

Heritage Education and School Dropout: Integrating Self-Perception and Observational Tools (Q-PEPAS and O-PEPAS)

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Abstract: This study examines the relationship between cultural heritage education and the risk of Early School Leaving (ESL), integrating two complementary instruments: Q-PEPAS, which captures students' perceptions, and O-PEPAS, which documents observable classroom behaviors. Based on a non-representative group of secondary school students in Italy, the research compares subjective and observed data across key areas such as motivation, relationships, family and community involvement, cultural identity, and dropout risk. The findings reveal strong convergences in identity, active citizenship, and community participation, where self-reported perceptions align with observed behaviors, thereby confirming the protective role of heritage education. However, significant discrepancies emerge in motivation, relationships, and dropout risk: while many students report high motivation and collaboration, observations indicate lower levels of sustained engagement and early signs of disaffection. These results highlight the limitations of relying solely on self-perceptions and emphasize the importance of triangulating subjective and behavioral data. The study contributes both methodologically—through the validation and integrated use of Q-PEPAS and O-PEPAS—and practically, by providing teachers and policymakers with reliable tools to monitor student engagement and design targeted interventions. Heritage education thus emerges not only as a form of cultural enrichment but also as a strategic factor in fostering belonging, motivation, and resilience against Early School Leaving.

Keywords: Heritage Education, Early School Leaving, Student Engagement, Motivation and Belonging, Q-PEPAS and O-PEPAS.



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1. Introduction

In recent years, the fight against Early School Leaving (ESL) has become a strategic priority at the European and national level. In line with the objectives set by the European Union, the European Strategy for Education and Training 2030 envisages reducing the rate of Early School Leaving to below 9% by the end of the decade (European Commission, 2024).

Also at the national level, the ISTAT (2023) and INVALSI (2023) reports confirm the urgency of adopting structural and innovative measures to achieve this goal. According to the most recent data, the average rate of early school dropout in the European Union is 9.3% (Eurostat, 2024), while in Italy it stands at around 9.8%, with marked territorial differences between North and South (ISTAT, 2023). Alongside the quantitative indicators provided by official statistical sources (Eurostat, ISTAT, INVALSI), educational research is tasked with developing tools to capture cognitive, relational, socio-emotional and cultural factors (personal, cultural, social, etc.) that influence students' motivation and their relationship with the school experience.

In this context, Heritage Education emerges as a lever capable of promoting a sense of belonging, cultural identity and active citizenship, which are the protective factors against Early School Leaving (Stremfel et al., 2024; Hölscher et al., 2024, Guo, 2025). For example, a longitudinal study in Germany showed that school interventions aimed at strengthening "inherited cultural identity" — especially when supported by positive relationships with teachers and peers — foster more stable identity development trajectories, with positive effects on academic performance and psychological well-being (Hölscher et al., 2024).

Further studies confirm that students perceive heritage as important not only for "cultural preservation", but also as a resource for developing identity, a sense of community and emotional well-being (Ballesté et al., 2024). Specifically, the sense of belonging to the school is inversely correlated with absenteeism and dropout, since students who do not perceive themselves as an integral part of the school community are more likely to desert classes or leave the course of study early (Hascher & Hagenauer, 2010; Lee & Burkam, 2003; Ream & Rumberger, 2008).

The perception of school belonging has been identified as a significant predictor of motivation, mental health and resilience, reducing the risk of dropping out of or disconnecting from school (Abdulhamed et al., 2024; Hascher & Hagenauer 2010; Ream and Rumberger 2008), especially for minority or immigrant students.

From this perspective, when school loses its meaning (Arioli, 2025), it becomes essential to strengthen the bond with the reference community, which acts as a preventive strategy against Early School Leaving (Finn, 1989) and fosters greater involvement and commitment to learning. At the same time, several studies highlight that students perceive heritage not only as a factor of belonging, but also as a valuable resource for shaping personal identity, reinforcing the sense of community, and supporting emotional well-being (Ballesté et al., 2024).

The research essentially shows how heritage education activities have a positive impact on students' attitudes towards local culture and how those who appreciate heritage more see their awareness of local identity strengthened, as well as their sense of belonging to the community of reference and collective identity (Pinto, 2015).

This evidence suggests that heritage education not only fosters the development of cultural identity and a sense of belonging but can also be a strategic lever to combat Early School Leaving. In light of this, it becomes essential to systematically investigate the relationships between student perception, observable behaviors in the classroom and risk factors, defining questions and research objectives that guide the present study towards a targeted and applicable empirical analysis.

2. Methodological framework of the research

To answer the issues identified in the literature, the study proposes an integrated methodological approach, aimed at comparing subjective perceptions and

observable behaviors of students, in order to better understand the role of heritage education in the prevention of Early School Leaving.

In light of these premises, it is therefore necessary to formulate the research questions that guided this study. The analysis of the data will then be interpreted in the light of consolidated theoretical models, such as the Self-Determination Theory (Deci & Ryan, 2000) and the engagement vs disaffection model (Skinner et al., 2009), which allow us to better understand the motivational and relational dynamics related to the risk of Early School Leaving.

- What is the relationship between subjective perception of heritage education and observable behaviors at school?
- To what extent do Q-PEPAS and O-PEPAS return convergent or divergent results with respect to motivation, sense of belonging and risk of dropping out?
- Which dimensions (motivation, relationships, active citizenship, family and community involvement) emerge as the most critical in the gap between self-evaluation and observation?
- How can the data collected guide the design of educational interventions to prevent Early School Leaving?

The present study therefore has the following objectives:

1. to analyse the extent to which cultural heritage education activities affect motivation, sense of belonging and the risk of Early School Leaving in secondary school students;
2. to verify the combined effectiveness of two innovative tools — Q-PEPAS and O-PEPAS — in detecting both the subjective perceptions of students and the observable behaviors in the school context;
3. to compare the convergences and discrepancies between what students declare and what they actually manifest in class, identifying areas of latent risk not always recognized by the students themselves;
4. to offer practical guidance for teachers, researchers and policy-makers to develop more targeted and effective educational interventions against Early School Leaving, focusing on cultural heritage.

Starting from the above and from the needs that have emerged over time, the present study aims to combine two tools within an integrated methodological approach: the Q-PEPAS (Questionnaire on Students' Perception of Heritage Education and School Dropout), which collects the subjective perception of students, and the O-PEPAS (Observational Checklist on Heritage Education and School Dropout), which detects the behaviors observable in the school context (participation, relationships, motivation, family and community involvement).

The Q-PEPAS is a tool designed to collect students' subjective perception of the educational value of heritage education experiences and their connection with the risk of Early School Leaving. It investigates how young people interpret the role of cultural heritage in their personal formation, in strengthening their motivation to study and in developing active citizenship skills.

In parallel, O-PEPAS was designed with the aim of observing and recording observable behaviors that occur in educational contexts.

This checklist with marginal notes allows you to monitor aspects such as active participation in activities, the quality of interactions between peers and with teachers, expressions of interest in heritage, the level of collaboration and the involvement of families and communities. Integrating the two methods of collection allows a triangulation of data, where individual perception can be compared with concrete observations, to produce more solid conclusions and practical indications for effective educational interventions against Early School Leaving. Several studies

have in fact highlighted the gap between what students perceive and what they manifest in terms of behavior (Fredricks et al., 2019). For this reason, the tools that detect perceptions — while valuable in giving students a voice — risk returning a partial picture, influenced by social desirability biases or self-reflection difficulties.

This is precisely where the methodological innovation of the present work lies: the joint use of Q-PEPAS and O-PEPAS. The first collects students' subjective perceptions in a structured way, exploring motivation, self-efficacy, a sense of belonging and a relationship with heritage. The second translates the same dimensions into observable behaviors in the classroom, allowing teachers or researchers to monitor concrete indicators such as active participation, collaboration, emotional manifestations and to pick up signs of disaffection. The triangulation of perceptions and observations therefore provides a more comprehensive and reliable picture, enabling us to identify not only the declared weaknesses but also the latent ones that emerge only in everyday teaching practice. The integration between the two tools makes it possible to overcome the limits that each would present if used individually. The questionnaire captures students' perceptions, beliefs, and subjective experiences, while the observational checklist documents observable classroom data, less exposed to perceptual distortions. By triangulating the data and comparing what students say and what they manifest, a more robust, comprehensive and multidimensional view of heritage education impact practices on Early School Leaving risk is achieved.

It is in this way that the data collected through Q-PEPAS and O-PEPAS can not only strengthen the validity of scientific evidence to offer operational tools useful to teachers and researchers to guide the design of more targeted educational interventions, but also, at the same time, to enhance heritage as a training resource and to prevent, or more effectively, the phenomenon of school dropout.

The integration of the two tools makes it possible to obtain an articulated and multilevel reading of the school reality: on the one hand, the voice of the students emerges directly through their perception, which returns impressions, experiences and subjective experiences; on the other hand, there is the external detection of observable indicators, capable of describing the dynamics that characterize the school context in an objective and systematic way. The intersection of these perspectives allows not only to build a more complete vision, capable of enhancing both the different dimensions of the phenomenon analyzed, but also to increase the possibility of grasping latent dimensions, often difficult to detect if considered separately. However, the definition of clear objectives and the adoption of integrated tools such as Q-PEPAS and O-PEPAS make full sense if included in a theoretical and methodological framework that considers the phenomenon of Early School Leaving as multidimensional, influenced by cognitive, relational, emotional and cultural factors.

In the following paragraph, the conceptual bases and methodological perspective that guide the interpretation of the collected data are explored.

3. Features of Detection Instruments: Q-PEPAS and O-PEPAS

The analysis of the factors affecting the risk of Early School Leaving requires a multidimensional approach to be treated. The most recent research underlines, in fact, that the phenomenon cannot be explained only in terms of academic performance but must be understood as the result of the interaction between cognitive, emotional, relational and cultural variables (De Witte et al., 2013). In this sense, the school can be said to be a complex ecosystem in which micro elements (individual experiences, motivation, psychological well-being), meso (relationships with peers, family involvement), and exogenous (socio-cultural context, community

opportunities) act, which intertwine and determine paths of inclusion or dispersion.

Cultural heritage fits into this framework as an educational resource capable of generating processes of belonging and identity, reducing the risk of marginalization (Ballesté et al., 2024). However, to grasp the real effects it is necessary to go beyond the simple detection of attitudes declared by students.

To investigate in depth the relationship between cultural heritage education and the risk of Early School Leaving, the present study therefore adopted two complementary tools: Q-PEPAS and O-PEPAS.

The Q-PEPAS was designed as a questionnaire, organized into eight sections, exploring dimensions such as: direct experiences with heritage, school relationships and climate, motivation, self-efficacy, perception of the risk of dropout, family and community involvement, identity and active citizenship, as well as a space for open feedback and suggestions. The answers are collected using a four-point Likert-type scale, which allows measuring the degree of students' agreement with the proposed statements. The questionnaire also includes some open-ended answers. To detect in a structured and comparable way the perception of students with respect to the role of heritage education, a questionnaire was administered, also developed from a study conducted in 2021 (Nuzzaci & Marcozzi, 2021), consisting of eight sections, which include 55 items, most of which are closed-ended. It contains proposals for statements using a 4-point Likert scale (from 1 = Not at all agree to 4 = Strongly agree), which allow us to detect the degree of agreement or involvement with the topics covered and to encourage a clear stance by students (without a neutral option), alongside some dichotomous questions (yes/no) and open questions for a more qualitative investigation. The questionnaire takes an estimated average time of 15-20 minutes to complete. Overall, the organization into sections (dimensions) allows an analytical reading of the data collected, favoring the identification of correlations between the variables explored. The administration window remained open for two months. The closed-ended questions were organized by sections, while the open-ended questions were collected in a dedicated space to encourage more in-depth reflection. The collected data was exported in Excel format for quantitative and qualitative analysis using statistical software (SPSS) and textual analysis software (NVivo). Closed responses were processed with descriptive statistics of the SPSS package (frequencies, means, standard deviations) and inferential analyses to identify correlations between the perception of heritage education and school motivation.

Open-ended responses were coded with NVivo to extract emerging themes such as "heritage value", "emotional engagement", "school support", "personal motivations" and "perceived obstacles".

Alongside this subjective perspective, the O-PEPAS has been developed as an observational checklist, with the aim of detecting concrete behaviors of students during educational activities, those related to cultural heritage. O-PEPAS is also divided into eight sections corresponding to those of Q-PEPAS, such as to allow a direct comparison with marginal notes. The items cover aspects such as participation in activities, expression of interest, peer collaboration, emotional expressions, signs of disaffection, family and community involvement and forms of active citizenship. The scale adopted measures the frequency of observed behavior (1 = never observed; 4 = always observed). The "Family and Community Involvement" section has been dealt with separately.

Designed mainly for lower and upper secondary schools, but thanks to their modular structure they can also be adapted to primary school.

Teachers can use them to continuously monitor the progress of the class, design targeted and experiential educational activities, and to intercept early signs of disaffection or risk of abandonment. Researchers, on the other hand, collect comparable data on the impact of heritage education practices and produce evidence

useful for the development of educational policies based on empirical data.

In this perspective, the use of Q-PEPAS and O-PEPAS are not only research tools but also provide useful operational devices to support teachers' daily teaching practices.

This methodological triangulation also makes it possible to obtain a more reliable map of risk and protection factors with respect to Early School Leaving and opens new perspectives for educational research, making it possible to analyze the discrepancies between what students declare and what they manifest in the school context.

4. Instrument validation and reliability

The validation process of the instruments was divided into several phases. For the Q-PEPAS, the validity of the content was guaranteed through the contribution of a panel of experts in pedagogy, educational psychology and heritage didactics, who evaluated the relevance and clarity of the items. The Q-PEPAS demonstrated good internal reliability indices (Cronbach α between .75 and .91) and a solid multidimensional structure, confirmed by exploratory and confirmatory factor analyses (RMSEA < .05; CFI and TLI >.90), in line with recommended methodological standards (Hair et al., 2021).

For O-PEPAS, validity was verified through a content validity index (CVI) process, involving teachers and experts who judged the relevance of each observable behavior in relation to the objectives of the tool. The percentage of agreement exceeded the minimum threshold of 75%, indicated as acceptable in the literature (Kipli & Khairani, 2020). The first pilot administrations in school contexts have made it possible to estimate inter-observer reliability, with concordance coefficients (Cohen's κ) greater than .70, suggesting good stability in the detection of behaviors.

The complementarity between the two tools emerges, therefore, also at the level of validation: while Q-PEPAS allows to explore complex psychological constructs related to motivation and a sense of belonging, O-PEPAS provides observable empirical evidence, useful for reducing the risk of self-reporting bias.

This dual perspective increased the robustness of the data collected and offered a more comprehensive interpretative framework for understanding protective and risk factors in relation to Early School Leaving.

5. Comparative results between Q-PEPAS and O-PEPAS

Before presenting the data that emerged from the analysis, it is useful to briefly outline the profile of the group observed, which, in the form of a try-out, involved 81 students attending secondary school, aged between 16 and 19 years (average 17.2). The group was composed of 42 females and 39 males, distributed in the 4th and 5th year classes, with a prevalence of fourth-year students (about 60%) of upper secondary education institutions in central Italy. In this paper we focus only on the comparative results, since we refer to other contributions, the specifications on validation.

The integrated analysis of the data collected through Q-PEPAS and O-PEPAS has made it possible to highlight both areas of convergence and significant discrepancies between the perceptions declared by students and the behaviors observed by teachers and researchers.

As regards heritage education experiences, the majority of students reported in Q-PEPAS that they recognize a strong educational value in activities related to cultural heritage. This perception was also confirmed by observations; In 70% of cases, students showed active participation and self-interested behaviors during

activities, with a positive alignment between stated and observed.

In terms of relationships and the emotional dimension, the students declared a widespread sense of collaboration and belonging to the class group. However, the observations showed some discrepancy: about a quarter of the students who said they were highly cooperative showed isolation behaviors or limited participation in practical activities. This gap suggests the need to distinguish between perceptions of collaborative intention and actual behaviors.

In the dimension of motivation and self-efficacy, the data showed a partial convergence. Many students reported high levels of confidence in their abilities, but O-PEPAS found that only a fraction of them consistently maintained engagement and persistence in their assigned tasks. This indicates that perceived self-efficacy does not always translate into observable engagement, confirming the presence of a potential gap between internal motivation and external behavior.

Regarding the perceived risk of dropping out, self-assessments indicated relatively low levels of intention to leave school. However, the observation has reported in some cases behavioral indicators of disaffection, such as constant inattention or withdrawal from activities. This discrepancy is a critical sign: some students may not recognize or do not want to declare their discomfort, which instead emerges more clearly in the observational context.

Finally, in the dimensions of family and community involvement and identity and active citizenship, there was a good convergence between statements and observations, with students who not only recognized the value of cultural heritage but also demonstrated concrete behaviors of respect for different cultures and responsibility towards the common good.

Overall, the results confirm that the integration between Q-PEPAS and O-PEPAS allows to obtain a more multifaceted and reliable map, able to capture both subjective perceptions and observable signals of risk or protection with respect to Early School Leaving.

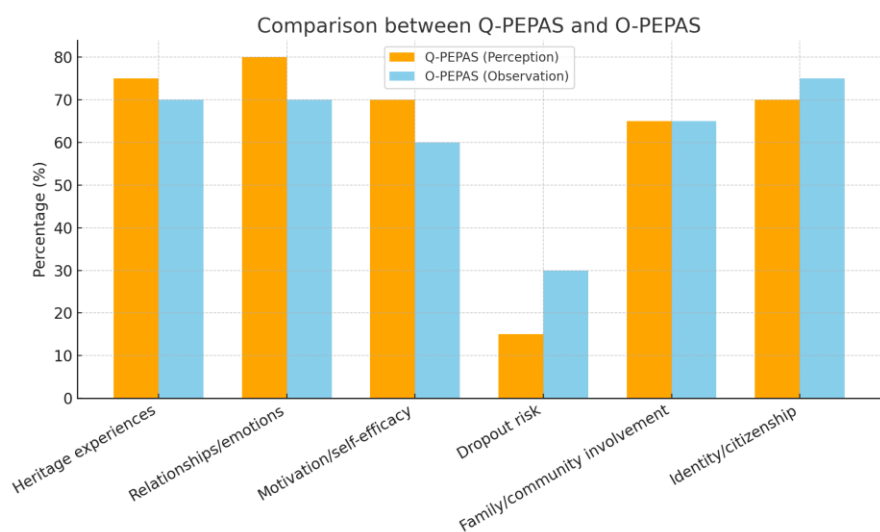
Dimension	Q-PEPAS (Perception)	O-PEPAS (Observation)	Interpretation
Heritage education experiences	75% perceive the usefulness of the activities	70% actively participate	Convergence, but minority not involved
Relationships and the emotional dimension	80% declare collaboration	60% show collaboration (25% isolated)	Discrepancy between perceptions and behaviors
Motivation and self-efficacy	70% say high confidence	50% maintains constant commitment	Gap between perceived self-efficacy and real engagement
Perceived risk of abandonment	15% declare intentions to abandon	30% show signs of disaffection	Self-assessments underestimate risk
Family and community involvement	65% recognize engagement	65% show observable engagement	Good convergence between perception and observation
Identity and active citizenship	70% recognize value for identity	68% show respect and responsibility	Strong declared-observed alignment

The integrated methodological analysis of the data from the two tools, Q-PEPAS and O-PEPAS, highlights an articulated picture made up of significant

convergences and divergences.

The table shows the comparison between the data collected with Q-PEPAS (students' self-perceptions) and O-PEPAS (observed behaviors). Strong convergences also emerge in areas such as identity, active citizenship and family and community involvement, where statements and observations coincide, confirming the effectiveness of heritage education activities as protective factors.

However, the most significant discrepancies are recorded in the dimensions of relationships, motivation and risk of abandonment. While most students report collaboration and confidence in their abilities, observation reveals that a significant portion struggle to maintain behaviors consistent with these perceptions. Even more evident is the gap in the size of risk: if only 15% admit the intention to quit, about 30% show behavioral signs of disaffection.



In the dimension of heritage education experiences, students' perceptions (75% consider the activities useful) are consistent with what is observed in the classroom (70% actively participate). This convergence demonstrates that Heritage Education represents a training experience recognized and lived as meaningful by most students, while remaining a less involved minority that requires targeted educational attention.

Relationships and the emotional dimension, on the other hand, show discrepancies: 80% of students declare collaboration, but only 60% show consistent behaviors, with a quarter tending towards isolation. Here the difference between declared intentions and actual practices is highlighted, which can compromise the sense of belonging to the group.

Similarly, in the dimension of motivation and self-efficacy, a "translation gap" emerges: if 70% declare high confidence in their abilities, only 50% maintain a constant commitment. This suggests that the perception of self-efficacy does not always translate into perseverance behaviors, confirming what has been reported in the literature on the distinction between self-report and observed performance.

The most significant gap concerns the risk of dropping out: just 15% of students admit to thinking about leaving school, but about 30% show behavioral signs of disaffection (inattention, withdrawal, poor involvement). This data confirms that some students struggle to recognize or declare their discomfort, which nevertheless becomes evident through external observation.

More reassuring is the convergence in the dimensions of family and community

involvement and identity and active citizenship. About 65–70% of students declare and demonstrate positive involvement, respect for different cultures and a sense of responsibility towards the common good. In these areas, declared and observed are substantially aligned, reinforcing the idea that heritage functions as a bridge between school, family and territory.

Overall, this comparison highlights the value of the methodological triangulation used, since, if the students' perceptions return to a subjective view of the educational processes, observation allows to identify latent or undeclared signals, regarding motivation, relationships and risk of dropping out. The comparative graph shows these dynamics immediately, highlighting how some dimensions are well aligned, while others require a more in-depth critical analysis.

These results underline the importance of integrating tools that measure different aspects of the same phenomenon. Students' perceptions provide an indispensable interpretative key, but external observation makes it possible to intercept latent or undeclared signals, offering a more accurate diagnosis of the conditions that can lead to Early School Leaving.

6. Data analysis

To investigate the convergences and discrepancies between perceptions (Q-PEPAS) and observations (O-PEPAS), an integrated statistical analysis was conducted.

Correlational analysis

Pearson's correlation coefficients were calculated between the main dimensions detected by the two tools (motivation, relationships, self-efficacy, risk of dropping out, identity/active citizenship).

The results showed:

- a positive and significant correlation between perceptions and observations in the dimensions of identity and active citizenship ($r = .62$, $p < .01$) and family and community involvement ($r = .59$, $p < .01$);
- weaker but still significant correlations for heritage experiences ($r = .41$, $p < .05$);
- absence of significant correlation for motivation and self-efficacy ($r = .18$, n.s.) and class relations ($r = .22$, n.s.), indicating a gap between perception and behavior;
- Critical discrepancy on the risk of dropout, with a negative correlation ($r = -.33$, $p < .05$), confirming that students who declare low risk sometimes show observational behaviors of disaffection.

Discrepancy analysis

By calculating differences between standardized Q-PEPAS and O-PEPAS scores, it emerged that about 25% of the sample had a discrepancy of more than one standard deviation in the areas of relationships and motivation, highlighting students who perceived themselves as collaborative and motivated but did not manifest such behaviors in class.

Comparisons of gender and school year

Student's t tests were carried out for independent groups:

- Gender: female students reported significantly higher scores on the Q-PEPAS for motivation ($M = 3.4$ vs 3.1 ; $t(79) = 2.15$, $p < .05$), while the O-PEPAS observations showed no significant gender differences.
- School year: 5th year students showed lower scores in observed self-efficacy

than their 4th year peers ($M = 2.6$ vs 3.0 ; $t(79) = -2.01$, $p < .05$), suggesting a drop in motivation close to the state exam.

7. Discussion

The integration of the data collected with Q-PEPAS and O-PEPAS has made it possible to highlight not only the areas of convergence between perceptions and observations, but above all the discrepancies that represent the critical nodes of the relationship between heritage education and the risk of Early School Leaving.

The convergences in the dimensions of identity, active citizenship and family and community involvement confirm what has been reported in international literature, namely that heritage education experiences can be a protective factor, strengthening the sense of belonging, intercultural respect and the bond with the community (Ballesté et al., 2024). In these areas, the correspondence between declared and observed testifies to the real effectiveness of the teaching practices adopted and suggests the possibility of extending them as a model in different contexts.

On the contrary, the discrepancies found in the dimensions of relationships, motivation and above all the risk of dropping out, draw attention to the complexity of the phenomenon. These discrepancies can be interpreted in the light of Self-Determination Theory (Deci & Ryan, 2000), according to which students' motivation is articulated along a continuum that goes from amotivation to intrinsic motivation. In many cases, students declare high motivation because they recognize the value of the activity, but they are unable to translate it into behavior if the needs of autonomy, competence and relationship are not met.

Similarly, the engagement vs disaffection model (Skinner et al., 2009) helps to understand how declared commitment can coexist with observable signs of disaffection.

While many students declare themselves to be cooperative and motivated, observation shows that these perceptions do not always translate into behavior. This is particularly evident regarding the risk of dropping out: only a few explicitly admit their intention to leave school, yet a much higher number show concrete signs of disaffection. This data confirms that self-assessment alone are not sufficient to grasp the depth of school distress, which can remain latent or undeclared (De Witte et al., 2013).

The possibility of promptly identifying discrepancies between what students declare and what they manifest in class is in fact a fundamental added value for the prevention of Early School Leaving. Therefore, it is confirmed that the triangulation between subjective perceptions and direct observations offers that multilevel perspective that helps to overcome the typical limits of self-report, allowing a more complete reading of school dynamics. In this sense, Q-PEPAS and O-PEPAS can be considered complementary tools, capable of integrating the analysis of motivational, relational and identity processes with the observation of concrete signals.

On the other hand, the results suggest the need for targeted interventions in two directions:

1. support students who declare motivation but struggle to maintain it in practice, through more experiential teaching strategies;
2. intercept observable signs of disaffection at an early stage, which often do not emerge in the questionnaires, through integrated monitoring and school support systems.

In terms of educational policies, the adoption of integrated tools such as Q-PEPAS and O-PEPAS could provide schools and educational authorities with a more accurate picture of the risk of Early School Leaving, useful for directing

resources and preventive strategies (European Commission, 2023).

In an international perspective, several comparative studies have underlined how the perception of school belonging and teaching practices oriented towards cultural heritage are transversal factors, found in different educational contexts (Reschly, 2020; Guerrero Puerta, 2023). This reinforces the transferability of the Q-PEPAS/O-PEPAS model even in school systems with different socio-cultural characteristics. This approach is part of the European objectives set for 2030, which provide for the reduction of the Early School Leaving rate to below 9% (European Education Area). The use of integrated tools such as Q-PEPAS and O-PEPAS can therefore concretely contribute to the achievement of these goals, providing reliable indicators to support prevention and inclusion strategies.

Despite the positive results, however, it should be emphasized that the study has some methodological limitations. The sample analyzed is limited and not representative of the entire school population; moreover, observation, although based on shared criteria, can be affected by the subjectivity of observers. Finally, the data collected should be replicated in different contexts and on a large territorial scale. It will therefore be necessary to replicate the study in other environments to verify its generalizability.

These aspects suggest caution in interpretation and pave the way for further investigation.

8. Conclusions

The research presented here has made it possible to deepen the relationship between cultural heritage education and the risk of Early School Leaving, integrating two original and complementary tools. The Q-PEPAS, based on students' self-assessment, and the O-PEPAS, which detects observable behaviors in the school context.

This dual perspective represents an innovative approach in the study of the phenomenon, as it allows to compare subjective perceptions and observational data, reducing the risk of interpretative distortions and returning a more complete and reliable view.

The results highlighted how heritage education activities can be protective factors against Early School Leaving, promoting motivation, a sense of belonging, identity and active citizenship. At the same time, the comparison between Q-PEPAS and O-PEPAS revealed significant discrepancies: some students, while reporting high levels of motivation or collaboration, showed disaffection or isolation behaviors in the classroom. These elements underline the importance of combining subjective and observational tools to grasp the complexity of school dynamics.

The study is configured as a pioneering contribution both for the methodology adopted and for the possibility of applying the model to different school contexts. The data collected make it possible to outline trends useful not only for teaching practice and the professional development of teachers, but also for the development of educational policies that are more attentive to the role of cultural heritage in the prevention of Early School Leaving. In addition, the research paves the way for the sharing and enhancement of good practices, suggesting improvements in terms of methodologies, resources and curriculum.

Future development prospects concern the extension of the application of the tools to contexts other than school, such as museums, local authorities and cultural associations, with a view to educating communities. It will also be useful to start international comparative studies to verify the transferability of the model to different educational systems. A further direction of research is represented by the creation of digital versions of Q-PEPAS and O-PEPAS, which facilitate their

administration and data analysis.

Finally, while the focus has been primarily on students, the potential of this approach is broad and can be further developed in future studies that systematically include teachers, families and local communities, to offer an even more integrated view of the impact of heritage education. Looking ahead, research could develop along several directions: the creation of digital versions of Q-PEPAS and O-PEPAS for faster and more accessible administration; the extension of the application of the tools to extracurricular contexts such as museums, cultural institutions and local communities; international comparison to verify the transferability of the model in different educational systems; specific training for teachers and operators, in order to enhance the ability to read and use the data collected. From an operational point of view, the two tools can be integrated into the Plans to combat Early School Leaving at school level, as a support for the continuous monitoring of students and the design of targeted activities. Q-PEPAS allows students to collect their voices, while O-PEPAS allows teachers to detect observable indicators: their combination therefore offers a practical prevention device, useful for schools, local centers and national educational policies.

The results obtained with Q-PEPAS and O-PEPAS offer teachers and researchers the opportunity to transform heritage education into a real device for the prevention of abandonment. For teachers, this means being able to integrate continuous student monitoring with more targeted teaching strategies; for researchers, the possibility of collecting comparable and transferable data in different school contexts.

In addition, the clarity of the scales and dimensions observed allows flexible use of the tools, adaptable to both primary and secondary school, according to specific educational needs.

References

- Abdulhamed, A., Hietajärvi, L., Skogberg, N., Klemetti, R., & Lonka, K. (2024). Sense of belongingness, discrimination, and mental health: Associations and buffering effects of sense of belonging on mental health among Finnish native and immigrant-origin youth. *International Journal of Intercultural Relations*, *103*, <https://doi.org/10.1016/j.ijintrel.2024.102081>.
- Arioli, A. (2025). The silent face of school dropout: When school loses its meaning. *Encyclopaideia*, *29*(71), 13–29. <https://doi.org/10.6092/issn.1825-8670/21396>.
- Ballesté, M., Ares Fernández, Yáñez de Aldecoa, C., Solé-Llussà, A. (2024). Heritage conceptions, perceptions and learning context: research on primary and secondary schools in Andorra. *Journal of Cultural Heritage Management and Sustainable Development*. <https://doi.org/10.1108/JCHMSD-03-2023-0030>.
- De Witte, K., Cabus, S., Thyssen, G., Groot, W., & van den Brink, H. M. (2013). A critical review of the literature on school dropout. *Educational Research Review*, *10*, 13-28. <https://doi.org/10.1016/j.edurev.2022.100512>.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
- Donmez, C., & Yesilbursa, C. C. (2014). The effect of cultural heritage education on students' attitudes toward tangible heritage. *Elementary Education Online*, *13*(2), 425-444.
- European Commission. (2023). *Strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021–2030)*. Luxembourg: Publications Office of the European Union. <https://education.ec.europa.eu/about-eea/strategic-framework>
- Eurostat. (2023). *Early leavers from education and training by sex and labour status*. Luxembourg: European Commission. <https://ec.europa.eu/eurostat>.
- Finn, J. D. (1989). Withdrawing from School. *Review of Educational Research*, *59*(2), 117-142

- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School Engagement: Potential of the Concept, State of the evidence. *Review of Educational Research*, 74(1), 59–109. <https://doi.org/10.3102/00346543074001059>.
- Guerrero Puerta, L. (2023). The European educational policy and Early School Leaving: A conceptual analysis. *Philosophies*, 8(5), 86. <https://doi.org/10.3390/philosophies8050086>.
- Guo, M. (2025). Bichronous modes in heritage education for enhancing motivation. *Heritage Science*, 13(1), 1-14. <https://doi.org/10.1038/s40494-025-01858-w>.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2021). *Multivariate data analysis* (8th ed.). Andover: Cengage Learning.
- Hascher, T., & Hagenauer, G. (2010). Alienation from School. *International Journal of Educational Research*, 49(6), 220–232. doi:10.1016/j.ijer.2011.03.002.
- Hölscher, S. I. E., Schachner, M. K., Juang, L. P., & Altoè, G. (2024). Promoting Adolescents' Heritage Cultural Identity Development: Exploring the Role of Autonomy and Relatedness Satisfaction in School-Based Interventions. *Journal of Youth Adolescence*, 53(11), 2460–2479. <https://doi.org/10.1007/s10964-024-02017-3>.
- INVALSI. (2023). *Rapporto nazionale 2023*. Roma: Istituto Nazionale per la Valutazione del Sistema Educativo di Istruzione e di Formazione.
- ISTAT. (2023). *Rapporto BES 2023 – Benessere equo e sostenibile*. Roma: Istituto Nazionale di Statistica.
- Johnson, R. B., & Onwuegbuzie, A. J. (2021). Mixed methods research: A paradigm whose time has come. *Educational Researcher*, 33(7), 14-26. <https://doi.org/10.3102/0013189X033007014>.
- Kipli, M., & Khairani, A. Z. (2020). Content Validity Index: An Application of Validating CIPP Instrument for Programme Evaluation. *IOER International Multidisciplinary Research Journal*, 2(4), 31–40. <https://www.ioer-imrj.com/wp-content/uploads/2020/11/Content-Validity-Index-An-Application-of-Validating-CIPP-Instrument.pdf>
- Klem, A. M., & Connell, J. P. (2022). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health*, 74(7), 262-273. doi: 10.1111/j.1746-1561.2004.tb08283.x.
- Nuzzaci, A., & I. Marozzi (2021). Dropout, resilience and cultural heritage: a focus of the ACCESS Project in a highly fragile area. In J. Ryser, A. Hopkins & J. MacKee (Eds.). *Historic Cities in the Face of Disasters* (pp. 465-478). London: Springer.
- Palomo, S., & Chagas, M. L. (2022). Sense of school belongingness as a predictor to student academic motivation. *International Journal of Research Studies in Education*, 11(3), 405-426. <https://doi.org/10.5861/ijrse.2022.191>.
- Pinto, H. (2015). Educação patrimonial e educação histórica: contributos para um diálogo interidentitário na construção de significado sobre o passado. *Diálogos*, 19(1), 199-220. doi: <https://doi.org/10.4025/dialogos.v19i1.1049>.
- Reschly, A. L. (2020). Dropout prevention and student engagement. In A. L. Reschly, A. Pohl, & S. L. Christenson (Eds.). *Student Engagement: Effective Academic, Behavioral, Cognitive, and Affective Interventions at School* (pp. 31–54). New York: Springer. https://doi.org/10.1007/978-3-030-37285-9_2.
- Rudolf, M., Jugert, P., & Noack, P. (2024). Heritage cultural identity development in adolescence: The role of teacher–student relationships and peer belonging. *Journal of Youth and Adolescence*, 53(4), 655–671. <https://doi.org/10.1007/s10964-024-02017-3>.
- Skinner, E., Kindermann, T., & Furrer, C. (2009). A motivational perspective on engagement and disaffection: conceptualization and assessment of children's behavioral and emotional participation in academic activities. *Educational and Psychological Measurement*, 69(3), 493–525. <https://doi.org/10.1177/0013164408323233>.
- Štremfel, U., Šterman Ivančič, K., & Peras, I. (2024). Addressing the Sense of School Belonging Among All Students? A Systematic Literature Review. *European Journal of Investigation in Health, Psychology and Education*, 14(11), 2901-2917. doi: 10.3390/ejihpe14110190.
- UNESCO. (2024). *Global education monitoring report 2024: Preventing dropout and ensuring inclusion*. Paris: United Nations Educational, Scientific and Cultural Organization.