The Educational End: how Learning Languages Should Prepare for the Future

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Abstract

In a 21st century dominated by VUCA environments (Volatile, Uncertain, Complex and Ambiguous) and in an increasingly diverse and global society, education should rethink how to meet the real needs of the citizens of the present and the future. Educational methods for language instruction have received assiduous attention from researchers, that may have overlooked educational *ends,* and that is to serve real life purposes. Learning a language is more than just acquiring knowledge about a new linguistic norm and its rules: it is above all, a vehicle for communication, an open channel to the world and a new scope with which new cultures are explored and different views and perspectives are discovered and shared. This paper aims at exploring task-based learning approach for language instruction and presenting a study on the benefits attributed to this approach, relating them to existing trends in current educational innovation. In doing so, a comparison between meaning-based learning and instruction-based learning is needed. Here we will review some of the most relevant theories and approaches to better understand task-based learning and explore its potential.
Palabras clave: Aprendizaje basado en tareas; competencia global; enfoque comunicativo; Competencias clave; Habilidades del siglo XXI; Adquisición de idiomas

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[es] Los fines de la educación: cómo el aprendizaje de las lenguas nos debería preparar para el futuro

Resumen

En un siglo XXI dominado por entornos VUCA (Volátiles, Inciertos, Complejos y Ambiguos) y en una sociedad cada vez más diversa y globalizada, la educación debe repensar cómo satisfacer las necesidades reales de los ciudadanos del presente y del futuro. Los métodos educativos para la enseñanza del idioma han recibido una atención constante de los investigadores, que pueden haber pasado por alto los fines educativos reales: estar al servicio de los propósitos y necesidades de la vida real. Aprender una lengua es algo más que adquirir conocimiento sobre una nueva norma lingüística: es, sobre todo, un vehículo de comunicación, un canal abierto al mundo y un nuevo ámbito con el que se exploran nuevas culturas y se descubren y comparten diferentes visiones y perspectivas. Este documento tiene como objetivo explorar el aprendizaje basado en tareas, aplicado a la instrucción de lenguas, y presentar un estudio sobre los beneficios atribuidos a este enfoque, relacionándolos con las tendencias existentes en la innovación educativa actual. Para hacerlo, se necesita una comparación entre el aprendizaje basado en el significado y el aprendizaje basado en la instrucción. Aquí revisaremos algunas de las teorías y enfoques más relevantes para comprender mejor el aprendizaje basado en tareas y explorar su potencial.

Keywords: Task-based learning; global competence; CLT-Communicative Language Teaching; Key Competences; 21st century skills; Language adquisition

Summary: 1. Introduction. 2. Literature review on teaching and learning theories. 3. The educational panorama. 4. Why task-based for language instruction? 5. Recommendations. 6. Conclusions. References.

1. Introduction

Languages are a tool for their users to become competent, not only linguistically, but also culturally, worldly. Language learning, apart from being an acquisition of new knowledge, is also a vehicle for communication, an open channel to the world and most importantly, a new scope with which new cultures are explored and different views and perspectives are discovered and shared. The rapidly globalizing world we live in makes language learning no longer an option, rather a vital prerequisite. That alongside technology advancement represents another factor that emphasizes the pressing necessity for individuals who can effectively engage in local and global problem-solving. Individuals with "Global competence", that is the capacity and disposition to understand and act on issues of global significance (Boix Mansilla & Jackson, 2011). Lastly, language learning poses challenges to learners on intellectual and emotional levels. It fosters synthesizing and analysis skills, in addition to heightening the sense of own identity.

This learning does not follow a smooth progression. It is an internal process. In fact, all learning is a complex process; as complex as the brain itself. Studies of how the brain learns have always bewildered scientists and researchers. The unsettled debate of our predisposition to learn or the lack of one has existed for millennia.

Exposure to content is no guarantee for acquisition, no matter how careful and well-orchestrated this exposure is. "It is not simply a matter of converting input into output. Learners use language to make inferences, hypotheses and generalizations about the language system as a whole. In other words, we can be sure that learners will make use of the language they experience, but we cannot be sure *how* they will make use of it. These processes are hidden. They are not amenable to teacher control. But the teacher cannot ignore the impact of such processes or of the learner's contribution to learning." (Willis and Willis, 1996, p.13)

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Throughout this paper, we shall review how recent circumstances and events of the modern world demand future citizens to become *competent,* abandon the pursuit of niche knowledge and start an era of *thinking* with that knowledge.

2. Literature review on teaching and learning theories

Throughout the available literature on teaching and learning theories, examples of the importance of exploiting learners' previous knowledge, backgrounds and social traits are abundant. Teaching with the learners' prior knowledge in mind are solid approaches that existed since the past century. There is almost unanimous agreement today that teachers who still deliver mechanical and uniform lessons should become obsolete in a very short time. Here is a brief of list of the most relevant ones:

Comprehensible input: the previous experiences and conceptual understanding in a developmental continuum are the basis for new knowledge. When new information is not linked to prior knowledge, it cannot be understood or become part of deep learning. (Krashen, 2002). New learning takes place if there is support in the zone of proximal development which lies beyond the zone prior knowledge, anything outside this zone is not yet able to be learned. ZPD uses peer social dialogue as well as teacher's support for improvement to occur. "Every function in the child's cultural development appears twice: first, on the social level and, later on, on the individual level; first, between people (inter-psychological) and then inside the child (intra-psychological)." (Vygotsky,1978, p.57)

Constructivism: inspired by behaviorism, constructivism is an approach in which learning is, unlike Jean Piaget's (1896-1980) hypothesis, unconditioned by development by age constraints. Provided they receive the appropriate instruction, practice and experience, learners are equipped to construct knowledge by organizing and categorizing it, regardless their biological maturation.

The approach places emphasis on **Scaffolding**, a term coined by Jerome Seymour Bruner, who considers infants to be active problem solvers from birth, with abilities similar to those of the mature adult and that learning is actively constructed through knowledge of the world and experiences. A combination of old and new knowledge connected is what helps us learn. Constructivists emphasize thinking with the content to be learned in some form—rediscovering it with the aid of a guide, analyzing it, critiquing it, or applying it diversely. Jerome Brunner's work states that instruction should address four aspects: a structure in learning; readiness for learning; intuitive and analytical thinking; and the desire to learn. (Bruner, 1960, p.11-14).

The **thinking skills movement** of the past several decades has produced helpful resources, bundled together under the label infusion, a term coined by Robert J, Swartz to describe the teaching-for-thinking method, infusing thinking skills into mainstream classroom instruction. Such approaches to teaching thinking advocate infusing the teaching of thinking into the teaching of content, so that learners simultaneously develop better thinking skills and dispositions and deepen content understanding. (Swartz, Reagan, Costa, Beyer, & Kallick, 2014). An example of that would be IB learning, discussed later in this article, considering both breadth and depth when teaching and learning different disciplines.

It is therefore established, at least theoretically, that previous learning experiences, social and contextual factors must be taken into consideration for a learning process to progress successfully and accomplish its desired initial goals. These experiences are not shared among learners; each has a singular and unique experience of their own, encoded in their mother tongue and has to be activated as a base for further knowledge and wealth to the learning environment. Teachers must activate this prior understanding and consider the necessary strategies to build on background knowledge. These strategies must observe social settings and scenarios so that all students are equally served.

In his recently published book "How we learn", cognitive neuroscientist Stanislas Dehaene refers to recent research claiming that the nascent brain is bestowed with "knowledge inherited from its long

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evolutionary history… this knowledge remains invisible because it does not show in babies' primitive behavior … cognitive scientists [employed] much ingenuity and significant methodological advances in order to expose this vast repertoire of abilities all babies are born with. Objects, numbers, probability, faces, language… the scope of babies' prior knowledge is extensive." (Dehaene, 2020, p. 53). By monitoring how surprised they act as response to certain stimuli, scientists discerned that babies as young as a few months of age possess deep intuition of the laws of physics and show confusion in situations where these laws are violated (p. 57). All these evidences indicate that a child's starting point is not a blank slate. Dehaene explains that the brain of a newborn is already endowed with an intuitive logic, and that babies behave like budding scientists who reason like good statisticians, eliminating the least likely hypothesis and searching for the hidden causes of various phenomena. (p. 60). Amongst these discoveries our major concern is language. Spoken language perception, as much as face perception, are social skills manifested in children in both visual and auditory domains. They "possess remarkable capacity to acquire [lexicon and grammar] in record time… language learning starts in the utero… by the third trimester of pregnancy, the fetus is already able to hear. In terms of language comprehension, a baby's brain is a true statistical genius… Right at birth babies can tell the difference between most vowels and consonants in every language in the world. The linguist Noam Chomsky was probably right in postulating that our species is born with a "language acquisition device", a specialized system that is automatically triggered in the first years of life… What is innate in us is the instinct to learn any language –an instinct so irrepressible that language appears spontaneously within a few generations in humans deprived of it." (p. 64- 67).

3. The educational panorama

Revolutionary shifts have been introduced to our world since the beginning of the century. Globalisation, changing demographics and the 4th industrial revolution integrating automation into economics and the workforce, are all sobering realities that stress upon the utmost urgency for a corresponding shift in education. CGP Grey, an American-Irish educational YouTuber and podcaster and director, producer and editor of "Humans need not apply", predicts that 45% of existing jobs are likely to be performed by robots. This figure may be 25% higher than the unemployment experienced during the Great depression.

COTEC foundation, a private non-profit organisation that endorses innovations towards social and economic improvements, started a campaign called ♯MiEmpleoMiFuturo January-April 2019, with the aim of raising awareness about the impact of the 4th industrial revolution. They released a documentary film, addressing politicians and urging them to take the necessary actions so that the impact of automation, Artificial Intelligence and algorithms are favourable with aspects such as improving the quality of life for citizens and their working prospects in lieu of perceiving at as a threat to the middle class, a disquiet voiced by many economic analysts.

Changing demands in job markets created a different profile for learners and their desired skills, "a dramatic transformation from resource-based economies, such as farming and mining to manufacturing economies and beyond that to service and information economies… roles that require effective communication, collaboration, and problem-solving skills. To thrive in today's society, people require education well beyond the basics." (Perkins 2017, p. 22).

From the point of view of teaching practice, it seems the perfect moment to develop in students (particularly, bilingual and international students, because of the broader contexts they occupy) the so-called 4Cs, communication, creativity, collaboration and critical thinking. Despite the intrinsic difficulty of designing EFL lessons that integrate these dimensions, as the case study of Fajriah & Septiyanti (2021) shows, there are already some recent didactic proposals offering practical tips for integrating the 4Cs into integrated skills learning (Pardede, 2020).

Additionally, development of the COVID pandemic has given all of us conclusive proof of how conventional methods and thinking fail to overcome unconventional hurdles, which is precisely why the pandemic paralyzed members of all societies, and why it took nations numerous ineffective trials, groping for solutions, to face and avert further crises, to some degree.

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Stress upon 21st century skills, or competences, depends on who is naming, triggered a new vision for education and frameworks. Here are some of the most prominent systems that emerged as a response to the demands of the modern world:

National and state curricula in Europe: Dictated by the Common European of framework of Key competences, foreground competences that chiefly address personal fulfillment, active citizenship, social cohesion and employability in a knowledge society, shifting attention in education towards creativity and information competences while introducing innovative approaches. (Perkins 2017, p. 203). These seven key competences are Communication in the mother tongue; Communication in foreign languages; Mathematical competences and basic competences in science and technology; Digital competence; Learning to learn; Social and civic competences; Sense of initiative and entrepreneurship, and finally Cultural awareness and expression.

This framework is complete and effective. However, it may exhibit evidence of a hierarchical structure and top-down display of contents in order to keep control over the pace and simplicity with which they are introduced. It also suffers a great deal of cluttering making the task of addressing this content fully a daily struggle for teachers, let alone students. Assessing this content is an additional concern. Measuring knowledge acquisition of these contents follows the traditional pattern of judging learners´ abilities to recite facts and recall structures.

Inquiry-based pedagogy, conceptual learning and big understanding are the basis for International Education, which emphasizes the importance of higher order thinking and fosters disciplined, synthesizing, creative and respectful minds in learners. International schools´ philosophy along with International Baccalaureate learner profile considers these qualities the essence of an international and rounded learner. Approaches to learning, a key component of IB programs, stand out as they equip learners with a variety of strategies and techniques. The five skills -thinking, communication, social, self-management and research- as well as the corresponding sub-skills make for a good recipe for a comprehensive understanding and view of the world. This approach is already being applied from the kindergarten stage (García and Raña, 2018). Another subskill in the thinking category is

Metacognition. It fosters higher order thinking giving learners control over their cognitive processes as they learn. It helps them become aware of how they learn best, and trial different ways and strategies to process information, find patterns, build conceptual understandings, remember key facts and evaluate the outcomes of each strategy. Reflection on learning is a skill most students do not possess and teachers are to blame for that. The matter of fact is that both learners and teachers find hand-me-down information as well as experiences a lot easier than trial and fail. Meaningful and structured reflection activities play an essential role in helping students understand knowledge, the world and themselves.

Effective communication is another key skill in IB teaching and learning, poorly addressed in mainstream classrooms. Communication skill is fundamental not only for a successful learning; it also helps establish good relationships within the learning communities. Learning is fundamentally a social act likely to enhance understanding, positive relationships, peer acceptance and school adjustment. Collaboration and exchange of ideas is the new language of the current globalized world we live in. Responsibility towards the group also promotes persistence and companionship. It provides students with long-term support and assistance. It also constitutes a basic change in organizational structure from a competitive-individualistic "mass manufacturing" model of organizing to a high-performance team-based organizational structure.

Authors David and Robert Johnson exhaustively discussed this aspect. They state that in order to use cooperative learning in the classroom, it is necessary to understand the essential elements that differentiate (a) cooperative learning from traditional classroom grouping and (b) a well-implemented cooperative lesson from a poorly implemented one. (Johnson & Johnson, 2017, p.2). In fact, recent research cases such as that of Pardo-Tolentino & Aggabao (2020) clearly show how learning

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outcomes and motivation increase in classrooms where second languages are learned when teachers use cooperative learning strategies.

For a genuinely cooperative lesson, Roger and David Johnson highlight the following five elements:

Positive interdependence, where learners believe they are linked together and that they all share their success or failure. The most important type of positive interdependence is goal interdependence: all cooperative learning starts with a mutually shared group goal. **Face-to-face interactions**, where students help, assist, encourage, and support each other's efforts to learn. **Individual accountability**, where performance of each student is assessed and results given to both the individual and the group. It is important that group members know (a) who needs more assistance in completing the assignment and (b) they cannot "hitch-hike" on the work of others. **Social skills** where students have and use leadership, decision-making, trust-building, communication, and conflict-management skills… and **Group processing**, where the lesson is critically assessed, analyzing helpful procedures, and areas for improvements within each group. (Johnson & Johnson, 2017, pp. 4- 5). However, in a large percentage of foreign language classes, the time dedicated to group processing is scarce, something that prevents reflection on mistakes, which according to Krashen, is vital to advance in the acquisition of the linguistic norm, as the second hypothesis in his "Monitor theory" states.

Self-management is another crucial skill in IB Approaches to Learning Skills (IBO, 2018). In this category time management is a key sub-skill that requires effort from teachers *and* students to overcome the eternally complex issue of time factor. Lack of control over time makes for an excellent excuse for procrastination. But procrastination in fact is fear from failure. This is why addressing affective skills in learners, motivating them and wagering on their abilities to deal with difficulties are necessary elements to help them respond to challenges. Resilience, self-motivation and mindfulness are paramount for a successful learning, for a successful life.

Last but not least are research skills. With an inquiry-based pedagogy IB learning requires advanced information literacy capabilities. Analyzing, synthesizing and evaluating such information are some of the essential stages required for an informed and successful research process in all IB programs.

Interdisciplinarity is another decisive feature in IB learning, disciplines form clusters that interweave in and inform one another forming a web of ideas built around central concepts and inquiry units (IBO, 2018).

This same feature is the most essential element for a substantive understanding of the world and the foundation of **Global Competence**. Students demonstrate global competence through awareness and curiosity about how the world works—informed by disciplinary and interdisciplinary insights. Specifically, globally competent students are able to perform the following four competences:

1. Investigate the world beyond their immediate environment, framing significant problems and conducting well-crafted and age-appropriate research.
2. Recognize perspectives, others' and their own, articulating and explaining such perspectives thoughtfully and respectfully.
3. Communicate ideas effectively with diverse audiences, bridging geographic, linguistic, ideological, and cultural barriers.
4. Take action to improve conditions, viewing themselves as players in the world and participating reflectively." (Boix Mansilla & Jackson, 2011)

Three core assumptions underlie the framework for global competence: that global competence involves engaged learning, embraces the world selectively, and requires disciplinary and interdisciplinary knowledge. (Boix Mansilla & Jackson, 2011)

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Partnership for 21ˢᵗ Century Skills in the US is another similar framework which employs 4 categories to achieve desired learning outcomes: core subjects, the only category that addresses pure content, include global awareness, financial, economic, business and entrepreneurial literacy; learning and innovation skills, including the 4Cs -communication, collaboration, critical thinking and creativity-; information, media and technology skills; and life and career skills. This framework is another example of a non-traditional curriculum that targets helping students to be self-directed learners, with initiative, commitment, and critical reflection (Perkins 2017, p. 202).

Threshold concepts are another broad perspective with high playoffs for learners as they allow for further and deeper learning. Just as big understandings, threshold concepts direct learners towards a broad vision of the world, they pose challenges that are necessary for the learning process because learning is troublesome and challenging… When knowledge ceases to be troublesome, when students sail through years of a degree program without encountering challenges or experiencing conceptual difficulty, then it is likely that something valuable have been lost. (Mayer & Land, 2006, p. xiv)

Howard Gardner's Five minds for the future, that complete the theory of the multiple intelligences, are other representations of mindsets that needed to face complex future challenges: disciplined, attentive, systematic and careful with errors; synthesizing, interweaving knowledge across fields; creative; respectful, morally committed to individuals within close community; and ethical, morally concerned with global issues and unrest. These mindsets pave learners' path towards thriving on a personal level and also within the local community and beyond (Gardner, 2011). Despite the fact that the multiple intelligences framework has been questioned in recent years due to its controverted neurobiological substrate (Pérez & Medrano, 2013), numerous practical cases of the application of MI in the classroom seem to show that the presentation of varied learning stimuli improves both academic results and student motivation, especially when combined with other active methodologies such as PBL or CLIL (Gündüz & Ünal, 2016; Morilla & Pavón, 2018).

Problem-based learning. Another popular inquiry-based approach is that of problem-based learning (PBL). In PBL, students analyse and propose solutions to a real-world problem that is usually presented to them in an unstructured and often open-ended manner. The main advantages of PBL are that it has been found to lead to improvements in information processing, skill proficiency and the development of a variety of skills, including problem-solving, reasoning, teamwork and metacognition. In addition to this, there is recent research that shows that PBL has very positive effects in reducing stress when learning foreign languages, for example in combination with gamification (Hwang, Hsu, Lai & Hsueh, 2017).

   As Prince and Felder identify, in PBL, the students usually operate in teams or collaborative groups and work through a problem-solving process. PBL can be a hugely powerful teaching strategy that promotes active learning and a student-centred pedagogy. It is important, though, to take care that students are exposed to a balance of both positive and negative scenarios in order to avoid an overly pessimistic focus on problems (Prince and Felder, 2007).

   All the above frameworks highlight the importance of developing skills and attitudes that address the challenges posed by present, and also some future, circumstances and the changing pace of the world we are preparing our learners to live in. Among these are self-understanding, self-management, empathy, ethics, collaboration, good thinking and what Perkins coined as "personal and interpersonal know how". (Perkins, 2017, p.199-213)

Instruction-based learning. Language instruction has been one of the most frequent approaches over the last two decades. It builds on learners' attention to form in general. Providing instructions is important for learners, "but one should not expect to see the immediate and specific impact of any particular 'bit' of instruction on any particular 'bit' of language. (…) This exposure provides "raw material" that enables learners to "review their picture of the target language system." (Skehan, 1996, p.14).

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Trends towards communicative teaching became very popular in the 1970s. However, it was not until around the mid-1980s when managing instructions effectively was made clear. "Researchers began to look at what kind of classroom interaction would promote learning most rapidly and efficiently." By introducing activities which have meaning "tasks" and which resemble real life experiences, the expected result was to move learners' system forward, "It is the task which drives the learner's system forward by engaging acquisitional processes. It is the task which is the unit of syllabus design" (Skehan, 1996, p.14).

4. Why task-based for language instruction?

A task-based approach sees the learning process as one of learning through doing – it is by primarily engaging in meaning that the learner's system is encouraged to develop.

"The success of all teaching depends on the way in which the opportunities presented to students enable them to reach the standards or learning outcomes that we expect of them. Therefore, the curriculum should also define appropriate instructional activities that encourage rigorous thinking relevant to the standards for international mindedness" (Skelton, Wigford, Harper and Reeves, 2002, p.54).

Many reasons account for this view. Amongst which is the affirmation that unused knowledge is likely to be forgotten (Perkins, 2017, p.10). Research on task-based learning offered a number of advantages that render this approach reliant for a better education for the future.

Hands-on and worthy learning

Tasks involve and motivate students. They work individually or cooperatively towards a common goal using knowledge they came to possess, in the classroom or in life, and employ it towards a final product. The process is likely to present a situation they are likely to live in real life. "Many of our most vexed and painful social problems could be ameliorated if we knew how to school our young... Schooling can be about how to make a life, which is quite different from how to make a living. Such an enterprise is not easy to pursue… Nonetheless, it is the weightiest and most important thing to write about" (Postman, 1995, p. 43-55).

Tasks provide occasions to keep knowledge alive, tease it out and take it somewhere. One concern that arises as a result of this discovery is the fact that not all content taught in school curricula and frameworks can be introduced in forms of tasks or projects. This is a clear invitation for educators and designers to revise the taught curriculum. Knowledge that does not allow for opportunities for learners to develop literacy and sophistication in their lives or fit into life-worthy learning should fall into oblivion decluttering modern curricula for knowledge that is likely to matter in the lives that learners are likely to live.

Bridge performance and achievement gaps:

Gaps in attainment have always been the subject of research and analysis over the past decade. Studies gathering data on rural populations, impoverished areas, particular ethnics groups and segments of underperforming learners have always pursued the noble aspiration of equally serving all students and increase their mastery: No Child Left Behind NCLB (2002), National Assessment of Educational Progress NAEP (2009). Among those studies is one conducted by Linda Darling-Hammond. In her *The flat world and education 2010* she insists that there is a dramatic lack of economic and policy-based support for education: She also states that quality teaching makes an enormous difference in achievement -more than parents' race, social conditions and background learning combined- and that, surprisingly, lower-performing students acquire higher competences the higher the challenge they are given, "the combination of teaching quality and curriculum quality explains most of the school's contribution to achievement" (Darling-Hammond, 2015, p.54). Challenges posed by tasks and projects poke at learners' interests and desire to explore the world. Her studies concluded that teaching quality varies hugely across areas of the United States according to the rate of its inhabitants' affluence, which reflects persistent patterns of investment in education.

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Another ground-breaking study analyzing achievement gaps is John Hattie's *Visible Learning.,* His purpose was to place all possible influences of achievement along a single continuum with the intention of discerning those that increase or decrease learning. "Visible teaching and learning occurs when learning is the explicit goal, when it is appropriately challenging, when the teacher and the student both (in their various ways) seek to ascertain whether and to what degree the challenging goal is attained, when there is deliberate practice aimed at attaining mastery of the goal, when there is feedback given and sought, and when there are active, passionate, and engaging people (teacher, student, peers, and so on) participating in the act of learning."(Hattie, 2009, p.33) Like Hammond, he also sees teaching quality a turning point for an effective learning and an ongoing progress: "Learning is a very personal journey for the teacher and the student … It requires much skill for teachers to demonstrate to *all* their students that they can see the students' perspectives" (Hattie, 2009, p.33).

Hattie ranks self-reporting grades as the most influential factor to considerably accelerate achievement in the student category; repeated learning programs and comprehensive instruction programs for teachers are the factors that most influence learning positively in the curriculum category; and collective teacher efficacy is the highest ranked in the school category (Figure 1).

STUDENT	ES
Prior knowledge and background	
Field independence	0.68
Non-standard dialect use	-0.29
Piagetian programs	1.28
Prior ability	0.94
Prior achievement	0.55
Relating creativity to achievement	0.40
Relations of high school to university achievement	0.60
Relations of high school achievement to career performance	0.38
Self-reported grades	1.33
Working memory strength	0.57
Beliefs, attitudes and dispositions	
Attitude to content domains	0.35
Concentration/persistence/ engagement	0.56
Grit/incremental vs. entity thinking	0.25
Mindfulness	0.29
Morning vs. evening	0.12
Perceived task value	0.46
Positive ethnic self-identity	0.12
Positive self-concept	0.41
Self-efficacy	0.92
Stereotype threat	0.33
Student personality attributes	0.26
Motivational approach, orientation	
Achieving motivation and approach	0.44
Boredom	-0.49
Deep motivation and approach	0.69
Depression	-0.36
Lack of stress	0.17

CURRICULA	ES
Reading, writing and the arts	
Comprehensive instructional programs for teachers	0.72
Comprehension programs	0.47
Drama/arts programs	0.38
Exposure to reading	0.43
Music programs	0.37
Phonics instruction	0.70
Repeated reading programs	0.75
Second/third chance programs	0.53
Sentence combining programs	0.15
Spelling programs	0.58
Visual-perception programs	0.55
Vocabulary programs	0.62
Whole language approach	0.06
Writing programs	0.45
Math and sciences	
Manipulative materials on math	0.30
Mathematics programs	0.59
Science programs	0.48
Use of calculators	0.27
Other curricula programs	
Bilingual programs	0.36
Career interventions	0.38
Chess instruction	0.34
Conceptual change programs	0.99
Creativity programs	0.62
Diversity courses	0.09
Extra-curricula programs	0.20
Integrated curricula programs	0.47
Juvenile delinquent programs	0.12

HOME	ES
Family structure	
Adopted vs non-adopted care	0.25
Engaged vs disengaged fathers	0.20
Intact (two-parent) families	0.23
Other family structure	0.16
Home environment	
Corporal punishment in the home	-0.33
Early years' interventions	0.44
Home visiting	0.29
Moving between schools	-0.34
Parental autonomy support	0.15
Parental involvement	0.50
Parental military deployment	-0.16
Positive family/home dynamics	0.52
Television	-0.18
Family resources	
Family on welfare/state aid	-0.12
Non-immigrant background	0.01
Parental employment	0.03
Socio-economic status	0.52

SCHOOL	ES
Leadership	
Collective teacher efficacy	1.57
Principals/school leaders	0.32
School climate	0.32
School resourcing	
External accountability systems	0.31
Finances	0.21
Types of school	
Charter schools	0.09
Religious schools	0.24
Single-sex schools	0.08
Summer school	0.23
Summer vacation effect	-0.02
School compositional effects	
College halls of residence	0.05
Desegregation	0.28
Diverse student body	0.10
Middle schools' interventions	0.08
Out-of-school curricula experiences	0.26
School choice programs	0.12
School size (600-900 students at secondary)	0.43
Other school factors	
Counseling effects	0.35
Generalized school effects	0.48
Modifying school calendars/ timetables	0.09
Pre-school programs	0.28
Suspension/expelling students	-0.20

Figure 1. *Summary of factors influencing student achievement, according to Visible Learning Limited Partnership and Cognition Education Group.*

In a competitive system, low attainers attribute their performance to lack of "ability", high attainers to their effort; in a task-oriented system, all attribute to effort, and learning is improved particularly amongst low attainers.

Foundation for further learning:
Due to their quality of supporting big understandings, tasks offer a ground for further learning and readiness for extended and detailed knowledge. They also equip learners with skills that can easily be transferred into other contexts in their lives and acquire an understanding that they can connect to the real world. An example such tasks is WebQuests, an inquiry-oriented activity developed by Bernie Dodge in 1995, through which learners are given valuable opportunities to explore technology within

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a provided scenario towards a final and meaningful target that is of relevance to them and their learning process. Conclusion stages stress the advantages of making that kind of work; defying students for further learning on the theme (Brito & Baía, 2007, p. 53).

Inter-disciplinarity:
Few projects and tasks, I would go as far as saying none, call upon isolated disciplines. Science projects in English or an economic study overseas, they all require cross-disciplinary knowledge and research, beyond traditional disciplines and towards the renewed, hybrid and unfamiliar; towards interdisciplinary topics and problems. Foreign Language teachers should explore in other disciplines to bring new insights into their classes (Hu, 2020).

21st century dispositions:
Roles that require effective communication, collaboration, and problem-solving skills are gaining terrain over poorly skilled future employees. Previously we referred to personal and interpersonal know how, another way to refer to competences and 21st century skills. These are themes that are not instruction centered on the traditional disciplines, as we know them. They are rather attitudes, capabilities and dispositions, "feelings and motives... matters of what people commit themselves to as of what people know how to do. They are, we could say, matters of disposition or attitude or mindset as well as skill." (Perkins, 2017, p.202)

Thinking Skills
Weaving big know-how into content learning helps teach the content better, especially when the end is not just to pass on facts and information but also good and deep understanding. Students learn content more meaningfully and deeply through engaging these themes with critical and creative thinking, collaboration, communication, and skills of accessing and evaluating information from sources.

Robert Swartz's infusion approach puts thinking and content together in contrast with separate courses on thinking skills. Infusion fosters thinking about matters from others' perspectives where ideas from textbooks could be tested. (Swartz, Reagan, Costa, Beyer & Kallick, 2014).

When designing tasks, considerations to the pedagogical goals of task-based approaches: accuracy, complexity and fluency must be addressed in a way that learners' attention is divided among the three aspects at different stages of the task. It is also important to understand that addressing all three is not only unrealistic but also counterproductive. This is why special to sequencing and implementing tasks is also needed. Sequencing tasks, with regards to their cognitive and linguistic content; as well as implementing tasks, referring to the three stages of implementation tasks: pre-task, task and post-task, should employ instructions that help learners focus on either communication or form. (Skehan, 1996).

5. Recommendations

Creating effective assessment tasks requires thinking through curriculum content to establish learning outcomes, and then designing performance activities that will allow students to demonstrate their achievement of those outcomes, and specifying criteria by which they will be evaluated, experts say.

Arguing that synaptic plasticity alone does not explain the success of human species, Dehaene Stanislav states that four elements must be present for any learning to happen, prosper and endure, four major functions that appeared during our evolution and maximized our ability to extract information from our surroundings, "four fundamental components of our brain architecture. Teachers who manage to mobilize all four functions in their students will undoubtedly maximize the speed and efficiency with which their class can learn." (Dehaene, 2020, p.146). He calls them the Four Pillars of Learning:

- Attention
- Active engagement

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- Error feedback
- And consolidation.

As for the first he refers to the mechanism by which our brain, in the face of information saturation and excess of stimuli, selects, channels, deepens it or simply discards some of this information. All the messages the brain receives through all senses are impossible to process in depth. "This is why a pyramid of attention mechanisms organised like a gigantic filter, carries out a selective triage. At each stage, our brain decided how much importance it should attribute to such and such input and allocates resources only to the information it considers most essential." He uses an example of how modern sophisticated artificial intelligence systems that used to process every pixel from inputs into outputs, are now designed to only process input that is broken down into two modules: "one that learns to pay attention, and another that learns to name the data filtered by the first." (Dehaene, 2020, p.146-175). He also quotes Michael Posner, an American Psychologist, who distinguishes three major attention systems:

1. Alerting, indicating *when* to attend
2. Orienting, signalling *what* to attend to
3. Executive attention, deciding *how* to process attended information.

6. Conclusions

The detrimental effects of replicating knowledge from the past, without devoting every effort to propagating this inherited wisdom from our forebears, call our very existence into question. Our survival on the planet in the presence of so many unfavourable conditions makes skills such as problem-solving, collaboration, research and critical thinking a life-changing matter.

A complete make-over of the way we perceive learning is needed. Co-founder of Project Zero, a research and development organization at Harvard Graduate School of educations David N. Perkins says, in Future wise: Educating our children for a changing world "boundaries of what is usually taught should be pushed hard towards what he calls the **Six Beyonds** (p. 2-4):

1. Beyond basic skills and towards 21st skills and disposition
2. Beyond traditional disciplines and towards the renewed, hybrid and unfamiliar
3. Beyond discreet disciplines and towards interdisciplinary topics and problems
4. Beyond regional perspectives and onto global perspectives problems and studies
5. Beyond mastering content and towards learning to think about the world with this content
6. Beyond prescribed content and towards more choice of what to learn

 "Teachers' main responsibility is response-ability" Michael Lewis says in the *Lexical Approach* (1993). Language learning is a process, a journey, through which a number of strategies should be devised as a means towards fostering responsibility as well as developing an ability to r*espond* to the world, the changes and challenges living in it poses in lieu of simple, senseless, recitation of prescribed axioms and canons.

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