

# Educational intervention for students with High Intellectual Ability:

Development of cognitive, academic, and socioemotional skills

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Three **Meta-Analyses** to Determine the Effects of Enrichment on High Intellectual Ability (HIA) Learners

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# Three **Meta-Analyses** to Determine the Effects of Enrichment on High Intellectual Ability (HIA) Learners

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# 1.1. High Intellectual Ability Education

(Lería-Ugarte & Sastre-Riba, in Press)

## Challenge

The expression of high intellectual potential

Neurobiological predictor – endogenous and exogenous modulators

(Sastre-Riba, 2020)

- ❑ Among exogenous factors, **education** plays an important role
- ❑ **Adjusting educational attention** to people with HIA (Riedl-Cross & Cross, 2022):
  - Individual need
  - Investment in a sustainable future for society

## Educational context

Fragmentation

Diversity



## HIA learners

They require educational programmes tailored to their **high potential, intellectual profile, and well-being**

(Reis et al., 2021; Sternberg & Ambrose, 2021)

- ❑ These **educational needs** might be expressed at the following levels:
  - **Cognitive** (Elballah et al., 2024)
  - **Academic** (Kaul et al., 2016)
  - **Socioemotional** (Gubbels et al., 2014)
  - **Ethical** (Sastre-Riba, 2026)



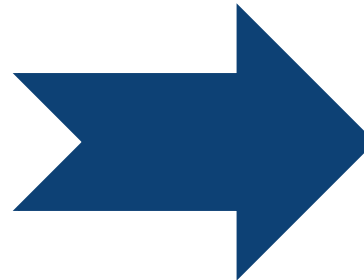
# 1.3. Curricular and extracurricular enrichment (Lería-Ugarte & Sastre-Riba, in Press)

## ENRICHMENT



Strengthen the application of interdisciplinary methodologies  
Encourage the expression of high potential and promote well-being  
Create novel products

(Brigandi, 2019)



## OBJECTIVE



**To analyse the current state of enrichment** programmes and partial enrichment globally, and their **effects** on the **cognitive, academic,** and **socioemotional development of learners with HIA**

# 1.4. Method

(Lería-Ugarte & Sastre-Riba, in Press)

## Systematic review: 11/24 - 12/24

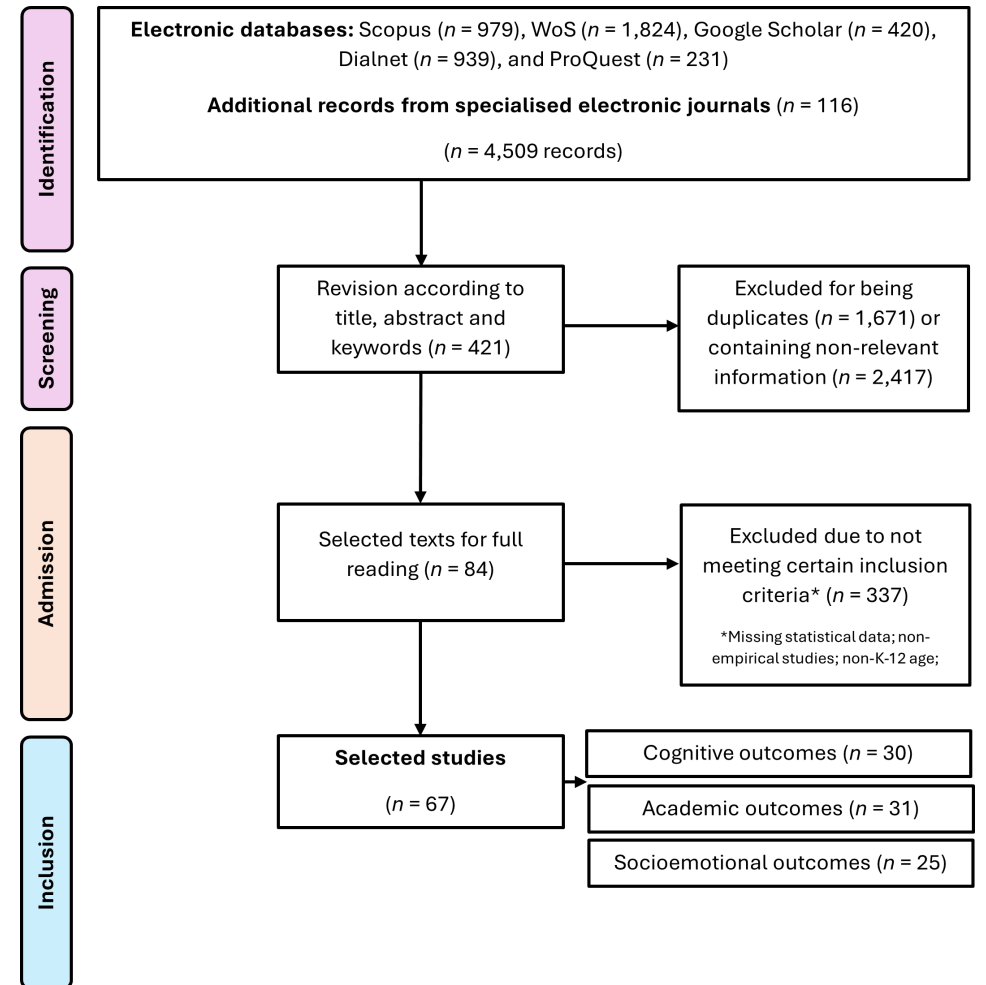
- Repetition of data extraction: 09/25 - 12/25
- $kc = 0.851$  (high level of intra-observer agreement)

## Inclusion and exclusion criteria:

1. Be empirical in nature.
2. Involve two groups of learners (experimental and control) or one group with pre-post measures.
3. Cover the age range corresponding to K-12.
4. Regarding the enrichment program: (a) include curricular or extracurricular enrichment strategies, and (b) exclude educational intervention programs based entirely on acceleration.
5. Monitor any of the following indicators: cognitive development, academic achievement, and socioemotional development.
6. Provide the appropriate statistical data to calculate the effect size.
7. Be published in an English or Spanish-language journal indexed in JCR or SJR metrics.
8. Be published between 2010 and 2025.

## Meta-analyses

1. Calculation of the effect size for each empirical study
2. Calculation of the pooled effect size and confidence interval
3. Assessment of empirical heterogeneity
4. Assessment of publication bias
5. Sensitivity analysis
6. Analysis of moderating variables



## 1.5. Results: the impact of enrichment programmes (Lería-Ugarte & Sastre-Riba, in Press)

1

Each scientific record employs **different terminological criteria**

2

Distribution of effect sizes → **a tendency toward a positive effect of enrichment programs (total or partial)** on the development of HIA learners

3

The three meta-analyses demonstrated a **positive and significant effect ( $p < 0.001$ )** of the programmes  
The **nature** of the studies **was not homogeneous**

4

### **Sensitivity analysis:**

+ It helped to reduce empirical heterogeneity

- It produced a systematic reduction in the effect size of these programs

**From a medium-high effect to a medium-low effect**

5

The high empirical heterogeneity could be explained by the influence of **moderating variables**. These include:

- Cognitive studies:  
grade level
- Academic studies:  
type of study / sample size / region
- Socioemotional studies:  
none of the assessed moderator variables

# 1.7. Conclusions: the impact of enrichment on HIA learners (Lería-Ugarte & Sastre-Riba, in Press)

## Enrichment

It is a desirable educational strategy IF it is properly justified, implemented, and measured in terms of effectiveness

### ❑ Achievement of the main objective

It demonstrated (as **Gül & Ayık, 2026; Kim, 2016**) the OVERALL TREND towards **POSITIVE, SIGNIFICANT, AND MODERATE EFFECTS** of enrichment programmes (or partial enrichment) on the development and education of learners with HIA (**Brigandi et al., 2018; Elballah et al., 2024; Gubbels et al., 2014**)

It faced: **conceptual disparity and lack of clarity** regarding the nature of HIA and its cognitive, academic, and socioemotional approaches to **educational personalisation**

**A high level of impurity** that cannot be explained by publication bias

❑ Common underlying pattern: **a high degree of heterogeneity** → moderating variables

**A wide range of backgrounds** that result in different strengths, weaknesses, and needs regarding educational participation (**Sternberg & Ambrose, 2021**)

Influence of atypical studies



**NEED** for **research and educational intervention in HIA** to be based on scientific evidence that has been applied and evaluated for its effectiveness



**NEED** for more research with greater conceptual clarity on the nature and development of HIA and its effectiveness

# The **educational system** in Spain and its approach to giftedness and talent



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## **2.1. Governance of the Spanish educational system**

## **2.2. Educational stages**

## **2.3. Internal organisational structure of an educational institution**

## **2.4. Attention to diversity and educational inclusion in Spain**

## 2.5. Specific attention for HIA learners

*The education administrations shall provide the necessary resources to ensure that all pupils achieve their full personal, intellectual, social, and emotional potential, as well as the objectives set out in general terms in this law.*

*It is the responsibility of the education administrations to **ensure that the necessary resources are provided** so that students who require educational attention different from the standard provision, [...] due to their high intellectual abilities [...], can **achieve the fullest possible development of their personal abilities** and, in any case, the objectives set out generally for all students.*

LOMLOE (2020, p. 122909)

### Acceleration

**The duration of the stage can be reduced by one year**  
Assess previously personal well-being and socialisation

Develop **curricular enrichment plans** designed to improve the skills of those pupils who need it

From Primary School onwards



**NO** common protocol across the 17 autonomous communities + low detection rates (under-diagnosis) + a lack of training for teaching staff

# Spanish **programmes for educational attention** to HIA learners



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## 3.1. Diversity in program offer by autonomous community

- ❑ The principles of **inclusion and equity are not always guaranteed** for the group with HIA

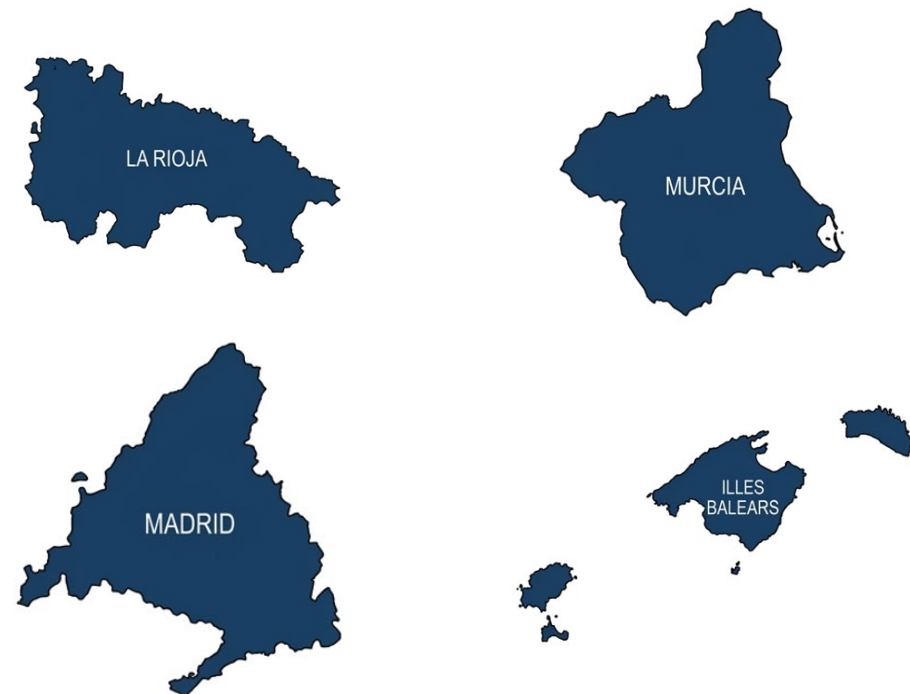
INEQUALITY IN SPAIN: disparities in educational provision between regions and the need for training for school leaders, counsellors, and teachers.

(Elena Monleón et al., 2025)

The **National Confederation of Associations for High Abilities (CONFINES)** highlights the need for changes to education to ensure adequate attention in both the educational and social spheres.



The following **examples** are offered to illustrate this phenomenon



**3.2. La Rioja**

**3.3. Madrid**

**3.4. Murcia**

**3.5. Illes Balears**

# Linguistic and cultural adaptation of the LemaS Survey



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**4.1. Linguistic adaptation: semantic and cultural equivalence**

**4.2. Cultural adaptation: conceptual and institutional equivalence**

**4.3. Process outcomes and evidence of validity**

# Future research lines



Descriptive analysis, reliability testing, normality assessment, correlational analysis, and hypothesis testing

Cross-cultural comparative analysis (Spain – Germany)

Mixed-methods integration (quantitative + qualitative)

Network analysis (centrality indices, expected influence, and network stability)

Factorial analysis and hypothesis testing

Cluster analysis (profile identification)

Text mining or sentiment analysis

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**University of Rostock,**  
Faculty of Philosophy,  
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