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Presentación

Introduction

How to become a genius. Personalized learning and high intellectual abilities in the connected society

Cómo llegar a ser un genio.

Aprendizaje personalizado y altas capacidades en la sociedad conectada

Guest-edited special issue:

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We are facing a complex and changing world which forces us to (re)consider the ideas that have been valid until now and the emergence of new ones on issues like globalization, the impact of new technologies, the interdisciplinary nature of knowledge, or the creativity that permits us to adapt to change and allows us to make progress in this networked world and to become immersed in the digital culture.

Emerging technologies and the virtual world, progressively involving us to a bigger extent, are some of the elements of this change. It is necessary to understand their impact on human intellectual competences and the need to restructure our knowledge. However, it is important to consider that, in this changing environment, the current reality is different from the assumptions on which the main theories underpinning our ideas of the development of human cognition and education were based. Therefore, education and those who concern themselves with it, need to find new research-based ideas to guide the practical work in this new environment. This way, education would consist of effective interventions to develop the individual and optimize the skills and competencies of learners. Finally, education would help to construct skills and competencies, attitudes and knowledge which are necessary to cope and manage with the complexity of today's world by taking opportunities and using effective and, above all, ethical and jointly responsible means.

In this current environment, complex and full of challenges, people with high intellectual ability have a rich neurobiological potential and resources to generate tools, products and efficient innovations, which are new and well adjusted to respond to the challenges of today's world. However, as current science demonstrates, high intellectual abilities suffer from inaccurate, unscientific approaches in mass media that confound personal characteristics with identification and educational methods. On the other hand, scientific research demonstrates that the multidimensionality of the resources of high potential demands for explanations how the initial potential develops over childhood and youth (Subotnik, Olszewski-Kubilius & Worrell, 2018) so that their excellence crystallizes during adulthood, revealing all their competencies to enable the social capitalization of their achievements. In this expression of potential throughout child and adolescent development, we have to take into account intra- and interpersonal variables that modulate such potential, amongst them changes in the socio-political, cultural and technological context have a crucial impact.

In the end, the central question is how to guide a person with a special pattern of high intellectual potential, who might be neurobiologically gifted, towards excellence or "genius" in adulthood, understood as the production of useful, creative, and innovative achievements for human progress in line with the challenges of the complex context of a changing reality. In other words, how the structural physical base and its neural functioning are

Presentación

Introduction

Comunicar, 60, XXVII, 2019

developed by a person in a given environment, creating the necessary functions and knowledge while turning their potential in useful achievements.

It is still unclear whether the social complexity of our century with all the rapid changes involved represents a context that enhances the manifestation and contribution of high intellectual ability. It is necessary to amplify interdisciplinary neuropsychological research on the nature and functioning of high intellectual ability in order to optimize diagnostic strategies that enable its reliable and accurate identification, along with the effectiveness of the increasingly numerous emerging educational practices that must be based on the above assumptions.



The selected research that make up this monographic issue all represent efforts to explore how some of the modulating variables influence the development of high intellectual potential, how they act together, and how they can help the individual adjust in a broad sense to the current, complex and changing, as well as digitally influenced environment.

The article by Sastre-Riba, Fonseca-Pedrero, and Ortuño-Sierra propose the analysis of latent classes of multi-dimensional configurations of one of the moderating variables in the expression of high potential in early childhood towards the Genius in adulthood. The variables under investigation are closely related to the desire to achieve excellence, such as perfectionism. The results not only contribute to a better understanding of perfectionism by confirming results of other studies and providing new evidence on the balance between its components like “high standards”, “love of order” and “discrepancy” and its emergence in different profiles of perfectionism: healthy/adaptive, unhealthy/poorly adapted and non-perfectionist. The results also suggest its impact in the the differentiated education of learners with high intellectual ability to promote the components of positive or healthy/adaptive perfectionism taking into consideration the digital context and learners’ motivation.

The article by García-Guardia, Ayestarán-Crespo, López-Gómez and Tovar-Vicente, discusses the role of the eagerness to achieve and how to promote it in learners with high intellectual potential through differentiated curricular content. Thus, a bridge from adolescence to employment in early adulthood is established. The authors focus on that important intrapersonal moderator variable of intellectual potential which is also related to perfectionism and the emergence of excellence. The interpersonal context, its perception by the individual and its influence, are also taken into account. To do this, the authors describe the competencies that shape the eagerness to achieve and propose a questionnaire aimed at parents, teachers and adolescents with high intellectual ability in order to

operationalize the profile required for productivity at work. On the basis of the identified components, they propose the curricular implementation of a differentiated cross-sectional teaching-learning process for learners with high intellectual ability containing the facilitating skills of the eagerness to achieve excellence.

The third contribution by Villarreal-Romero, Olaya-Escobar, Leal-Peña, and Arley-Palacios is linked to the previous articles by dealing with motivation and attitudes towards science and scientific creation during childhood. The methodology used and the findings of the study lead to significant conclusions on how new technologies can be combined with board games to promote domains of shared interest towards science among groups of children. In addition, the personal characteristics of the children and their contributions are considered, through a strategy of visual communication introduced in the teaching-learning process.

On the other hand, García-Perales and Almeida present a work based on a curricular enrichment program for students with high intellectual abilities. The study includes two control groups in order to evaluate its effectiveness. The results point to improvements in the levels of personal, scholastic and general adaptation, encouraging the implementation of different curricular enrichment programs to promote the development of high intellectual ability.

Finally, the monograph is completed by the work of Castelló-Tarrida, Cladellas-Pros and Limonero-García discussing the vision of high intellectual ability in adulthood and offering a perspective of how success could be reached in this stage of life through the crystallization of initial potential. The authors carry out a biographical study of individuals who have shown high performance and yielded products of excellence in their professional trajectory. The authors find that this successful journey corresponds to a greater extent to the management of the intellectual resources available to the individual, with or without external technological support, than only to a high intellectual potential. The authors stress the importance of the use of the brain's resources or functions, their activation on valid and differentiating knowledge structures in a logical and creative way. In short, it seems evident that a trajectory towards excellence does not only depend on a structural basis that represents high intellectual potential, but also on the incidence and importance of intra- and interpersonal moderating variables, emphasizing that the significance of technological resources lies not so much on their availability as in the way in which they are used. That is, they would be a useful medium or device but not an end in itself for the optimal development of high intellectual potential.

All in all, the contributions that make up the monograph converge in the multidimensional conceptualization of high intellectual ability (logical-deductive competencies, creative competencies) on the basis of a neurological configuration, characterized by neural efficiency, that enables a high potential for effective intellectual processing. This develops throughout childhood and adolescence, in a trajectory with a probabilistic epigenesis, influenced by intra- and interpersonal variables, producing a covariance in the expression of that vast neurobiological potential. It is important to emphasize that high potential does not lead to achievement nor to broad productivity and excellence – meaning Genius–, on its own. Similarly, a high competence in some area of intellectual functioning such as verbal or mathematical, does not necessarily imply achievements in other fields (for example, creativity), nor in general. Therefore, a more complex concept of high intellectual ability than that of IQ only has to be used. In short, a concept based on a more real model of development, multidimensional and dynamic, to the extent that its expression is modulated by the epigenesis of probabilistic covariation between endogenous and exogenous variables according to the complexity of today's world. Among the moderating variables, the articles presented in this monograph refer to intrapersonal variables such as perfectionism and eagerness to achieve excellence, alongside the management of resources and a useful structuring of knowledge, while considering interpersonal variables linked to differentiated education that moderate and stimulate the transformation of potential in excellence or genius. We have to identify the necessary competencies for this in today's world in order to progress.

Even if high intellectual ability in all its multidimensionality could be understood and measured reliably, the challenge remains, since its development is influenced, by the individual's management of high intellectual ability's resources and intra- and interpersonal moderator variables. In addition, it is necessary to generate fair opportunities for its development, so that, ethically, we can offer instruments and guides for understanding and adapting to the changing complexity of the current digital era. This monographic offers an overview of it all.

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