

**Coordenação**  
Adelinda Candeias

# **DESENVOLVIMENTO AO LONGO DA VIDA**

**APRENDIZAGEM,  
BEM-ESTAR E INCLUSÃO**



UNIVERSIDADE  
DE ÉVORA

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DE ÉVORA

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## NOTA INTRODUTÓRIA

A globalização colocou um novo enfoque no conhecimento como gerador de inovação, o recurso fundamental para o sucesso económico dos países, das regiões, das empresas e das próprias pessoas na sociedade da tecnologia da informação e da comunicação que caracteriza a atualidade. Neste cenário, a necessidade de preparar as pessoas para fazer face à mudança e serem elas próprias agentes de mudança é crucial para o sucesso pessoal, económico, social e cultural. Esta necessidade foi transformada num dos objetivos da União Europeia, como ficou expresso no Conselho Europeu de Lisboa, em Março de 2000 ([http://ec.europa.eu/employment\\_social/knowledge\\_society/](http://ec.europa.eu/employment_social/knowledge_society/)): *“The fast development of the Information and Communication Technology (ICT) has brought about deep changes in our way of working and living, as the widespread diffusion of ICT is accompanied by organisational, commercial, social and legal innovations. Our society is now defined as the ‘Information Society’, a society in which low-cost information and ICT are in general use, or as the ‘Knowledge (-based) Society,’ to stress the fact that the most valuable asset is investment in intangible, human and social capital and that the key factors are knowledge and creativity. This new society presents great opportunities: it can mean new employment possibilities, more fulfilling jobs, new tools for education and training, easier access to public services, increased inclusion of disadvantaged people or regions.”* O que pode ser complementado com a “new skills agenda for Europe” (2016) e “Key European action supporting the 2030 Agenda & the Sustainable Development Goals”. Ações que se destacam pela ênfase colocada na igualdade de oportunidades, inclusão social e exercício pleno dos direitos e da capacitação de cada indivíduo, como skills transversais e competências chave para o século XXI. Estas competências incluem os skills tradicionais como comunicação na língua materna, línguas estrangeiras, skills digitais, literacia, skills básicos a matemática e ciência e skills transversais.

Este livro surge da confluência de contributos vindos de três projetos ENABLIN+ (Leonardo Da Vinci), Cognition & Inclusion (ERASMUS+) e LLL-HUB (Lifelong Learning Programm) e da I Conferência Europeia em Life Long Learning (realizada na Universidade de Évora) em torno de um tema central: Desenvolvimento humano ao longo da vida –

Aprendizagem, Bem-estar e Inclusão. Este livro resulta da confluência de três temáticas agregadoras, cada uma delas operacionalizada num conjunto de capítulos.

#### I. Aprendizagem(s) ao longo da vida

Nesta secção são apresentados seis capítulos que concebem a aprendizagem ao longo da vida em função das competências cognitivas fundamentais para a inclusão e a igualdade de oportunidades na sociedade do conhecimento (as competências transversais fundamentais abordados no capítulo primeiro, e a flexibilidade cognitiva desenvolvida no capítulo quinto), e das ferramentas digitais de apoio à organização da informação e de suporte à aprendizagem (como é o caso da proposta de um observatório europeu de aprendizagem ao longo da vida apresentada no capítulo segundo). Esta secção aborda também as competências pessoais e identitárias (a autopercepção da inteligência de sucesso, abordada no capítulo terceiro, e adolescência como uma etapa preparatória fundamental de aprendizagem ao longo da vida, referida no capítulo quarto), e do contexto familiar como plataforma de aprendizagem ao longo da vida e de inclusão social e digital (capítulo sexto).

#### II. Vulnerabilidade(s) e Bem-estar

A segunda secção é composta por seis capítulos que nos permitem vislumbrar alguns os reptos ao bem-estar e às vulnerabilidades que se colocam às pessoas na sociedade do conhecimento (capítulos sétimo e oitavo). As competências emocionais e a resiliência são fundamentais para realização e satisfação pessoal e profissional, qualidade de vida e bem-estar (capítulo décimo), mas também para fazerem face aos desafios formativos, ao nível do ensino básico, secundário e profissional, bem como no ensino superior; e profissionais e sua sustentabilidade moral ao longo da vida (capítulo nono e décimo segundo). Estes desafios têm obrigado ao desenvolvimento de novos instrumentos de avaliação de competências e de ameaças, como o assédio moral (capítulo décimo primeiro e décimo segundo).

#### II. Inclusão ao longo da vida

Na terceira secção são apresentadas respostas inclusivas para crianças, jovens, adultos e idosos. Depois de um capítulo inicial sobre as mudanças legislativas que enquadram um modelo universal de escola inclusiva (capítulo décimo terceiro), é apresentada uma atividade sociocultural de inclusão na universidade (capítulo décimo quarto), seguindo-se uma abordagem formativa holística e de longo prazo promotora de reabilitação, pessoal, cognitiva, emocional, social e profissional de adultos com diferentes formas de

incapacidade (capítulo décimo quinto). Os últimos três capítulos deste livro são dedicados à última etapa do desenvolvimento humano e aos desafios que colocam em termos de aprendizagem a partir de uma experiência inédita no nosso país, levada a cabo na Universidade dos Açores (capítulo décimo sexto), em termos inclusão social e direitos humanos e de cidadania (capítulo décimo sétimo) e finalmente, no último capítulo (décimo oitavo) é demonstrado como as atividades tradicionais que estimulam a proteção da reserva cognitiva, porque requerem atividades sociais, cognitiva e criativas constantes e continuas ao longo da vida, contribuem para um processo de envelhecimento mais lento, e a preservação cognitiva e a qualidade vida nas idades mais tardias.

Na qualidade de coordenadora deste livro, gostava de agradecer aos autores que responderam ao desafio de contribuir com os seus trabalhos para esta publicação, pela síntese conseguida, e pelas novidades incluídas, trata-se de um livro importante para estudantes, investigadores e profissionais da psicologia, das ciências da educação, das ciências da saúde, e de outras áreas afins. Na “sociedade do conhecimento” dos nossos dias, onde abunda a informação e se apela as destrezas cognitivas na sua seleção e manuseamento, a aprendizagem ao longo da vida o bem-estar e a inclusão ganham relevância na abordagem ao desenvolvimento ao longo da vida e incitam-nos a continuar este trabalho em projetos futuros.

A finalizar, uma palavra de agradecimento pelo apoio financeiro da FCT e três projetos ENABLIN+ (Leonardo Da Vinci), Cognition & Inclusion (ERASMUS+) e LLL-HUB (Lifelong Learning Programm) e da I Conferência Europeia em Life Long Learning (realizada na Universidade de Évora com os apoios do Departamento de Psicologia e da Escola de Ciências Sociais), e da Associação Portuguesa de Gestão de Pessoas (APG) e a Associação Nacional para a Qualificação e Ensino Profissional) que tornou possível a concretização desta publicação.

Évora, 13 de Dezembro de 2019

Adelinda Araújo Candeias

## **Secção I – Aprendizagem ao Longo da vida**

# **1. COGNITION AND INCLUSION THEORETICAL APPROACHES TO THE DEVELOPMENT OF COGNITIVE COMPETENCES IN ADULTS<sup>1</sup>**

**Adelinda Araújo Candeias**

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## **1. Introduction**

The 'new skills agenda for Europe' (2016) is in line with the 'Key European action supporting the 2030 Agenda & the Sustainable Development Goals'. This agenda refers to themes of equal opportunity, social inclusion, 'no one leaving behind', full exercise of rights and empowerment, as transversal skills and key competences to XXI century. These key competences include 'traditional' skills such as communication in one's mother tongue, foreign languages, digital skills, literacy, and basic skills in math and science, as well as transversal skills (TVS).

TVS are the building blocks for the development of the "hard" skills and competences required to succeed on the life and labor market, for citizens in general, but specially for adults with special needs, because they have difficulties relating with quality of life, training, employment, social participation and inclusion.

Professionals faces a new challenge, how to improve these competences in people in general but specially in people with special needs. According to cognitive psychology (e.g., Sternberg, 1999), the real nature of 'cognitive deficits' is the lack of these cognitive skills, which determine the quality of learning and thinking. Transversal skills are essential for our target-group, adults with Neurodevelopmental Disorder (APA, 2013), as it is the case of intellectual disability that starts during the developmental period, and adults with

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<sup>1</sup> Work co-funded by ERASMUS+ Programme of the European Union - Project Cognition and Inclusion: C&I-2017-1-BE02-KA202-034722.

Neurocognitive Disorder (APA, 2013), for instance, a neurocognitive disorder that causes a loss in cognitive functions, as it happens after a traumatic brain injury.

As this learning and thinking is qualitatively different compared to the learning and thinking of 'non-learning disabled' persons, 'different' strategies/methods for teaching/support need to be used by teachers, trainers, social workers.

Only few methodologies addressing learning disabilities (LD) adults have been developed to teach them to learn, think, problem solve. Research (e.g. Sternberg, 1985; 1999) reveals however that these methods are effective, influence significantly the cognitive competence and adaptation skills of LD persons – and by doing so, influence successful participation, social inclusion and autonomy.

Psychologists, social workers, educators, caregivers.... do not know and/or do not believe that LD people can learn (Bilken & Burke, 2006). This refers to the belief system of the (social) environment: when is not believed that people can learn, think, adapt, no efforts will be done to teach them to learn, to think, to participate in society. This mindset, with believes about learning, intelligence, has a tremendous effect on the level of functioning of LD persons. Often learned helplessness is the result: being passive, not taking initiative, not knowing how to deal with changing environments or unforeseen situations, consequently active participation to society is limited/not successful and quality of life and inclusion is limited.

In this project – Cognition & Inclusion – we create a theoretical revision about the state of art about these main cognitive skills and a data base with tools of intervention that teach/train cognitive skills as: problem solving, self-regulation, flexibility, self-determination and creativity to LD persons to improve social participation, entrepreneurship, employability, quality of life and inclusion.

### **1.1. Problem solving**

Solving problems is the cornerstone of a person's daily life and is a landmark of human adaptive efforts in the ecological, social contexts we live in (e.g., Piaget, 1958). Problem solving (PS) is part of an agentic life, that allow people to navigate and function in nowadays complex societies. Wehmeyer (1996; Wehmeyer, Shogren, Little, & Lopez, 2017), for instance, considered PS as required element or component, among others, to the emergence of self-determination during the time of development: self-determined people persistently regulate their problem solving to meet their own goals in life. On the

other hand, limited or inadequate PS was related to stress and psychological maladjustment, and PS was considered as important coping skills (e.g., D’Zurilla & Goldfried, 1971).

The case of PS in people with intellectual disabilities (ID) (American Psychiatric Association, 2013) deserves a particular attention. First, these cognitive abilities used to be considered out of their reach. Second, the movements about the rights of people with disabilities and the United Nations’ *Convention on the Rights of Persons with Disabilities* (2006), have been claiming the quality of life of these people, meaning social inclusion and participation also (Schalock & Verdugo, 2003). Third, people with ID are a greater risk of psychological suffering and psychiatric disorders (e.g., American Psychiatric Association, 2013). That raises the questions: What is PS? In the first place, what is a problem? Is PS relevant to persons with ID?

According to Nezu, Nezu and Riccelli (2007), “a ‘problem’ is defined as a life situation that requires an adaptive response to prevent negative consequences but for which an effective response is not readily available or apparent to the person experiencing the problem” (p. 43). It can also be defined as discrepancy between a present state and a desired state: “a problem arises when we have a goal – a state of affairs that we want to achieve – and it is not immediately apparent how the goal can be attained” (Holyoak, 1995, p. 269). So, problems are not unique to highly intellectual, academic tasks – or people; they are pervasive in everyone’s life, at least as pervasive as discomfort, need to change, ambitions, desires, or goals are.

And what is PS? PS cannot be understood as a single cognitive ability. It has been defined as a cycle or a series of steps (Davidson, & Sternberg, 2003; D’Zurilla & Goldfried, 1971). Regardless the importance of basic cognitive processes (such as attention or working memory), more complex and higher level, executive cognitive processes have been considered to have a central role in PS – in particular, planning, monitoring and the evaluation of the PS process itself (e.g., Das, Naglieri, & Kirby, 1994; Sternberg, 1985). Sternberg, for instance, proposed the relevance of higher executive processes (metacomponents) such as: the awareness that a problem exists, definition of the nature of the problem, allocation of mental and physical resources to solve the problem, decision about how to represent the information about the problem, combining these steps in a strategy that could be implemented to solve the problem, monitoring the

ongoing problem solving process, and evaluate the solution found as the process completed.

Based on D’Zurilla and Goldfried (1971) proposal, Nezu et al. (2015) conceived PS as a series of specific, interacting skills not only cognitive but cognitive-emotional, especially. They propose three process components:

- a) orientation to the problem (e.g., the way the individual is aware of and understands his/her emotional reactions to problems and evaluates his/her ability to solve them);
- b) behavioral response style (e.g., person’s preferential ways of reaction to problems);
- c) rational problem-solving skills, such as how well can a person define the problem, conceive creative solutions, taking decisions involving cost-benefit analysis, implementing solutions, and monitoring the performance and the outcomes. These skills are defined as systematic tasks, involving goal oriented and rational planning.

There is individual differences concerning PS skills. Research suggest that adults with ID show rigid patterns of PS and use a limited variety of strategies (e.g., Wehmeyer, & Kelchner, 1994) and PS skills level is associated with independent living skills and challenging behavior (Manson, Dagnan & Evans, 2010).

The PS conceptualizations encouraged the designing of programs aimed at promoting these skills (e.g., D’Zurilla & Goldfried, 1971; OECD, 2015), including in persons with ID (Kramer, Roemer, Liljenquist, Shin, & Hart, 2014; Kramer, Ryan, Moore, & Schwartz, 2017; Nezu, Nezu, & Agran, 1991; Wehmeyer, Palmer, Agran, Mithaug, & Martin, 2000).

In addition, several studies about the effects of tailored interventions to promote PS skills in persons with ID suggest improvements in PS skills (e.g., Agran, Blanchard, Wehmeyer, & Hughes, 2002; Nezu, et al., 1991) as well as in adaptive functioning and lower distress (e.g., Nezu, et al., 1991); they show also that participants achieve the goals they set or, at least, moved towards them (Agran et al., 2002; Kramer et al., 2014; Kramer et al., 2017; Wehmeyer, et al., 2000). Research on self-determination, from which PS is an important component (Wehmeyer, 1996), suggests that more self-determined students with ID achieved more positive adult outcomes, as they are more likely to have a job and to earn more (Wehmeyer, & Schwartz, 1997) and a better quality of life (Schalock & Verdugo, 2003; Wehmeyer, et al, 2017). In general, in these programs allowed persons with ID to learn PS skills, set personally relevant objectives and move in their direction, exhibit higher self-determination values and more adaptive perceptions of control.

In addition, new programs are incorporating multiple components, including efforts in the direction of generalization to daily life and function in community (e.g., Kramer et al., 2014), and new technologies (e.g., Kramer et al., 2017). Actually, people with intellectual disabilities use and can learn through electronic means (e.g., Larson, Juszczak, & Engel, 2016; Moreno, & Saldaña, 2005) and several electronic devices have been designed to help them in performing daily living activities (e.g., Tsui, & Yanco, 2010). Also, some programs prepare transition from school to work and community, and independent living. Nowadays, PS skills are considered especially important for individual's well-being and participation in our ever-changing societies, and their promotion is encouraged since school years (OECD, 2015). Nowadays, we notice an effort to build inclusive societies and to make happen the *Convention on the Rights of Persons with Disabilities* (United Nations, 2006). The quality of life of people with ID is a social goal for the most part of us. Problem solving skills can be taught and that can improve self-determination, social inclusion, and quality of life and general, as well as other relevant outcomes in adult life, as having a paid job, adaptive functioning in community, lower stress and higher psychological adjustment.

## **1.2. Self-Regulation of Learning**

Self-regulation (SR) refers to the subject's competence to change himself and have control over its internal processes and external resources. It involves cognitive, metacognitive, affective, motivational, behavioral and contextual dimensions. It integrates specific skills such as problem solving, definition of goals and its monitoring, decision making, persistence, delayed gratification, emotional and stress management and looking for help (Murray & Rosanbalm, 2017). It implies and promotes transverse competences useful in different situations: learning, professional activities, personal and social life (Almeida, 2007; Boekaerts, 1996; Efklides, 2011; Panadero, 2017). SRL refers to the subjects' abilities, at any stage of his life cycle, to control his learning, planning, monitoring and evaluating his thoughts, feelings and actions. SRL is an active and constructive process through which subjects determine their goals and monitor, regulate and control their cognition, motivation and behavior in order to achieve those goals (Goetz, Nett & Hall, 2013; Zimmerman, 2008).

There are several SRL theoretical models. Barry Zimmerman, one of the most relevant researchers in this field, developed three different models in a social-cognitive

perspective: the Triadic Analysis of SRL, represents interactions of the three forms of SRL: environment, behavior and person (Zimmerman, 1989, cit. In Panadero, 2017); the Multi-level model, represents the four stages of acquisition of self-regulatory competencies (Zimmerman, 2000) and the Cyclical Model Phases of SRL (Zimmerman, 2000; Zimmerman & Campillo, 2003; Zimmerman & Moylan, 2009). The multi-level model of Zimmerman (2000; Schunk & Zimmerman, 1997) describes four acquisition and development levels of self-regulatory competences. These levels distinguish behaviors locating them on a continuum from extrinsic social regulation to intrinsic and self-motivated regulation. The first level is observational, and the self-regulatory competence is caused/induced through the observation of an efficient model. The second level is emulative (imitative) and now, in his practice, the subject uses the competences that he observed before but with social support and always following the same patterns and functioning of the model style. These two levels result from what is an essentially social regulation and in the two next levels will progressively transform into a more intrinsic self-regulation (Schunk & Zimmerman, 1997). The third level is self-controlled and now, the subject demonstrates abilities to use self-regulation strategies by himself, but still in structured conditions. Only on the fourth and last level, known as self-regulated, the individual is able to systematically adapt their regulatory strategies to different personal and contextual conditions keeping autonomously the necessary motivation through their perceptions of self-efficacy. The self-regulation competences continue to develop throughout the life cycle and can be strengthened with support, orientation and teaching provided by teachers, caregivers or mentors (Murray & Rosanbalm, 2017).

According to the Cyclical Model Phases of SRL, self-regulation involves three phases: a previous phase, a performance phase and a self-reflection phase. These phases influence each other, giving rise to a new cycle depending on the feedback achieved in each phase. The self-regulatory competences involved in each phase can and should be taught and trained. The previous phase refers to the stage prior to the execution of the learning task itself (Zimmerman, 2013). At this level, subjects should learn and be taught to perform an analysis before the task, defining strategies to action. Such strategies can be to organize the physical and psychological environment; set goals; elaborate the plan to achieve those goals, analyzing the internal and external resources; activate the interest and value of the task and self-motivated beliefs such as perception of self-efficacy and expectations of achievement. The performance phase involves the implementation of processes, such

as self-control and self-observation, necessary to achieve the goals set in the previous phase (Zimmerman, 2013). The process of self-control consists in learning to use specific techniques to direct attention, to use self-instructions, to manage time, to structure the environment, to search for help and to maintain motivation. The process of self-observation consists in learning to activate a self-monitoring related to the subjects' action, performance and outcomes. Self-registrations can be used in order to help the process of self-control. The self-reflection phase happens after learning has been carried out, serving to optimize it (Zimmerman, 2013). In this phase, the subject learns to self-evaluate his achievements (analyze and evaluate objectives defined and achieved), making suitable causal attributions of results, redefining strategies and self-reacting in an adaptive and not defensive way. These self-reflections, on their turn, will influence beliefs and the processes involved on the previous phase of the next learning exercise, completing, in that way, the self-regulatory cycle (Zimmerman, 2013). The experiential learning in this third phase serve as a base for the decision whether to change the strategies on next situations (Madeira, 2014). The aim is not only for the learning to be effective, but that the subject can generalize and transfer the acquired knowledge to other situations and contexts. Although self-regulation is an internal ability, its development and use depend on external factors such as, support environments and relationships (Murray & Rosanbalm, 2017). Interventions about self-regulation should be supported by an intentional focus on the teaching of specific self-regulatory competences (cognitive, emotional and behavioral) combined with a warm and relational context. It is also important to provide assistance to parents and other caregivers in a way that they can develop their own self-regulatory competences. To help the subjects acquire a variety of competences, caregivers and mentors should: a) teach self-regulatory competences through modeling and provide opportunities in which individuals can practice these competences; b) establish a responsible and warm relationship where subjects feel secure to learn and to make mistakes at the same time they explore progressively more complex challenges; c) structure the environment and reduce stress factors, limiting risk behaviors, providing positive discipline and the natural consequences of inadequate decisions and reducing emotional intensity on conflict situations (Murray & Rosanbalm, 2017). The support, training and modeling facilitate the development of comprehension competences, expression and modulation of thoughts and subjects' feelings and behaviors.

Self-regulated learning can be improved both on students with learning difficulties and intellectual disabilities and in students with typical development. The improvement of self-regulated behaviors is accompanied of academic improvement. (Hessels-Schlatter, Hessels, Godin & Spillmann-Rojas, 2017). Although academic grade seems to increase the likely employability of subjects with disability, it doesn't provide an equal stance relating to non-disabled people. Often, these individuals have to deal with low self-esteem and less confidence to successfully achieve their goals. The consequence of this situation is that disabled students worry about their entry into the labor market and about the development of their career (Enright, Conyers & Szymanski, 1996; Cameron, 2011; Gonçalves & Cardoso, 2010). Interventions on self-regulatory competences can help prepare people for employment and self-sufficiency, leading to success (Murray & Rosanbalm, 2017). Career development implies lifelong learning. Hence, learning to learn is a key competence for the development of the individual and its potential and educative, social and professional inclusion. The development of self-regulation brings benefits and advantages in three domains: on personal and daily life; on educative, instruction and professional training and on employment. Self-regulation is fundamental to daily achievements since it permits self-control over internal processes such as thoughts, emotions and motivations in order to achieve several daily tasks and life goals. Academically it leads to autonomy, responsibility and learning management by his own relating to the utilization of strategies, meta cognitive, motivational and behavioral processes (Rosário et al, 2005; Zimmerman & Cleary, 2009). The process of self-regulation involving cognitive, meta cognitive and motivational activities allows the subject to self-analyze and self-assess while simultaneously creating life and career goals and planning the steps necessary to achieve them.

### **1.3. Cognitive flexibility**

Cognitive flexibility, as a high cognitive function, influences the way knowledge is received, represent, (re)structured and applied during response elaboration. This way, cognitive flexibility incorporates three dimensions (Guerra, 2013).

1. Attention flexibility integrating: (i) ample search capability, attentive to diverse elements but never to focalized; (ii) individual capability to accept ambiguity and new experiences; (iii) capacity to realize perceptive synthesis processes in alternative directions or organizing apparently diffuse data;

2. Representation flexibility including: (i) understanding the relationship between concepts, and the distinction between them; (ii) capacity to represent knowledge of different conceptual perspectives;
3. Response flexibility: response flexibility involves the capability of one individual to: (i) generate more than one strategy for problem-solving or decision-making and (ii) changing strategy when environmental demands justify it, and (iii) inhibit response.

Cognitive intervention can have different shapes: rehabilitation, training or stimulation have brought benefits to populations with cognitive deficit and dementia. The former focuses on relearning and recovery of lost functions, the two latter focus on a structured practice of exercises direct to maintenance or promotion of specific functions or, even, on application of methodologies aiming to improve global mental functioning (Buschert, Bokde & Hampel, 2010; Clare & Woods, 2004; Clare, Woods, Cook, Orrell & Spector, 2003; Martin, Clare, Altgassen, Cameron & Zehnder, 2011). This rehabilitation has been effective on improving cognitive functions, on daily life activities performance and improving individuals' QOL (De Vreesi, Neri, Fioravanti, Belloi & Zanetti, 2001; Ávila, 2003; Pontes, Hubner, 2008; Tucha, Tucha, Kaumann, König, Lange, Stasik, Engelschalk & Lange, 2011). In this regard, we view cognitive flexibility training as relevant for people with cognitive deficit and intellectual disability.

According to Lezak (2012), executive functions, where cognitive flexibility is located, enable the individual to have an independent, intentional, and interested behaviour. The same author identifies four key parts of executive functions: i) volition that is the ability to formulate goals, self-motivate and self-consciousness; ii) planning, that is to say, the ability to identify and organize strategies aiming to meet outlined goals; iii) self-control, meaning, the ability to initiate, maintain, change and stop sequences of complex behaviours in a productive way for responses, (iv) the ability for self-monitorization, being able to regulate their own behaviour by means of their results evaluation. In summary, executive functions allow people to be successful in their behaviours they intentionally and independently choose to have. This way, we believe that cognitive flexibility is important for adult life insertion of adults with cognitive deficit or intellectual disability

We believe it is equally important for an active life insertion in this population considering that the essential roles it plays on problem-solving- Among other basic processes, the one that seems to be more relevant for problem-solving is (Ordóñez-Morales, 2003; Siegler,

1998). Generally, mental representations are the material in which the cognitive processes act upon and, because of that, problem-solving solutions are based on representations. Problem-solving is a dynamic activity, resulting from the interaction of an individual and his/her problem. This interaction requires a constant adjustment between what the subject wants in each moment and what the concrete reality of the problem allows. This adjustment individual-problem's demands implies that the first one updates and modifies, during the process of resolution, the mental representation of the problem. This way, one shared feature of all the essential processes on problem-solving is change, from which one infers the need for cognitive flexibility is transversal to process involved on problem-solving.

Just the same, attention flexibility seems to be crucial in the problem-solving process. LaBerge (2004) highlights some main features of attention flexibility: (i) selection of one intentional action instead of choosing a stronger one or automatically selected one. Choosing the desired action supposes the application of an internal attentional signal, resulting in the execution of a less salient action instead of a more prominent one; (ii) preparation of a future action. Preparation is associated to an internal attentional signal and to an increased speed when necessary to shift the task. Memory is particularly important in situations when it is necessary to retake one task that was interrupted, just as when it is necessary to recall a prior stimulus, from which it is impossible to infer based on current status of the context; and (iv) bigger automatization of task execution, through attentional effort. One task that initially needs focalized attention, will progressively need a more intermittent attention until it is possible to be realized in a automatic way.

Response flexibility is equally essential to problem-solving. Effectively, subjects need to respond in a flexible way and to adapt voluntarily their behaviours to changes happening in the context. This way, a flexible behaviour implies the capacity to change representations (representation flexibility) according to information collected from the context (attention flexibility), but it is equally important to maintain a representation intact, when changes are almost irrelevant. Response flexibility offers means so that in variable and new circumstances, the subject would be capable of choosing adequate responses to new features of a problem, modify a behaviour, adapting it to the context and to find new strategies to achieve goals (Adolph, 2005; Adolph & Berger, 2006; Adolph, Joh, Franchak, Ishak & Gill-Alvarez, 2008).

#### 1.4. Self-Directedness

To comply with the framework set by UNESCO's "*Assessment of Transversal competencies*" (Care & Luo, 2016), transversal skills are critical knowledge, skills, values, and attitudes for a successful integration in the 21st century. Transversal skills have essential for our target-group, adults with Learning Disabilities (APA, 2013). Based on the transversal skills acquisition these adults would be able to be competitive on the labour market. Among other key areas, one of the focused dimensions is intrapersonal skills, which as a transversal skill might be understood as perseverance, self-direction, planning, self-discipline, adaptability, and initiative (Great Schools Partnership, 2016).

The relevance of this theme is reinforced by the Convention on the Rights of Persons with Disabilities, in which the countries that ratified the convention have now the duty to promote, protect and ensure that all people with disability are able to enjoy their human rights and fundamental freedoms. That is why there is a sense of urgency to empower individual autonomy, freedom to make one's own choices, Independence, participation and inclusion in society, equal opportunities, among others.

One of the holistic frameworks to work on initiative and self-direction issues was Cloninger's psychobiologic model of personality (Cloninger, Svrakic, & Przybeck, 1993). Cloninger et al., (1997), stated that personality is comprised of temperament and character traits. Temperament refers to differences between individuals in their automatic responses to emotional stimuli. Character refers to differences between voluntary values and goals of each individual, based on the individual's personal experience of relationships the environment. In sum, Cloninger et al. (1993), claimed that different personalities would explain the differences in the way adaptive systems involved in the reception, processing and storing of experiences differ from person to person. On Cloninger's et al. model (1993), there are 4 dimensions on temperament: *Harm Avoidance* (ie., worries, fear, fatigability, shyness, doubtful and pessimism) *Novelty Seeking* (ie., the tendency to respond and seek new stimuli, impulsive decision-making), *Reward Dependence* (ie., tendency to respond to signs of reward and social approval) e *Persistence* (ie., the propensity to persevere in behaviours despite frustration and fatigue). The dimensions related to character are *Self-Directedness*, *Cooperativeness* (ie., the individual's acceptance of other people, supports and respects for the needs of others) and *Self-Transcendence* (ie., the individual looks to be part of the nature and universe). In general terms, *self-directedness* refers to self-determination or willpower, being

considered the capability one has to control, regulate or adapt behaviour regarding voluntarily chosen goals and values (Cloninger et al., 1993). People with high levels of self-directedness are mature, problem-solvers, resilient, self-confident, have good self-esteem, goal-oriented, well integrated, good autonomy, with an internal locus of control, responsible, reliable, control their own behaviour in accordance with their choices and goals, are able to admit their faults, live a meaningful and purposeful life, are resourceful and show initiative (Cloninger, 1994; Cloninger et al., 1993; Cloninger & Zohar, 2011). In contrast, low self-directedness suggests an internal organization with, immature, fragile, blame others for their problems, unreliable, ineffective, low self-esteem, insecure, reactive, dependent, resourceless, external locus of control, undisciplined (Cloninger, 1994; Cloninger et al., 1993; Cloninger et al., 1997). Self-directedness has a key role on people's wishes and hopes, influencing all facets of well-being and happiness. (Cloninger & Zohar, 2011).

The concept of self-directedness is, in Cloninger's et al. (1993) perspective, associated to an individual autonomous self-concept. And self-directedness might be understood as a concept somewhat similar to autonomy, internal locus of control, agency, self-efficacy, and self-determination (Cloninger, 2004). The principle of self-determination is relevant for people with disabilities, given that it is one of the main predictors of QOL (Wehmeyer & Shogren, 2017).

There are evidences that reinforce the notion of investment in supporting adults with intellectual or developmental disabilities, given that this support improves self-determination (Nota et al., 2007). A higher or lower level self-determination level has a correlation with the opportunity to make choices/decisions, self-advocate and set goals (Nota et al., 2007). Several studies show that IQ has some relevance, for instance, predicting where people with disabilities will live or work, however, IQ is not a predictor for self-determination (Nota et al., 2007). Another skill that is positively correlated with self-determination and QOL are social skills (ie., the ability to learn and with deal with daily life (Nota et al., 2007). Researchers studying self-determination in people with disabilities are currently recommending the promotion of social skills, decision-making/choice-making opportunities, problem-solving skills, goal-setting skills, considering that this improves self-determination and QOL (Wehmeyer & Shogren, 2017).

Finally, if the goal is to realize the UN Convention for the Rights of People with Disabilities it is essential that the existing difference between self-determination in people without and

with disabilities needs to be surpassed (Wehmeyer & Shogren, 2017). People with disabilities are living in a more controlling and dependency-creating context, resulting in less opportunities to express preferences and to make decisions, so their autonomy and self-regulation is less developed, consequently, having less self-determination (Wehmeyer & Shogren, 2017).

## **1.5. Creativity**

Although there is no consensus regarding the concept of creativity, it is possible to define it as the ability to innovate and to respond to requests, challenges, or imposed or self-imposed goals, using intelligence, rational or emotional, or other resources from the mind, with the aim of obtaining a result, a varied signal effect on the decoders' sensitivity (the audience to which he presents the result), a certain degree of satisfaction or fulfilment is felt by the one who caused the effect and in those to whom he/she communicates it.

Creativity is coupled with innovation, changes, transformation into something, is linked to intelligence, one skill, ability, or performance, and to one effect more or less useful, but never indifferent. One could say that creativity is founded from a process, the creative process, that always starts from nothing to something, from the same to something different, from common to original, from a little to a lot, from limited to extensive, from what it is to what it should be.

Gardner defines creativity as "...one characterization allocated to products that initially are considered as novelty in one field of expertise but, ultimately, they are recognized as valid inside the appropriate community..." (Gardner, 1995, p.67). Creativity is a mental activity, a place in the mind of a few special people... (Csikszentmihalyi, 1997). On the other hand, Maslow also defines creativity as the tendency to self-realization, meaning that, it stems from the individual need of fulfilling everything one can be (Maslow, 1954).

It is also possible to understand creativity as the ability to think, act and produce on several domains of action and interaction with the context (intellectual, cultural, social, moral, axiological, aesthetical, etc.).

Even though a wide range of definitions exist, it is still difficult to find one theoretical and objective suited to what is creativity. Fátima Morais acknowledges that "the list with definitions is getting bigger every day. This big effort to delimitate and understand the

subject of study, there seems to be not match concerning the precision and integration needed to accomplish that goal” (Morais, 2001, p.34).

The difficulty to operationalize, as well as the ambiguity of the subject, forces us to look for a delimitation with meaningful representations of the subject, exploring the complementarity and consensus regarding the meaning of creativity, simultaneously exploring the issues revolving around it. Some theoretical models provide us proposals of approaches to creativity. Models such as Psychanalysis (Freud); the Humanists (Maslow and Rogers); the Associationists (Mednick, Ochse e Baer); the Factorial Model (Guilford) and the Gestalt Model (Wertheimer) (Morais, 2001). Among other theoretical frameworks we are able to choose which one are more suited to the produced *corpus*.

Among the precursors of some models of analysis we can find agreement concerning the nature of creativity recognizing some features concerning innovation, imagination, creation and invention of new products, different from common ones, products that develop in a certain context in accordance with individual personality, his/her intelligence and motivation.

Sternberg & Lubart (1996) consider that different theories contribute to approach the study of creativity, the multidimensionality of the subject. While studying creativity one must admit several elements of analysis, either by the point of view from the context where the subject is inserted, or by the point of view of the production of the individual. For instance, Feldman lists some dimensions for development of creativity, while referring that “If we are to conceptualize creativity as involving several dimensions, it is useful to summarize what these dimensions include: 1. Cognitive processes; 2. Social/emotional processes; 3. Family aspects: growing up and current; 4. Education and preparation: formal and informal; 5. Characteristics of the domain and field; 6. Social/cultural contextual aspects; 7. Historical forces, events, trends.” (Feldman, 1999, p.171-172).

Csikszentmihalyi, acknowledges that creativity isn’t produced inside the mind of some people without interaction between that person thoughts and a sociocultural context, that is why a system is needed: by the *setting* (a set of rules and procedures also nominated as culture); by *context* (formed by those individuals who give access to the setting) and by the individual person (when a person use symbols of a specific arts or science domains and transform them into a new idea) (Csikszentmihalyi, 1997).

The individual isn’t born as a creative, he/she becomes creative, as stated by Csikszentmihalyi (1999). The creative process is a systemic phenomenon and not

individual, because it is developed in accordance with potentiality from the *setting* (extrinsic features) and not just based on the opportunities and *characteristics of people* (intrinsic features). The setting has a key role on triggering the creative process, as in the case of family, school, culture, and society.

Following this line of conceptualization of constraints and nature of the creative person, Rhodes (1961) proposed a four P's scheme comprised by: Person; Process; Products and Press (i.e. social context) (Morais, 2001). This theoretical model reinforces the idea, already developed by Csikszentmihalyi that an individual and his/her context interact in the process of vocational development of the creative person.

The *originality* of work is one of the most cited issues, even though this feature is a subject for discussion by several authors, such as Perkins (1988) and Martindale (1989), who question and appeal to the relativism of the concept. These authors "...don't hesitate while stating that nothing is original in the *pure sense*... we only can talk about originality as a translating criterion for a new combination of existing elements... when something is original, *who is it original for?* For the individual, for the culture to which he/she belongs or to the world at large?" (Morais, 2001, p.201).

Other characteristic prominently referred in the creative person is *talent*. Gardner defines talent as "... a sign of early biopsychosocial potential in any field, gaining the epithet of "gifted" (p.67). The *talent matrix* encompasses the biopsychosocial perspective, task specificity, intelligence, extraordinariness, creativity, experience, and geniality (Gardner, 1995).

Originality and talent, or what we commonly validate as such, doesn't exhaust the criteria based on which we define a person as creative, but the highlighted traits that might qualify them.

## **2. How to improve cognition and inclusion**

Human nature has a lot of potential for growth, a great capacity to adapt, change and grow, and it matters a lot of what people (clients, professionals) believe it is possible to achieve (Dweck, 2006). A good self-esteem is central to development as when we fail and make mistakes, we don't feel threatened, because we already feel we are good enough.

## **2.1. The importance of a safe environment and challenging environment**

Challenges should be viewed to promote resiliency and the emergence of new skills, instead of making clients, professionals, and organizations feel “dumb” or unintelligent (Yeager & Dweck, 2012). When people embrace challenges, there will be, inevitably, mistakes! But clients, professionals and organizations with a mindset directed towards growth, thrive on mistakes. What follows the mistake is an essential part of growth, and that is when reflection comes into place. In accordance with Dweck’s (2006) perspective, when clients see their peers being capable of doing things they aren’t, they might feel as if that gap is unbridgeable. But, when organizations, professionals and clients are growth-minded they give them tools to close that gap.

The way instructions are made is very important. Simply put, we must always look to help clients use better strategies (Yeager & Dweck, 2012). Instructions may involve constructive criticism helping clients do a better job (Dweck, 2006). Also, people need to try new strategies but continually seek for input when they are stuck, and that is exactly what happens in most presented approaches (Dweck, 2015). But, more importantly, the focus shouldn’t be in immediate outcome. The clients should learn to trust the process, focusing on strategies, effort and choices (Dweck, 2006).

## **2.2. We don’t want to look smart and avoid challenges!**

clients’ self-esteem was maintained through avoiding activities/exercises/tasks/games that would make them take risks or make mistakes, and in turn only inviting clients to do activities where they were flawless, their mindset would be a fixed, and when facing a difficulty in real life, their self-esteem would be shattered, because “*mistakes need to be avoided*” (Dweck, 2006). While evaluating clients’ mindset it would be very important to assess the way they look toward challenges, if they enjoy seeking challenges, if they understand setbacks as part of learning and if they show resiliency while facing difficulties – all facets of a flexible and growth mindset (Dweck, 2011).

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development as when we fail and make mistakes, we don't feel threatened, because we already feel we are good enough.

However, the hallmark of human nature is how much of a person's identity is not built in; rather, it is humans' great capacity to adapt, change, and grow. This nature versus nurture debate matters—not only to students of human nature—but to everyone. It matters whether people believe that their core qualities are fixed by nature (an entity theory, or fixed mindset) or whether they believe that their qualities can be developed (an incremental theory, or growth mindset). (Dweck, 2006)

### **2.3. Reflection is essential while dealing with setbacks**

When people embrace challenges, there will be, inevitably, mistakes! But clients, professionals and organizations with a mindset directed towards growth, thrive on mistakes. What follows the mistake is an essential part of growth, and that is when reflection comes into place. When everyone is in the same page, everyone starts to understand that it is OK to make mistakes. In accordance with Dweck's (2006) perspective, when clients see their peers being capable of doing things they aren't, they might feel as if that gap is unbridgeable. But, when organizations, professionals and clients are growth-minded they give them tools to close that gap.

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### **2.4. Success of others is my success**

In order to further personal development and a growth mindset, clients cannot have a stagnant view of other people, forming rapid judgements of other people traits (Dweck, 2011). If they don't develop a growth mindset towards their peers, when facing an ambiguous social situation, they will quickly jump into the conclusion that other people did what they did with the purpose of being mean or that *"I'm just not a likeable person"* (Yeager & Dweck, 2012). When people learn about other people thoughts, feelings,

motives, needs, and beliefs, they will reflect about these situations as being more hopeful, they will become more resilient and they will perform more prosocial behaviors (e.g., such as trying to help another person) (Dweck, 2011; Yeager & Dweck, 2012). When clients understand that people's feelings and thoughts are changeable, they will understand that they can help through empathy and that while facing a confrontation or rejection from a peer, those are momentary feelings or thoughts (Yeager & Dweck, 2012)

## **2.5. The importance of caring and the importance of having growth mindset practices**

Concerning Dweck (2006), a professional aiming to promote a healthy mindset for growth must create an atmosphere of trust and nurture, instead of lowering the standards. When there is an atmosphere of affection and deep personal commitment, clients feel that the professional is going to teach, and not going to judge. So, as promoters of growth, professionals must be authentic, but also disciplined.

Those professionals and organizations who dare to be authentic, must reflect about their own growth mindset. This means that mistakes or failures can be seen by professionals as enhancing or debilitating, and this belief (fixed/growth) is going to be reflected in their practices. When professionals face failure/mistake, their reaction to the clients' failure/mistake is more visible than their abstract beliefs about their potential for growth (Haimovitz & Dweck, 2016). When clients make mistakes in a task or activity, a professional with a fixed mindset might **feel** anxious and **react** that way. When professionals have a failure-is-debilitating mindset, they might start pitying their clients, doubt their abilities, comforting them for not having enough ability. But, when professionals have a learning-oriented mindset, they see failure as enhancing, and focus on how to learn from the experience and improve (less on setbacks and what they mean) (Haimovitz & Dweck, 2016).

Professionals need to have a strong dedication, a strong curiosity and strong feedback givers (Rattan et al., 2012). This feedback needs to be challenging, instead of comforting, because the former motivates people to aim higher, and the latter makes people expect less and decrease effort and motivation (Rattan et al., 2012). Well intentioned professionals might easily try to comfort their clients when they face setbacks, but that practice can backfire and be detrimental to clients' long-term development (Rattan et al., 2012).

## **2.6. Professionals and organizations need to want to keep learning**

Dweck (2006) states “The great teachers believe in the growth of the intellect and talent, and they are fascinated with the process of learning.” This space where the professionals can think about their practices and beliefs is essential when working in the context of disability. It is incredibly difficult to continuously learn about we and others, to know what makes people tick, to propose challenging tasks addressing transversal skills, to adjust on-the-go depending on people’s dynamics, to promote a safe and modifying environment.

Especially important, when talking about continuously learning professionals, gamification and serious games are here to stay. So, when useful those approaches could be used. And they are made to promote a growth mindset as they have different level tasks, simulates social interactions, allows simultaneous reflection with a professional, but, even more important, they are used to *support the learning process* (as a complement) (Landers & Callan, 2011). Gamification has a very powerful effect on learners’ motivation and it takes advantage of several psychological mechanisms (Landers & Callan, 2011). Research shows that games empowering prosocial behaviors really have an influence on players’ prosocial behavior (Greitemeyer et al., 2010).

## **2.7. Appreciate don’t praise**

In accordance with Dweck (2006), it is good to appreciate practice, study, persistence and good strategies. Professionals should stay away from praising intelligence or talent. Sometimes, clients are involved in activities just for the sake of their own experience, just the process itself. When praising goes wrong the clients might feel with lower expectations, less capable, less willing to try out new things and take risks (Rattan et al., 2012).

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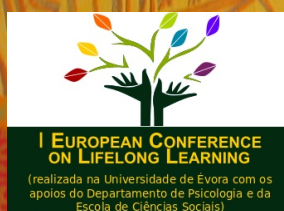
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A globalização colocou um novo enfoque no conhecimento como gerador de inovação, o recurso fundamental para o sucesso económico dos países, das regiões, das empresas e das próprias pessoas na sociedade da tecnologia da informação e da comunicação que caracteriza a atualidade. Neste cenário, a necessidade de preparar as pessoas para fazer face à mudança e serem elas próprias agentes de mudança é crucial para o sucesso pessoal, económico, social e cultural.

Este livro surge da confluência de contributos vindos de três projetos ENABLIN+ (Leonardo Da Vinci), Cognition & Inclusion (ERASMUS+) e LLL-HUB (Lifelong Learning Programm) e da I Conferência Europeia em Life Long Learning (realizada na Universidade de Évora) em torno de um tema central: Desenvolvimento humano ao longo da vida – Aprendizagem, Bem-estar e Inclusão. Neste livro o desenvolvimento ao longo da vida é abordado em função de três temáticas: Aprendizagem(s) ao longo da vida; Vulnerabilidade(s) e Bem-estar; Inclusão ao longo da vida.

Trata-se de um livro importante para estudantes, investigadores e profissionais da psicologia, das ciências da educação, das ciências da saúde, e de outras áreas afins. Na “sociedade do conhecimento” dos nossos dias, onde abunda a informação e se apela as destrezas cognitivas na sua seleção e manuseamento, a aprendizagem ao longo da vida o bem-estar e a inclusão ganham relevância na abordagem ao desenvolvimento ao longo da vida.



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