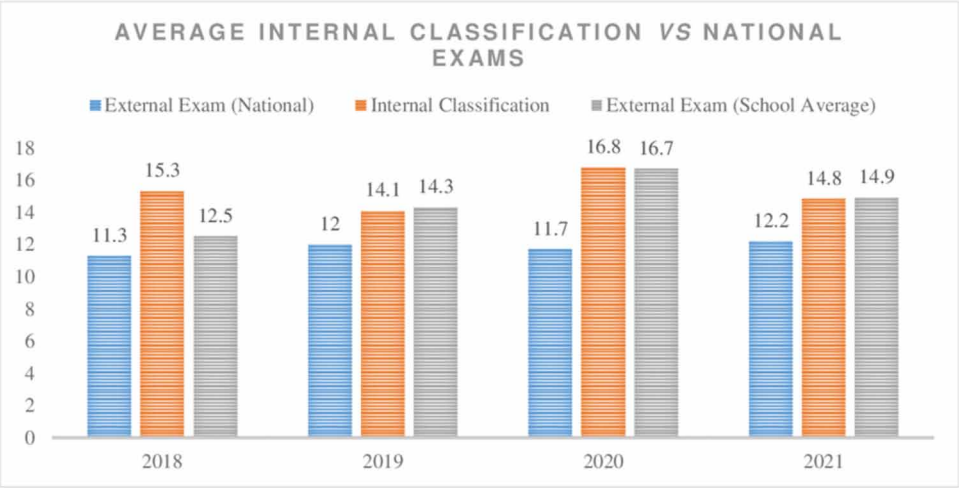
At the end of the 11th grade, students must attempt an external exam provided by IAVE, an institution linked to the education minister. So, teachers and students experience enormous pressure to get results aligned with their school goals.

The average internal classification on a zero-to-twenty-point scale was fifteen-point- twenty-five-point five values, and their average on an external exam was fourteen-point-six.

According to IAVE, the average classification on Economics A was eleven-point-eight values from 2017 to 2021. This point's scale is a minor difference between two-point-eight points, but it is essential to understand the big picture.

As noted in Figure 2, after the year 2019, the internal classification average was similar to the external exam classification attendance in school but always presented a gap between the national grade of the external exam and the external exam attendance in the school.

Figure 2. Average internal classification versus national exams



During this period, all classes were challenged to participate in extracurricular activities regarding entrepreneurship applied to management and economics, such as *The Enterprise*, promoted by Junior Achievement Portugal, a scientific knowledge competition called *Olympiads of Economy* (promoted by

Coimbra University - School of Economics) or *Generation Euro* (promoted by European Central Bank) and others that will be mentioned during this study in order to illustrate the student's achievement.

Regarding *The Enterprise* project, students were challenged to identify a need and create a product or service that would fulfill it. During several months they have to understand the market through market studies, create a brand, and identify their target, so in the end, they would structure the marketing and financial plans. In the second round, the students have to present their project through a pitch to several corporate judges, and they must be involved in their project so they can manage success (Junior Achievement, 2022).

In *the Generation Euro* contest, students must become a European member of the European Central Bank (ECB). Then, through research, they must "complete challenges related to monetary policy, economics, and the tasks of the ECB" (European Central Bank, 2022).

At last, the *Olympiads of Economy* in Portugal is a national selection to the *International Economics Olympiad* (IEO) and is related to the scientific knowledge of the economy. Regarding the IOE front page on its website, "the competition's activities are designed to stimulate creative problem-solving skills among students interested in Economics, Business, and Finance" (IEO, 2022).

Except for the 2017-2018 academic year, the students were motivated to participate in these three international competitions between 2018-2019 and 2020-2021 (Table 2).

Table 2. Participation in extra-curricular competitions

	2017-2018	2018-2019	2019-2020	2020-2021
The Enterprise		x	x	
Olympiads of Economy		x	x	x
Generation Euro			x	x

Source: Elaborated by the authors

In those years, in the school year 2018-2019 and 2020-2021, students needed to be qualified for the final national podium on *Generation Euro* (Table 3).

Table 3. National podium places

	2017-2018	2018-2019	2019-2020	2020-2021
The Enterprise		x	x	x
Olympiads of Economy		x	x	x
Generation Euro			x	

Source: Elaborated by the authors

Regarding international qualification during the 2018-2019 school year and 2020-2021, students were always qualified to be on *IEO* and were first placed on *Generation Euro* in Portugal (Table 4).

Table 4. International participation

	2017-2018	2018-2019	2019-2020	2020-2021
The Enterprise				
Olympiads of Economy		x	x	x
Generation Euro		x		

Source: Elaborated by the authors

At the end of each school year, the teacher gave her students a survey to understand and measure their motivation regarding the AMS of Vallerand et al. (1989) to understand their intrinsic and extrinsic motivation better.

As mentioned, this model aims to realize the students' academic motivation on a quantity scale. The AMS consists of 28 items measuring seven factors subdivided into three significant guidelines, like intrinsic and extrinsic motivation and motivation (Algharaibeh, 2021).

The intrinsic motivation will be divided into three issues, such as "to know," "toward accomplishment," and "experience stimulation." Regarding extrinsic motivation, the students were challenged to "identify," "introjected"*and to understand their "external regulation."

The AMS also tries to identify the "motivation" of students.

The scale dimension was between one (1) and five (5), where one was described as "does not correspond at all" and five as "corresponds exactly."

No survey was applied for the 2017-2018 school year because there was no competition enrolment, so the sample size this data collected was 58 students.

When students were asked to quantify their intrinsic motivation, regarding their motivation "to know," 43% and 35,8% that "corresponding exactly" and "a lot," respectively, to the pleasure of the experience of learning. Only 2,16% answered as "does not correspond at all."

On the subtopic that refers to their accomplishment motivations, 47,84% and 41% of the students, respectively, refer to "corresponding exactly" and "a lot" to their academic achievement (Steinmayr et al., 2019).

The experience stimulation on extracurricular subjects corresponded "a lot" for 54,8% of the students in contrast to 1,72% that felt that it does not correspond.

It was also essential for this data collected to understand their extrinsic motivation, so for that matter, 50,9%, and 37% of the respondents understand, exactly and a lot, respectively, that their motivation was associated with their future goals regarding their career as adults. Nevertheless, conversely, 1,72% felt it does not correspond.

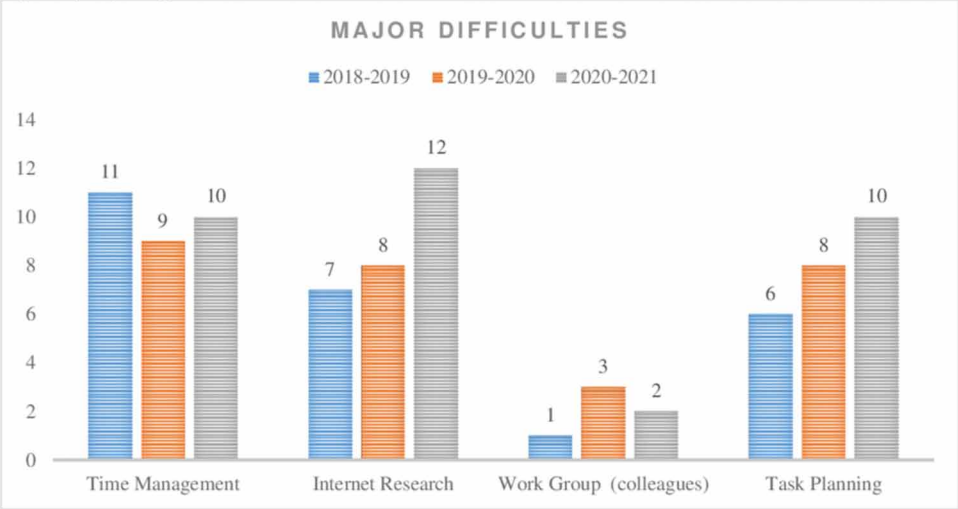
The majority of 54,3% realized "exactly" that their external motivation was connected to their *ego* regarding their self-confidence in accomplishing success in their school results. Only 3% felt that it "does not correspond at all."

To students, their external regulations are fundamental once 63,3% identify "exactly" that their school achievement will have repercussions on "the good life," "better salary," and "prestigious job" later.

Regarding "motivation," none of the students surveyed had negative feelings toward the school.

The authors also challenged the students to identify four types of difficulties in their entrepreneurship tasks: *Time Management*; *Internet Research*; *Work Group (colleagues)*, and *Task Planning* (Figure 3). In addition, the students could select one or two items. The sample was 87 answers.

Figure 3. Major difficulties



The most considerable difficulty for the students was *time management*, with 34% and 30 of the answers, 31% (27) regarding *internet research*, and 28% (24) of *task planning*. In the end, the colleagues – *work group* – were 7% (6) of the students the primary difficulty in overtaking.

According to this data, there is exposed that evaluation grades can be improved through participation in extracurricular activities regarding entrepreneurship. Nevertheless, the result will be discussed in the next section to be more accurate in the conclusions.

CONCLUSION AND IMPLICATIONS

Identify the Critical Motivation in Students for Learning Formal Curricula of Economics a Subject

According to Figure 1, during 2017-2019 and 2020-2021, the evaluation grades on Economics A stunts show an improvement on a quantitative scale, even though all students were enrolled in extracurricular activities regarding entrepreneurship in education. Moreover the students felt more motivated to acquire knowledge from formal curricula, despite most admitting that time management, internet research, and task planning were their significant difficulties during the project process (Table 3). So according to these results and in the words of Lima et al. (2020), "an intrinsically motivated person seeks to find a reason to achieve his goals within himself. For example, the student wants to get good grades in order to confirm consolidated knowledge" (2020, p. 4).

Of course that these results only can be applied to this sample, but they can be a projection for future case studies, not only because these students had shown better evaluation results in their external exam evaluation, but their grades also improved in the result of the student's motivation for learning the formal curricula of the subject.

In short, the key to motivation relies on tools that promote entrepreneurship in teaching through the application of active methodologies in order to motivate and improve critical thinking and the problem-solving process.

Systematize the Active Methods of the Teaching-Learning Process

This case study only relied on Economies A subject, but active methodologies can be applied to several other subjects. For example, PBL is a method that can have a teaching application on several subjects and the work project.

The biggest challenge for teachers is creating and correlating active methodologies in the formal curricula subjects and planning and evaluating them (Arends, 2008; Fernandes, 2008; Leão, 1999). First of all, according to Rodrigues (2019), teachers must have digital and media skills and knowledge to create a PBL that promotes scientific understanding and motivation in their students. The next step is to elaborate a working guide that consistently and consistently measures the objectives and tasks that students are challenged to do. If this step aligns with the previous items, creating quantitative evaluation criteria is more straightforward and effective.

As mentioned, there are several benefits to using active methodologies for students' abilities and skills improvement. Nevertheless, the authors of this chapter believe that the most significant advantages of using those are the improvement of digital media and critical thinking and, therefore, the motivation of young people.

For Richard W. Paul, quoted in *The Critical Thinking and Its Importance in Education* by Iyer (2019), "critical thinking is thinking about you thinking while you are thinking to make you are thinking greater [than before]." However, this is one of many definitions present in the literature. Several other authors and studies have tried to define critical thinking.

The most important question is how humankind could get this skill. The answer is quite simple: the formal education system, in practical terms, is more complex. Therefore, the teaching process needs more tools and knowledge to improve and lead teachers and students in this matter (Franco et al., 2018).

This subject is familiar! It has been discussed over the past few years regarding the focus of educational reform movements throughout educational history (Rumpagaporn, 2007).

The main objective is to apply critical thinking daily as it is becoming an increasingly urgent topic, given the Post-Truth era, as society becomes flooded with fake news and false facts (Brites et al., 2019). For that matter, active methodology in the teaching-learning process has become a crucial topic to be implemented in the classrooms.

Entrepreneurship in Education

For most people, entrepreneurship is a fundamental skill for the business. However, according to DGE (2022), this subject must be included in teachers' methods to improve and innovate the learning-teaching process for students.

Singh et al. (2022) and Steinmayr et al. (2019) allude that entrepreneurship in their different fields will be one of the essential skills in future works, so it must be taught in school.

The importance of extracurricular competitions relies on academic skills, of course. However, their scope is far more complex because it allows the students to work on their time management and task planning clarifications and promote their interpersonal skills by working with others.

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

This case study is intended to become an investigation tool concerning motivation and entrepreneurship in education regarding external exam evaluation on a secondary level in Portugal. Therefore, it is urgent to research individuals' cases regarding active methodologies. However, this ongoing research must be knowledge as one of the most critical subjects in the education system.

During the last decades, society has been watching the fast evaluation of ICT, but despite several education reforms, reality tends to be different. Therefore, teachers need to acquire more digital skills and avoid using active methodologies in the teaching-learning process.

There is a latent, and sometimes truthfully feeling, that traditional methodologies are the most effective process for transferring knowledge from teachers to students.

The formal curricula at schools need to be attended to this social issue. First, however, society must know the benefits of applying active methodologies at school.

There is a whole world outside the classroom walls, and teachers must be aware that school, as it is, is no longer motivated for students.

Through this research, we can reinforce the existence of substantial impacts on active methodologies in students' motivation and evaluation grades.

Another topic that needs to be explored and understood is the leading role of students' motivation, problem-solving tools, and abilities in the interaction between formal curricula, the natural world, and technologies. In other words, it is urgent to research the benefits of active methodologies regarding student knowledge acquisition.

We understand that these future research directions need to be more specific to be studied as one, so there is a subdivision of the topics. However, in the end, entrepreneurship in education can affect society in general.

This literature review intended to fill the gap in the literature regarding the effectiveness of active methodologies and entrepreneurship in education in contrast to student motivation through a catch-all overview of the different items about these topics.

The authors' contribution to academia relates to identifying different variables needed to clarify these nutshell subjects and be supported by comparative studies.

REFERENCES

Algharaibeh, S. A. S. (2021). The Construct Validity of Vallerand's Academic Motivation Scale (AMS). *Education Research International*, *2021*, 1–9. doi:10.1155/2021/5546794

American Psychological Association. (2022). *Dictionary of Psychology*. APA Dictionary of Psychology. https://dictionary.apa.org/motivation

Arends, R. (2008). *Aprender a Ensinar*. MacGraw Hill.

Bailey, E., & Boget, L. (2022). Schooltime Nostalgia. *Garnet & Gold Gazette*. https://bhsgazette.org/2204/opinion/schooltime-nostalgia/

Becker, F. (2009). O QUE É CONSTRUTIVISMO ? *Desenvolvimento e Aprendizagens Sob o Enfoque Da Psicologia II*, 1–8.

Bonwell, C. C., & Eison, J. A. (1991). Active Learning: Creating Excitement in the Classroom. 1991 ASHE-ERIC Higher Education Reports. In ASHE-ERIC.

Brites, M. J., Amaral, I., & Catarino, F. (2019). the Era of Fake News: Digital Storytelling As a Promotion of Critical Reading. *INTED2019 Proceedings, 1*(1), 1915–1920. 10.21125/inted.2019.0536

Carter, C. E., Barnett, H., Burns, K., Cohen, N., Durall, E., Lordick, D., Nack, F., Newman, A., & Ussher, S. (2021). Defining STEAM Approaches for Higher Education. *European Journal of STEM Education*, *6*(1), 13. doi:10.20897/ejsteme/11354

Collins English Dictionary. (2023). *Introjection*. Collins English Dictionary. https://www.collinsdictionary.com/dictionary/english/introjection

Conradty, C., & Bogner, F. X. (2022). Measuring Students' School Motivation. *Education Sciences*, *12*(6), 1–15. doi:10.3390/educsci12060378

Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., & Sheikh, A. (2011). The case study approach. *BMC Medical Research Methodology*, *11*(1), 100. doi:10.1186/1471-2288-11-100 PMID:21707982

Crystal, A. A. (2017). High School Nostalgia. *The Daily Star*. https://www.thedailystar.net/shout/life/high-school-nostalgia-1400020

Daniel, A. D., Cerqueira, C., Quaresma, R., Ferreira, J. J. P., Preto, M. T., & Afonso, P. (2015). *Ensino do Empreendedorismo:Teoria & Prática Reflexão das I Jornadas do Ensino do Empreendedorismo em Portugal*. Instituto Pedro Nunes – Associação para a Inovação e Desenvolvimento em Ciência e Tecnologia.

DGE. (2021). *Projeto STEAM-IT*. Projectos Curriculares.

DGE. (2022). *Educação para a Cidadania*. Estratégia Nacional de Educação Para a Cidadania. https://cidadania.dge.mec.pt/

Esmi, K., Marzoughi, R., & Torkzadeh, J. (2015). Teaching learning methods of an entrepreneurship curriculum. *Journal of Advances in Medical Education & Professionalism*, *3*(4), 172–177. http://www.ncbi.nlm.nih.gov/pubmed/26457314%0Ahttp://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=PMC4596383 PMID:26457314

European Central Bank. (2022). *Generation €uro Students' Award*. Youth Initiavies. https://www.ecb.europa.eu/ecb/educational/youth-initiatives/award/html/index.en.html

Faias, J. (2021). *Active Methodologies for Learning*. Ukrothe. https://www.ukrothe.eu/en/blog/active-methodologies-learning

Fernandes, D. (2007a). A avaliação das aprendizagens no Sistema. *Educação e Pesquisa*, *33*(3), 581–600. http://repositorio.ul.pt. doi:10.1590/S1517-97022007000300013

Fernandes, D. (2007b). A avaliação das aprendizagens no Sistema Educativo Português. *Educação e Pesquisa*, *33*(3), 581–600. doi:10.1590/S1517-97022007000300013

Fernandes, D. (2008). *Avaliação do Desempenho Docente: Desafios, Problemas e oportunidades* (Issue June). Texto Editores. https://www.mendeley.com/catalogue/eb142b49-ae33-347b-99bd-65ed4040e99f/?utm_source=desktop&utm_medium=1.19.8&utm_campaign=open_catalog&userDocumentId=%7B85da0437-5894-4b5a-975a-eedf72a76f6d%7D

Figueiredo, P., & Joaquim, A. F. (2022). The impact of artificial intelligence and intergenerational diversity. In F. Ince (Ed.), *Leadership Perspectives on Effective Intergenerational Communication and Management* (p. 28). IGI Global.

Franco, A., Marques Vieira, R., & Tenreiro-Vieira, C. (2018). Educating for critical thinking in university: The criticality of critical thinking in education and everyday life. *ESSACHESS - Journal for Communication Studies, 11*(2), 131–144.

Graham, L., & Metaxas, P. T. (2003). Of course it's true; I saw it on the Internet! *Communications of the ACM*, *46*(5), 70–75. doi:10.1145/769800.769804

IEO. (2022). *International Economics Olympiad*. IEO. https://ecolymp.org/

INE. (2022). *Plataforma de divulgação dos Censos 2021 – Resultados Provisórios*. Censos 2021. https://censos.ine.pt/xportal/xmain?xpgid=censos21_dados&xpid=CENSOS21&xlang=pt

Iyer, L. (2019). Critical Thinking and it's Importance in Education. *Cognitive, Psychological and Behavioural Perspectives in Education*. https://www.researchgate.net/publication/339433132_Critical_Thinking_and_it's_Importance_in_Education

Joaquim, A. F. (2018). *O papel do trabalho de projeto no ensino profissional da disciplina de área de integração (Relatório de Prática de Ensino Supervisionada. Mestrado em Ensino de Economia e de Contabilidade).* Instituto de Educação da Universidade de Lisboa. http://hdl.handle.net/10451/34940

Junior Achievement. (2022). *JA Worldwide*. Junior Achievement. https://www.jaworldwide.org/

Konopka, C. L., Adaime, M. B., & Mosele, P. H. (2015). Active Teaching and Learning Methodologies: Some Considerations. *Creative Education*, *06*(14), 1536–1545. doi:10.4236/ce.2015.614154

Lachèus, M. (2015). *Entrepreneurship in Education: What, Why, When, How - Entrepreneurship360*. Backgroud Paper.

Leão, D. M. M. (1999). Paradigmas Contemporâneos de Educação: Escola Tradicional e Escola Construtivista. *Cadernos de Pesquisas*, *107*(107), 187–206. https://www.scielo.br/j/cp/a/PwJJHWcxknGGMghXdGRXZbB/?format=pdf&lang=pt. doi:10.1590/S0100-15741999000200008

Lima, A. R., Cavalcante, A. A., Torquato, C. B., & Vanzella, E. (2020). A correlação entre desmotivação e redução do rendimento escolar: Um estudo da 3ª série do ensino médio no município de Parambu – CE. *Série Educar- 24 – Ensino Fundamental e Médio*. doi:10.36229/978-65-86127-39-3.CAP.16

London, S. (2022). Thinking outside the box. In The PISA 2022 - Creative Thinking Assessment.

Marken, S., & Afrawal, S. (2022). *K-12 Workers Have Highest Burnout Rate in U.S.* Gallup. https://news.gallup.com/poll/393500/workers-highest-burnout-rate.aspx

MEC. (2017). Perfil Dos Alunos À Saída da Escolaridade Obrigatório. *Editorial Do Ministério Da Educação e Ciência*, 1–30. http://www.dge.mec.pt/sites/default/files/Curriculo/Projeto_Autonomia_e_Flexibilidade/perfil_dos_alunos.pdf

Meola, A. (2022). *Generation Z: Latest Gen Z News, Research, Facts*. Insider Intelligence | EMarketer. https://www.insiderintelligence.com/insights/generation-z-facts/

Mineo, L. (2022). *Ed School panel examines U.S. teacher exodus*. Harvard Gazette. https://news.harvard.edu/gazette/story/2022/03/ed-school-panel-examines-u-s-teacher-exodus/

Moura, A. (2017). Tecnologias Móveis : aprendizagem baseada em projetos. In From Games to Interactive activities for Mobile learning.

NewmanA.BarnettH.CarterC. E.CohenN.FischerR.HolmeA.BurnsK.Cahill-jonesT.StintC.VeartL.BerryJ. NaudinA.HurleyM.SheaJ. O.UssherS. (2022). *Implementing STEAM Approaches in Higher Education. August*. doi:10.13140/RG.2.2.26765.41447

OECD. (2018). *Education GPS - Portugal*. Teachers and Teaching Conditions, Lower and Upper Secondary Education. https://gpseducation.oecd.org/CountryProfile?primaryCountry=PRT&treshold=10&topic=TA

OECD. (2019a). PISA 2021 creative thinking framework. *Oecd, 53*(9), 1689–1699. https://www.oecd.org/pisa/publications/PISA-2021-creative-thinking-framework.pdf

OECD. (2019b). Skills for 2030. *OECD Future of Education and Skills 2030*, 16. OECD. https://www.oecd.org/education/2030-project/teaching-and-learning/learning/skills/Skills_for_2030_concept_note.pdf

Pazur, S. (2020). *Feeling Nostalgic for In-Person Schooling? That May Hurt Our Chance to Rethink It.* EdSurge News. https://www.edsurge.com/news/2020-06-25-feeling-nostalgic-for-in-person-schooling-that-may-hurt-our-chance-to-rethink-it

Rodrigues, A. L. (2019). *Aprendizagem Ativa: Como Inovar na Sala de Aula* (R. Costa, Ed.). Lisbon International Press.

Rodrigues, A. L., & Cabrito, B. (2022). Metodologias de ensino, avaliação e aprendizagem Didática da Economia e Contabilidade (Coleção Caderno de Mertrado | e-book (ed.)). EDUCA - Associação de Estudos e Publicidade.

Rumpagaporn, M. W. (2007). *Students ' Critical Thinking Skills, Attitudes To Ict and Perceptions of Ict Classroom Learning Environments Under the Ict Schools Pilot Project in Thailand.* University of Adelaide. https://digital.library.adelaide.edu.au/dspace/bitstream/2440/37896/8/02whole.pdf

Singh, A., Jha, S., Srivastava, D. K., & Somarajan, A. (2022). Future of work: A systematic literature review and evolution of themes. *Foresight*, *24*(1), 99–125. doi:10.1108/FS-09-2020-0093

Steinmayr, R., Weidinger, A. F., Schwinger, M., & Spinath, B. (2019). The importance of students' motivation for their academic achievement-replicating and extending previous findings. *Frontiers in Psychology*, *10*(JULY), 1730. doi:10.3389/fpsyg.2019.01730 PMID:31417459

Vallerand, R. J., Pelletier, L. G., Blais, M. R., Brière, N. M., Senécal, C. B., & Vallières, É. F. (1989). Construction et validation de l'Échelle de Motivation en Éducation (EME). In Educational and Psychological Measurement (Vol. 21). 310651574_The_Academic_Motivation_Scale_Dimensionality_Reliability_and_Construct_Validity_Among_Vocational_Students

KEY TERMS AND DEFINITIONS

Project-Based learning: This is a teaching method in which students learn by actively engaging in real-world and personally meaningful projects.

Entrepreneurship: Entrepreneurship is developing, organizing, and running a new idea to change some *status quo*.

Critical thinking: This is an intellectually disciplined process of actively and skilfully conceptualizing, applying, analyzing, synthesizing, and evaluating information gathered from or generated by observation, experience, reflection, reasoning, or communication as a guide to belief and action.

Active Methodologies: Several teaching methodologies put the students at the center of their teaching-learning process with the mediation of a teacher.

ENDNOTE

[1] An unconscious psychic process by which a person incorporates into his or her own psychic apparatus the characteristics of another person or object (Collins English Dictionary, 2023)