BEYOND THE DIGITAL DIVIDE: PARENTS' USE OF ARTIFICIAL INTELLIGENCE IN CONTEXTS OF SOCIAL MARGINALITY

Carmen Lucia Moccia[1]
University of Salerno
cmoccia@unisa.it

Cristina Promentino
University of Salerno
cpromentino@unisa.it

Filomena Izzo
University of Macerata
f.izzo3@unimc.it

Ilaria Viola
University of Salerno
iviola@unisa.it

Fausta Sabatano
University of Salerno
fsabatano@unisa.it

Double Blind Peer Review

Citation
Moccia, C. L., Promentino, C., Izzo, F., Viola, I., & Sabatano, F. (2026). Beyond the digital divide: Parents' use of artificial intelligence in contexts of social marginality. *Italian Journal of Health Education, Sport and Inclusive Didactics*, *10*(4).
https://doi.org/10.32043/gsd.v10i4.1992

Doi: https://doi.org/10.32043/gsd.v10i4.1992

Copyright notice:
© 2026 The Author(s). This is an open access, peer-reviewed article published by Cares S.r.l. – REN Press and distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

renpress.it/index.php/gsdj
ISSN: 3103-5744

ABSTRACT
Artificial intelligence (AI) can widen access to information, services and education, but technology availability alone does not ensure digital equity: inequalities also concern quality of access, skills and the critical use of digital tools, especially in marginalised contexts. This study reports the first exploratory phase of a project to develop and validate a questionnaire on parents' relationship with digital technologies and AI. Based on the literature, it examines access, perceived digital competence, familiarity with AI, perceived risks and opportunities, and willingness to use AI for work, parenting and daily life. It was administered to 79 parents recruited via educational and social organisations in a deprived area of northern Naples. Descriptive, reliability, non-parametric and correlational analyses revealed a selective, context-dependent openness to AI, shaped by prior experience and available resources. Inclusive AI literacy fostering critical thinking is recommended.

KEYWORDS
Artificial intelligence; parenting; digital equity; social marginality.

Received 2026-10-28
Accepted 2026-10-28
Published 2026-10-30

[1] Fausta Sabatano curated the introduction and conclusion; Carmen Lucia Moccia curated the drafting of paragraph 2; Filomena Izzo curated paragraph 3; Cristina Promentino curated the drafting of sections 4.2 Context and participants, 4.3 Construction and description of the research instrument, and 4.4 Administration procedure. Ilaria Viola curated the drafting of sections 4.1 Objective, 4.5 Data analysis, and 5. Results.

1. Introduction

Each technological revolution arrives bearing the promise of wider access to knowledge. The history of education teaches us, however, that no innovation is inclusive in and of itself. Every change introduces new possibilities, but also new forms of exclusion, since the speed at which tools evolve is often greater than the capacity of subjects and contexts to attribute meaning to them. It is precisely in this gap between innovation and the possibility of appropriation that one of the main pedagogical challenges posed today by artificial intelligence is situated.

The abandonment of the positivist paradigm has progressively oriented educational research toward interpretive perspectives capable of recognizing the relational, situated, and intentional nature of experience. Within a phenomenological framework, meaning does not reside in objects but emerges from the encounter between subject and world, through processes of sense-making continuously negotiated within lived experience (Husserl, 1936/2002; Bertolini, 1988, 2001). Marginality thus ceases to be interpreted as a mere deficit condition and comes to be read as a complex configuration in which vulnerability, resources, resilience, and possibilities for transformation coexist within the same educational experience.

This perspective is in dialogue with the ecological and systemic paradigm, according to which educational processes take shape through the dynamic interaction between individual, family, school, community, and socio-cultural context (Bronfenbrenner, 1979; 2005). In this view, further reinforced by complexity thinking (Morin, 1999; 2000), technologies too cease to be neutral tools and become cultural mediators. Their educational value depends on the practices, relationships, and meanings that subjects construct in their use (Dewey, 1916; Vygotsky, 1978; Bruner, 1996).

In this scenario, the concept of the digital divide also requires profound theoretical revision. While the earliest studies focused attention on the divide in access to technologies, more recent reflection shows that the availability of devices represents only the first level of digital inequality. The so-called second-level digital divide instead concerns the quality of technology use, critical competences, interpretive capacities, and the cultural capital necessary to transform digital tools into genuine opportunities for development (Van Dijk, 2005, 2012; Warschauer, 2003). Artificial intelligence today seems to push this reflection further: the new inequality does not concern only the possibility of using a technology, but the capacity to recognize its educational affordances (Gibson, 1979; Aiello & Giaconi, 2024), to attribute meaning to them, and to integrate them into everyday practices of family care and mediation.

The capability perspective and that of cultural capital converge in showing that the opportunities offered by innovation depend not exclusively on the availability of resources, but on the concrete possibility of appropriating them, reinterpreting them, and transforming them into occasions for human development (Sen, 1999; Nussbaum, 2011; Bourdieu, 1986). This reading today finds significant confirmation also in European and national strategies. The Digital Education Action Plan 2021–2027, the UNESCO Recommendation on the Ethics of Artificial Intelligence (2021), the European Union's AI Act, the European Declaration on Digital Rights and Principles (2022), the National Digital School Plan, the PNRR, and the recent guidelines of the Ministry of Education and Merit converge in promoting an anthropocentric, inclusive artificial intelligence oriented toward educational justice.

Moving from these premises, the present study takes artificial intelligence not as the object of investigation, but as a privileged indicator of new possible forms of educational inequality. The hypothesis guiding the research is that the

rapid succession of technological innovations may widen the distance between those who possess the cultural resources necessary to transform AI into an educational opportunity and those who, living in conditions of social and cultural marginality, lack the interpretive tools to recognize its pedagogical value. More than a problem of access, then, what emerges is a question of educational justice: understanding how parents attribute meaning to artificial intelligence, which affordances they are able to grasp, and how such processes affect educational practices represents the contribution that this research intends to offer to the pedagogical debate.

2. Parenthood, Marginality, Resource

Parenthood presents itself as a polysemic concept, capable of assuming different meanings depending on the disciplinary lens through which it is observed. From a pedagogical standpoint, the construct of parental responsibility appears to be one of the most productive points of access to reading the phenomenon, precisely because of the dimension of care that characterizes the constitutive orientation of the parental bond, in its irreducible tension between gift and respect for otherness. Assuming responsibility for caring for the other, and feeling capable of acting in a donative sense, calls into question not only the *what* being answerable for someone -but also the *how* one responds: with what presence, what listening, what meaning one inhabits the parent–child educational relationship. In this perspective, parental responsibility takes shape as a relational tension (Iori, 2018) that is not exhausted in the fulfillment of obligations but is exercised in the everyday (Caronia, Colla, 2024) of family life, moment by moment (Winnicott, 1993).

In its responsive dimension, parenthood takes on a form other than, and further than, the biological one, configuring itself as a social notion and, as such, traversed by multiple reworkings around what a parent must know, must be, and must do.

Concretely, parenthood is realized through caregiving practices that take on different forms (Hansen et al., 2020) and that are not reducible to the satisfaction of basic needs, but invest in the development of children's potential, the quality of the relationship, and orientations toward the world (McCormick, 2018). The pedagogical perspective, in questioning care processes and the relationships that sustain them, is called upon to pay attention to the complex relational fabric that develops within family systems, particularly where these are affected by multi-problem conditions. Care, as a dynamic and multidimensional ecosystemic process (Gaspari, 2023; Caldin, 2022), takes place within a horizon in which implicit dimensions converge (Bruner, 1996; Fabbri, 2008), together with everyday practices, value systems (Zollo, 2018), and relational models that are transmitted and transformed both within the same generation and across different generations. Attending to care processes therefore means adopting a gaze capable of grasping family interconnections, recognizing how caregiving practices are structured within a complex system of meanings, needs, and resources that cannot be reduced to any single one of its components.

Within this framework, parenthood takes shape as competence, and the question arises, across different disciplinary settings, of what it means to be a competent parent.

A competence develops in situ on the basis of the actions carried out by a person, according to internal and external resources that the person learns to mobilize through experience; the action itself constitutes an autonomous,

situated, and contextual form of knowledge (Jonnaert, 2009). Declined in parental terms, competence is articulated across distinct but interconnected levels, involving both the physical and material dimension of caregiving — the ability to recognize and respond to the child's nutritional needs, to structure the child's physical world — and the relational dimension, that of emotionally involving the child in interpersonal exchanges and creating the conditions for the child to interact actively with the surrounding environment.

One is not born a parent, but becomes one (Iori, 2018), and parental competence, in its becoming, can be fragile, partial, or temporarily compromised by biographical, relational, or structural conditions, such that children do not always benefit from an *affective-effective* presence — understood as the simultaneity and inseparability of the affective and effective quality that the educational relationship, intentionally enacted by a microsystem, must possess in order to render that microsystem genuinely proximal (Sabatano, Pagano, 2019, p. 45).

Speaking of parental competence, then, from a pedagogical point of view, refers to the possibilities available for recognizing it, questioning it, and transforming it — that is, the possibility of promoting a comparison between the dimension of doing and of wanting to do, between responding to need and orienting oneself toward something that exceeds it.

Every action, even the most ordinary, tells us something about the person who performs it: it arises from desire, reveals the subject's intentions, their reasons, the direction they want to give to their own existence, and the goal they wish to achieve (Bertagna, p. 261). In the same way, the parent chooses how to respond to the child's needs and desires, with what tone, what presence, what meaning — expressing, even unconsciously, an orientation toward an educational intentionality.

It therefore appears fundamental to examine the themes, values, choices, and educational practices that characterize families (Caronia, 2020). A phenomenologically grounded pedagogy of everyday life (Caronia, 2020; Iori, 1999) offers, in this direction, a perspective capable of making parental practices legible, of restoring epistemic dignity to what happens in the ordinariness of family life, recognizing in it a form of knowledge that deserves to be questioned rather than measured, and fostering awareness of the interpretive "eidos" that characterize specific parental realities. The aim is to promote in the parent the ability to make explicit and arguable the assumptions from which their action proceeds, the criteria that guide their choices, and the reasons that sustain their operational modes, thereby avoiding both emotional improvisation and the rigidity of prescriptivism (Bertolini, 2021). It is in this direction that self-reflexivity and epistemic vigilance (Fabbri, 2008; Caronia, 2011) are configured as conditions of possibility for a conscious educational action, both on the part of the parent and of the professionals who encounter them in pathways of support and promotion of parental competence.

This perspective clashes, however, with a widespread tendency to evaluate parenthood against an expected model presented as universal (Nurturing Care Framework for Early Childhood Development, 2018). In contemporary times, this model takes on the traits of intensive mothering (Hays, 1996, in Ennis, 2014), which has progressively established itself as the implicit yardstick against which all parenting practices are evaluated, regardless of the conditions under which they are exercised. The risk is that even parenting-support interventions, when structured around implicit normative standards, reproduce the very same exclusionary logic that the inclusive pedagogical perspective sets out to overcome. The reference models conveyed by educational institutions - in the expectations directed at families, in formal requests as much as in the most

ordinary routines - often presuppose an available, reflective, culturally equipped parent. Homework (Caronia and Colla, 2024) is revealing in this regard: the family is called upon to mobilize resources of various kinds in order to respond to an institutional request, and does so in profoundly different ways. One parent mobilizes their own disciplinary competence; another relies on an older sibling, a neighbor, the classmates' group; yet another resorts to digital tools. The resource changes, but the function remains the same: responding to an educational need.

In contexts of marginality, this plurality of mediators is not available under the same conditions for all parents: the available resources are unequally distributed, and the structural conditions under which that parenthood is exercised affect, to a variable extent and in variable ways, its quality and accessibility. In such contexts, the element that perhaps most affects the quality of family life is not the scarcity of resources in itself, but emergency experienced as a permanent horizon (Sabatano, 2017) — not as an occasional event, but as an existential condition that tends to systematically occupy every available mental space. When the urgency of the present is structural, that which is not immediately necessary struggles to find a place, because the cognitive and emotional system is already saturated and not all difficulties carry the same weight. While, on the one hand, economic difficulties are visible and recognized by parents themselves, who name them and ask for help, those on the socio-cultural, psychological, and educational level are often invisible in their own eyes, because they coincide with practices and interpretations shared within their own communities of belonging (Sabatano, 2013).

Reflection, emotional processing, and planning - everything that does not carry the character of urgency - tends to be pushed into the background, not as a choice, but as an effect of structural conditions that leave little room for what is not perceived as relevant within a different value and cultural framework.

In contexts of marginality, the support network that in other contexts absorbs part of the educational burden is often fragmented or absent, since the community of reference is itself often affected by the same conditions of structural pressure. Educational solitude takes the form of a difficulty in transforming those bonds into stable resources. The relationship with educational, health, and social institutions is, in most cases, marked by a history of mutual distrust, built up from a sedimentation of experiences in which recognition was lacking - a history that influences both the willingness to seek support and even the ability to make use of it when it is offered.

In adopting an inclusive perspective, it appears of primary importance to carefully examine the plurality of digital, economic, educational, and social mediators that parents, even in conditions of marginality, interpret, adapt, and transform according to their own situated knowledge (Lave and Wenger, 2012) and their own life conditions.

Reflection on the use of artificial intelligence in relation to parenthood in contexts of marginality is particularly interesting precisely because of the promise of accessibility that has accompanied the development of AI (Morris, 2020). Its widespread diffusion and its promise of breaking down barriers to access would make it, at least in intention, a particularly relevant tool precisely in contexts where other resources are scarce. Research has extensively highlighted its educational potential in terms of personalizing learning, supporting communication, and overcoming barriers to participation (Morris, 2020; Salis and Punzo, 2023; Fiorucci, 2024). Less developed is the body of

research examining the relationship between artificial intelligence and contexts of marginality, including in relation to phenomena such as the second-level digital divide (see Introduction), concerning not only access but the quality of technology use, critical competences, interpretive capacities, and the cultural capital necessary for a digital tool to translate into an actual opportunity (Van Dijk, 2005, 2012; Warschauer, 2003).

3. Embracing Affordances: The Use of Artificial Intelligence in Parenting Practices in Contexts of Marginality

Drawing on the relational nature of the construct of affordance, which refers to what an environment or an artifact can offer or allow a subject in relation to their goals (Gibson, 1979; Norman, 1988; Aiello & Giaconi, 2024), it is useful, for the purposes of the reflection proposed so far, to ask which affordances of artificial intelligence are perceived and welcomed by parents living in contexts of marginality and sociocultural disadvantage. Consistently with the phenomenological paradigm (Merleau-Ponty, 2003; Husserl, 1913; Bertolini, 2001), the possibilities for action that such technology makes available to the user would not be intrinsic to the devices themselves, but would instead be generated in the encounter between their material characteristics and the action capacities of those who use them, so that the same application of artificial intelligence could be, at once, enabling and limiting, depending on the conditions of use (Hutchby, 2001, pp. 447-448).

In line with the most recent relevant scientific literature (Klapow et al., 2024), the affordances actually perceived by parents would not appear attributable to a merely instrumental use of devices or to their actual availability or lack thereof, but would seem to be predominantly oriented toward supporting the parenting function: searches for information and educational guidance,

requests for emotional support and reassurance, attempts to alleviate the sense of isolation, and access to advice perceived as close and non-judgmental would thus configure themselves as the recurring purposes behind the use of the most common generative systems.

What has been stated so far is in continuity with the construct of family resilience, understood as the set of processes through which a family unit faces adversity by reorganizing its own potential (Walsh, 2016); this construct thus allows the adoption of AI to be read as a resource that inscribes itself within the coping processes and resilience of the family system in the face of vulnerability.

Some studies (Lee et al., 2025; Navarro, 2026), however, have highlighted the presence of systematic biases in the use of artificial intelligence by marginalized groups, which would consequently prejudice and shape the approach to it.

“For example, an AI-powered application designed to provide parenting advice will only be as effective as the data it's based on. If this data predominantly represents White, middle-class families, the resulting advice may not be suitable or effective for Black or Hispanic parents (not to mention families outside of the US). To ensure the advice is maximally relevant, the training data must cover a diverse array of parenting scenarios and cultural contexts.” (Navarro, 2026, p.4)

If, on the one hand, this reflection brings to light how the very training processes of AI systems may involve limits in terms of inclusion, on the other hand it underscores the need to emphasize that the relationship with such technologies is built in a situated way, through the cultural repertoires, experiences, and resources specific to different social contexts. This is consistent with the construct of funds of knowledge, which designates the

knowledge, skills, and resources historically and culturally accumulated by family units in their daily practices (Moll et al., 1992; González et al., 2005). In this sense, it must therefore be recognized that parents in contexts of marginality would approach artificial intelligence by reinterpreting and recontextualizing the affordances it offers in light of their own repertoires, integrating them into domestic routines and putting them at the service of purposes defined by their own horizon of values and meanings. Such a reading requires the adoption of an ecological (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006) and systemic (Von Bertalanffy, 1968) perspective, which would situate these practices within the intricate web of systems in which the family is immersed, restoring to the parental use of AI the character of a process situated within the domestic microsystem and interwoven with the relevant mesosystems.

The ambivalence of these processes is therefore connected to the unequal distribution of digital skills and to the differentiated quality of access, that is, what studies on the digital divide call the second-level divide (van Dijk, 2020), which would risk converting a potentially emancipatory affordance into a further factor of exclusion, all the more so since generative systems can convey partial or distorted cultural representations precisely with regard to the most marginalized groups (Lee et al., 2025). Indeed,

“If the training data are biased or skewed, the interactions and outputs of the AI will mirror these biases. Such skewed representation can compound existing structural inequities and reinforce assumptions that marginalize families whose experiences, resources, and cultural practices differ from the dominant samples.” (Navarro, 2026, p. 4)

It follows that the inclusive potential of generative technologies is subordinate to the social, cultural, and educational conditions that regulate their access and use. In the absence of adequate digital literacy strategies and constant monitoring of the distortions present in data and algorithms, such tools risk conveying a renewed legitimation of pre-existing forms of exclusion and marginalization.

4. Methodology

4.1 Aim

The present study constitutes the first exploratory phase of a broader research project aimed at developing and subsequently validating a questionnaire designed to investigate parents' relationship with digital technologies and artificial intelligence (AI). The project considers access conditions, perceived digital competence, familiarity with and experience of AI use, perceptions of its opportunities and risks, and willingness to use it in work and financial contexts, parenting, and everyday life.

The overarching research question guiding the project is:

How can parents' relationship with artificial intelligence be characterised, and how is it related to their personal, family, cultural, and economic circumstances?

This phase was conducted as a pre-test of the instrument and focused on the quantitative analysis of responses and the preliminary functioning of the items and hypothesised dimensions. Specifically, it aimed to describe levels of access to technology, perceived digital competence, familiarity with AI, and willingness to use it across the different domains considered; to determine whether these dimensions differed according to previous experience of AI use;

and to examine their associations with participants' socio-demographic, family, cultural, and economic characteristics. The preliminary analysis also considered response distributions, the internal consistency of the sections, and the relationships among dimensions, with the aim of identifying items that might need to be reformulated, supplemented, or subjected to further examination.

The specific question guiding this initial quantitative phase is:

What levels of digital access, competence, familiarity, and willingness to use AI characterise the participating parents, and what differences emerge in relation to their experience of AI use and socio-demographic characteristics?

The questionnaire also includes open-ended questions through which narratives were collected concerning actual or imagined uses of AI, perceived opportunities, doubts, fears, and positive experiences within the family context. These materials constitute the qualitative component of the project but are not examined in the present analysis. In a subsequent phase, the open-ended responses will undergo a specific thematic analysis. Their integration with the quantitative findings will provide a deeper understanding of the meanings parents attribute to AI and enable a more comprehensive interpretation of the patterns identified through the structured items.

The findings from this initial data collection provide only preliminary evidence regarding the functioning and internal consistency of the instrument. The questionnaire will subsequently be refined and administered to a larger and more diverse sample to examine its dimensional structure and psychometric properties. Therefore, the instrument cannot yet be considered validated, and the findings cannot be generalised to the overall population of parents.

4.2 Context and participants

The study was conducted in the northern Naples area and, more specifically, in the municipality of Quarto in the Phlegraean Fields. This area is characterised by high levels of urbanisation, a substantial residential population, and significant social, economic, and territorial challenges. The 2025 edition of the report *La Città Metropolitana di Napoli in cifre* [*The Metropolitan City of Naples in Figures*] (Ufficio Statistica, 2025) depicts a complex area in which demographic pressure, economic inequality, and the limited availability of spaces and resources may contribute to the emergence and reproduction of vulnerability and marginalisation.

The municipality of Quarto has a high population density. As of 1 January 2025, it had 41,536 residents across an area of 14.16 km², corresponding to 2,934 inhabitants per km². In economic terms, in 2023, 32.67% of taxpayers reported an income between EUR 0 and EUR 10,000, while 13.67% reported an income between EUR 10,000 and EUR 15,000; overall, 46.34% had an annual income not exceeding EUR 15,000. Data from the 2011 Italian National Institute of Statistics (Istat) Census also reveal educational and employment-related challenges. Adults aged 25–64 with an upper-secondary school diploma or university degree accounted for 44.9% of the population, while the rate of early leaving from education and training reached 24.8%, compared with 20.6% at the regional level and 15.5% nationally. Only 3.8% of adults participated in lifelong learning. The employment rate was 34%, while the unemployment rate reached 28.5%, compared with 22.7% in Campania and 11.4% in Italy. Youth unemployment stood at 61.1%, and female unemployment at 37.4%. Overall, these indicators describe an area marked by income, educational, and

employment-related vulnerability, which may affect both access to technology and the skills required to use digital tools and artificial intelligence in an informed manner.

The study forms part of the educational initiatives of the *Cittadella dell'Inclusione* [Citadel of Inclusion] (Sabatano, 2022). Established in 2013 in the Phlegraean area, the Cittadella is a permanent educational workshop and an action-research setting serving people experiencing vulnerable circumstances. It encompasses several initiatives united by a shared pedagogical framework oriented towards inclusion, the promotion of autonomy, and the development of emancipatory pathways. Foremost among these is Progetto Integra, which supports children and adolescents from socially marginalised contexts while also involving their families and teachers. Over time, other initiatives have been added: Casa Papa Francesco, which accommodates unaccompanied foreign minors, young migrants, and young people from the criminal justice system; Casa Raul, which hosts young adults with disabilities and seeks to promote their personal, social, and occupational autonomy; and Casa Donna Nuova, which provides accommodation for women who are survivors of violence or trafficking or who come from prison settings, together with their children. These initiatives are complemented by the Centro di Psicologia Clinica, which provides psychological care; the Cooperativa Regina Pacis, which focuses on training and employment opportunities for young people living within the Cittadella; and Progetto Puteoli Sacra, which involves young people from the criminal justice system in enhancing the archaeological heritage of the Rione Terra in Pozzuoli (Sabatano, 2022).

The Cittadella is not merely a collection of services but an environment open to the local community, in which inclusion is promoted through educational, social, vocational, and cultural interventions. The pedagogical perspective

guiding its activities regards individual vulnerabilities not solely as needs requiring a response, but also as potential educational resources for the community as a whole. It therefore places caring relationships, autonomy, and social inclusion at its core (Sabatano, 2022).

The characteristics of the local area and the Cittadella make this setting particularly relevant to the study aims. Northern Naples is not regarded simply as a geographical backdrop, but as a constitutive dimension of individual and family experiences within which opportunities for participation, access to resources, and the development of life projects are shaped (Giaconi, 2015).

This is a context characterised by multiple and intersecting challenges of an economic, social, cultural, environmental, and institutional nature. From an ecological perspective, these challenges cannot be attributed exclusively to individual characteristics or responsibilities; rather, they must be understood by considering the relationships among individuals, families, services, and the local community. Employment and economic circumstances, educational opportunities, the availability of devices and internet connections, support networks, and cultural representations of technology may all influence how families access digital resources and integrate them into their educational practices.

The study involved 79 parents, most of whom were women over the age of 40. Most participants held an upper-secondary school diploma or a university degree, whereas their employment circumstances were more heterogeneous, with a substantial proportion of participants either unemployed or engaged in informal employment.

The demographic, educational, and occupational characteristics of the sample are presented in greater detail in the descriptive data analysis section.

The present study is situated within this territorial, ecological, and family framework. The ways in which parents access artificial intelligence, understand how it works, and integrate it into educational practices are not interpreted exclusively as the result of individual abilities or choices. Instead, they are considered in relation to families' social and employment circumstances, educational opportunities, access to devices and internet connections, support networks, and cultural representations of technology. Describing the context and participants therefore makes it possible to interpret potential differences in the educational use of artificial intelligence as part of broader processes of vulnerability and unequal access to opportunities.

4.3 Development and description of the research instrument

Consistent with the theoretical framework, an ad hoc, predominantly quantitative exploratory questionnaire was developed to investigate how families' socioeconomic and cultural circumstances are associated with access to technology, self-reported digital competence, and parents' ability to recognise and integrate the affordances (Gibson, 1979) of artificial intelligence into everyday caregiving and educational mediation practices.

The instrument was developed through the following process. Based on the study aims and an analysis of the relevant literature, an initial set of items was formulated. These items were subsequently evaluated by an expert panel comprising an associate professor, researchers, and doctoral candidates. Through careful reading and collaborative discussion, the items were assessed in terms of their relevance to the constructs under investigation, clarity of expression, and linguistic appropriateness. At the end of the review process,

the items considered most coherent with and representative of the following dimensions were selected. The dimensions, labelled A–H, were each associated with a specific knowledge objective:

A. Personal, family, and cultural data

This dimension collects the information required to outline participants' socio-demographic, economic, family, and cultural profiles and identify selected indicators of socioeconomic and cultural marginalisation. In particular, it considers age, gender, educational attainment, employment status, perceived financial circumstances, the number and ages of children, and the language predominantly spoken at home.

B. Family digital divide

This dimension examines the material conditions of access to digital technology, considering the stability of the internet connection, the availability of suitable devices, the impact of financial difficulties, and the ability to use the electronic school register and school platforms.

C. Actual and potential use of artificial intelligence

Using a filter question, this dimension distinguishes parents who already use AI tools from those who have never used them. It also makes it possible to explore both actual and potential or imagined uses in relation to personal and family needs.

D. Digital competence, knowledge, and representations of AI

This dimension investigates perceived digital self-efficacy in communicating with schools and supporting children's educational

pathways, knowledge of AI tools, previous experience of use, and representations of artificial intelligence as either a risk or an opportunity.

E. Employment and financial resources

This dimension examines the affordances attributed to AI in employment and financial contexts, with particular reference to seeking employment, drafting CVs and professional messages, identifying potential supplementary sources of income, creating digital content, and managing household savings.

F. Children and family

This dimension explores the educational and parenting affordances recognised in AI, including support with homework, identifying games and activities, simplifying explanations for children, obtaining practical advice, and seeking health- and care-related information.

G. Everyday life

This dimension assesses potential applications of AI in managing administrative, documentary, and household needs, such as understanding bills, healthcare communications, diagnoses, and school and legal documents; completing forms; searching for benefits and financial support; and solving practical problems in family life.

H. Doubts, fears, and positive experiences

Through open-ended questions, this dimension explores parents' concerns regarding the use of digital technology and AI and collects accounts of any positive experiences within the family context. This section enables

meanings, expectations, and lived experiences that cannot be fully captured through structured items to emerge.

The identified dimensions directly reflect the organisation of the questionnaire, which covers personal and family information, conditions of digital access, actual or imagined uses of artificial intelligence, competence and representations associated with the technology, and its potential applications in employment, family, and everyday-life contexts.

The instrument development process began by defining the purpose of the study, the target population, and the theoretical constructs, which were subsequently translated into empirically observable dimensions, indicators, and variables. In particular, socio-demographic data were treated as the main reference variables for analysing differences in access to and use of artificial intelligence. These data were collected through educational attainment, employment status, perceived financial circumstances, household composition, the language predominantly spoken at home, the availability of an internet connection and digital devices, and the presence of any financial barriers to digital access.

The observed variables comprised knowledge of and experience with AI, perceived digital self-efficacy, representations of AI as a risk or opportunity, intentions to use it, and the affordances recognised in employment, financial, administrative, household, and, above all, educational and parenting contexts.

This approach is grounded in a multidimensional conception of digital equity, understood not only as the possibility of accessing technology but also as the affordability of devices and services, possession of adequate digital skills,

accessibility of infrastructure, and availability of content and resources consistent with the needs of different social groups (Gottschalk & Weise, 2023; Vuorikari, Kluzer, & Punie, 2022; EUROPE DIRECT Trieste, 2024).

The instrument follows a logical and progressive sequence. The first section collects personal, family, and cultural variables; the second assesses material access conditions and the use of school platforms; and a filter question distinguishes those who already use AI from those who can only imagine its potential applications.

The subsequent sections explore knowledge, experience, attitudes, and willingness to use AI in job seeking, the management of financial and administrative needs, and educational practices involving children. Most indicators use a five-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. This scale provides a graded representation of perceptions, attitudes, self-efficacy, and intentions to use AI and allows responses to be pre-coded and entered into a data matrix.

Given the heterogeneity of the target population in terms of educational background and familiarity with technology, the items were formulated using simple, concrete, and non-technical language. The questionnaire includes a brief introduction explaining the meaning of AI through everyday examples and clarifying that there are no right or wrong answers, thereby facilitating understanding and encouraging more candid responses.

Alongside the structured questions, open-ended questions were included concerning actual or imagined uses, perceived opportunities, doubts, fears, and positive experiences. This decision is grounded in Mortari's (2007) perspective, according to which educational research should maintain a reflective and receptive stance towards experience and avoid reducing participants' lived

experiences to entirely predetermined categories. Narrative responses therefore make it possible to understand how parents interpret and recontextualise the affordances of AI in light of their cultural repertoires, available resources, and the concrete circumstances of family life (Mortari, 2007; Trinchero, 2002).

The questionnaire is currently in the pre-test phase, which is intended to provide a preliminary assessment of its comprehensibility, linguistic clarity, the relevance of the items to the identified dimensions, and the suitability of the response options.

Administration to a small group of participants makes it possible to identify potential interpretative difficulties, ambiguities, redundancies, or completion-related issues and to collect observations useful for refining the instrument. Based on the findings from this phase, changes may be made to the items and the overall questionnaire structure before administration to the final sample.

4.4 Administration procedure

The study employed an exploratory design and involved a non-probability convenience sample of parents from the northern Naples area, recruited through the Cittadella dell'Inclusione and its affiliated educational and social organisations.

The sampling strategy was consistent with the aim of exploring access to technology and the use of artificial intelligence among families living in contexts characterised by social, economic, and cultural vulnerability.

The questionnaire was developed and administered online using Google Forms. This mode of administration was selected not only for practical reasons related

to data collection and organisation, but also because it provided an initial opportunity to observe potential difficulties in accessing and using digital tools.

Participants completed the form individually on their own devices in the presence of educators who had been appropriately trained to administer the questionnaire. The educators provided technical support only and did not influence the content of participants' responses; they also noted any potential difficulties in understanding specific items.

Requests for assistance were regarded as possible indicators of digital vulnerability, although they did not constitute a direct or sufficient measure of participants' competence. Participation was voluntary. The opening section of the form explained the aims of the study, completion procedures, confidentiality arrangements, and the intended use of the data.

The questionnaire did not require participants to provide their first or last names or any other directly identifying information. Responses to closed-ended questions and Likert-scale items were recorded automatically by the platform.

4.5 Data analysis

Analyses were conducted using IBM SPSS Statistics. During the preliminary phase, the dataset was checked for completeness, coding accuracy, and invalid values. Text responses entered for the number-of-children variable were recoded into the corresponding numerical values. The final dataset comprised 79 participants and contained no missing data for the quantitative variables considered.

Socio-demographic characteristics and other categorical variables were described using absolute frequencies and percentages. The mean, standard deviation, median, and range were calculated for the total number of children and the number of children aged 0–18 years living at home.

The quantitative items used a five-point Likert response scale. Given their ordinal nature, frequencies, percentages, and the median were examined for each item; the mean and standard deviation were used as complementary descriptive indicators. The items were organised according to the thematic sections of the questionnaire.

The internal consistency of each section was assessed using Cronbach's alpha, together with corrected item-total correlations and changes in the coefficient if each item was deleted. Based on theoretical consistency and the reliability analysis results, a composite score was subsequently calculated for each section as the mean of its included items.

The item concerning financial constraints was excluded from the section on access to and use of digital technology because it referred to a contextual barrier rather than a positive condition of access or use. The item concerning the perception of artificial intelligence as a dangerous tool was excluded from the section on digital competence and familiarity with AI because it was considered an independent indicator of risk perception. Both items were retained in the questionnaire and analysed separately.

For the composite scores, the mean, standard deviation, median, interquartile range, and minimum and maximum values were calculated. Score distributions were examined using skewness and kurtosis indices and the Shapiro–Wilk test.

Given the ordinal nature of the original items and the deviations from normality detected for some dimensions, non-parametric procedures were used for the subsequent comparative analyses.

The Mann–Whitney U test was used to compare participants who reported using AI with those who did not in terms of section scores and the two indicators analysed separately. Group descriptive statistics and the rank-biserial correlation as a measure of effect size were also reported. Subsequent analyses of individual items were conducted for exploratory purposes to clarify which indicators contributed most strongly to the differences observed in their respective sections.

Associations between AI use and socio-demographic characteristics were examined using contingency tables, chi-square tests, and exact tests when expected frequencies were low. Cramér's V was used as a measure of the strength of associations.

Finally, Spearman correlations were calculated to examine relationships among the questionnaire dimensions and between these dimensions and ordinal or quantitative socio-demographic variables. A significance level of $p < .05$ was adopted for all analyses, using two-tailed tests. Given the exploratory nature of the study and the number of comparisons performed, the findings—particularly those concerning individual items—were interpreted with caution.

5. Results

The sample comprised 79 parents. Most participants were women (n = 60; 75.9%), while 19 were men (24.1%). The most represented age group was 40–49 years (n = 38; 48.1%), followed by participants aged 50 years or older (n = 29; 36.7%). Eleven parents were aged 30–39 years (13.9%), and only one participant was younger than 30 years (1.3%).

Regarding educational attainment, 35 participants held an upper-secondary school diploma (44.3%), and 32 held a university degree (40.5%). Ten parents had completed lower-secondary education (12.7%), while primary education and the "Other" category were each represented by one participant (1.3%).

Of the participants, 50.6% were employed under a regular contract (*n* = 40), 38.0% were unemployed (*n* = 30), and 11.4% reported working without a formal contract (*n* = 9). The household financial situation was described as stable by 67 participants (84.8%) and difficult by 12 participants (15.2%).

The mean number of children was 1.92 (*SD* = 0.71; *Mdn* = 2; range = 1–4), while the mean number of children aged 0–18 years living at home was 1.37 (*SD* = 0.85; *Mdn* = 2; range = 0–3).

Italian was the language predominantly spoken at home by 72 participants (91.1%). Three parents indicated that they predominantly spoke a dialect (3.8%), while four reported using Italian together with another language (5.1%). Finally, 37 participants reported using artificial intelligence (46.8%), whereas 42 reported that they did not use it (53.2%).

Table 1. Participant characteristics

Variable	Category	n	%
Gender	Female	60	75.9
	Male	19	24.1
Age	Younger than 30 years	1	1.3
	30–39 years	11	13.9
	40–49 years	38	48.1

	50 years or older	29	36.7
Educational attainment	Primary school certificate	1	1.3
	Lower-secondary school certificate	10	12.7
	Upper-secondary school diploma	35	44.3
	University degree	32	40.5
	Other	1	1.3
Employment status	Unemployed	30	38.0
	Employed without a formal contract	9	11.4
	Employed under a regular contract	40	50.6
Household financial situation	Difficult	12	15.2
	Stable	67	84.8
Language spoken at home	Italian	72	91.1
	Dialect	3	3.8
	Italian and another language	4	5.1
AI use	No	42	53.2
	Yes	37	46.8

Note. N = 79. Percentages were calculated based on the total sample.

The internal consistency of the five quantitative sections of the questionnaire was examined using Cronbach's alpha. All 79 participants had valid data for the items included in the analyses.

Section B, concerning access to and use of digital technology, was calculated using three items: stability of the internet connection, availability of digital devices, and ability to use the electronic school register and school platforms. The section showed acceptable internal consistency, $\alpha = .701$. Corrected item-total correlations ranged from .381 to .609.

Section D, concerning digital competence and familiarity with artificial intelligence, comprised three items: ability to communicate digitally with schools, knowledge of AI tools, and previous experience of use. Internal consistency was adequate, $\alpha = .750$, with corrected item-total correlations ranging from .492 to .682.

Section E comprised five potential uses of AI in employment and financial contexts. Cronbach's alpha was .737, indicating overall acceptable internal consistency. Corrected item-total correlations ranged from .190 to .761. The item concerning the creation of videos or social media content had the lowest value, and its deletion would have increased alpha to .784. Nevertheless, the item was retained in the section analysis because of its relevance to the original questionnaire structure; this result should be considered when interpreting the dimension.

Section F, concerning potential uses of AI to support families and children, showed good internal consistency, $\alpha = .789$. Corrected item-total correlations ranged from .337 to .691. The item concerning the search for medical care

showed the weakest association with the total score; its deletion would have produced a limited increase in alpha to .817. Because overall reliability remained adequate, the item was retained in the section.

Section G, concerning the use of AI to access services and manage everyday life, showed the highest internal consistency, α = .849. Corrected item-total correlations ranged from .591 to .760, demonstrating an adequate contribution of all four items to the overall dimension.

Table 2. Reliability of the quantitative sections, ordered according to the questionnaire

Sec	Dimension	Items	α	Std. α	Item-total r
B	Access to and use of digital technology	3	.701	.711	.381–.609
D	Digital competence and familiarity with AI	3	.750	.760	.492–.682
E	Employment- and finance-related uses of AI	5	.737	.722	.190–.761
F	AI and family support	5	.789	.787	.337–.691
G	AI, access to services, and everyday life	4	.849	.851	.591–.760

Note. N = 79. The item concerning financial difficulties in digital access was not included in Section B; the item concerning the perception of AI as a dangerous tool was not included in Section D. These items were considered separately in the descriptive analyses.

Overall, the sections showed reliability levels ranging from acceptable to good. Section G had the highest internal consistency, whereas in Sections E and F, some items concerning more specific uses of AI showed weaker associations

with their respective total scores. Given the exploratory nature of the study, the sample size, and the theoretical construction of the sections, the findings support the use of the corresponding mean scores in subsequent descriptive and comparative analyses.

Following the reliability assessment, a composite score was calculated for each questionnaire section as the mean of the included items. Scores ranged from 1 to 5, with higher values indicating a greater presence of the dimension under consideration. All participants had complete data for the five dimensions analysed (N = 79).

As shown in Table 3, the dimension concerning access to and use of digital technology had the highest mean score (M = 4.33; SD = 0.79; Mdn = 4.67), indicating generally favourable conditions regarding the availability of internet connections and devices and the ability to use school platforms. High scores also emerged for digital competence and familiarity with artificial intelligence (M = 3.94; SD = 1.03; Mdn = 4.00).

Willingness to use AI to access services and manage everyday-life tasks showed a moderately high value (M = 3.33; SD = 1.15; Mdn = 3.75). Scores were lower for potential employment- and finance-related uses of AI (M = 2.88; SD = 0.94; Mdn = 2.80) and its use to support families and children (M = 2.58; SD = 1.00; Mdn = 2.60). Overall, the data suggest that the availability of digital resources and familiarity with AI do not automatically translate into an equally strong willingness to use it in every domain. Openness appears greater for practical applications related to services and everyday life, while attitudes are more cautious in employment and financial contexts and, especially, in relation to family support.

Examination of the distributions using the Shapiro–Wilk test indicated a significant deviation from normality for digital access (W = .813; p < .001), competence and familiarity with AI (W = .885; p < .001), and access to services and everyday life (W = .926; p < .001). By contrast, the distributions for employment- and finance-related uses (W = .972; p = .078) and family support (W = .970; p = .059) did not show statistically significant deviations from normality. Given the ordinal nature of the original items and the non-normality of three of the five dimensions, non-parametric procedures were used in the subsequent comparative analyses.

Table 3. Descriptive statistics for the questionnaire dimensions

Sec	Dimension	N	M	SD	Mdn	Q1–Q3	Min–Max
B	Access to and use of digital technology	79	4.33	0.79	4.67	4.00–5.00	2.00–5.00
D	Digital competence and familiarity with AI	79	3.94	1.03	4.00	3.33–5.00	1.00–5.00
E	Employment- and finance-related uses of AI	79	2.88	0.94	2.80	2.20–3.60	1.00–5.00
F	Use of AI to support families	79	2.58	1.00	2.60	1.80–3.40	1.00–5.00
G	AI, access to services, and everyday life	79	3.33	1.15	3.75	2.50–4.00	1.00–5.00

Note. M = mean; SD = standard deviation; Mdn = median; Q1 = first quartile; Q3 = third quartile. Scores range from 1 to 5.

Item 12b, corresponding to the statement “Financial difficulties limit access to suitable digital tools”, had a mean score of 3.08 (SD = 1.48; Mdn = 3.00). Responses showed substantial dispersion: 36.7% of participants reported a low

level of agreement, 19.0% selected the midpoint, and 44.3% reported a high level of agreement. Thus, although most of the sample generally reported good digital access conditions, financial difficulties appeared to constitute a barrier to the availability of suitable tools for a substantial proportion of parents.

Item 18d, "I consider artificial intelligence to be a dangerous tool", had a mean score of 3.49 (*SD* = 1.01; *Mdn* = 3.00). Of the participants, 48.1% reported a high level of agreement, while 39.2% selected the midpoint. Only 12.7% expressed a low level of agreement. The findings therefore indicate a widespread, although not uniform, perception of risks associated with artificial intelligence. This perception may coexist with recognition of the opportunities offered by AI and should not automatically be interpreted as a general attitude of rejection.

Table 4. Response distributions for the independent indicators

Item	1, n (%)	2, n (%)	3, n (%)	4, n (%)	5, n (%)	M	SD	Mdn
12b – Financial difficulties limit digital access	18 (22.8)	11 (13.9)	15 (19.0)	17 (21.5)	18 (22.8)	3.08	1.48	3
18d – I consider AI to be a dangerous tool	3 (3.8)	7 (8.9)	31 (39.2)	24 (30.4)	14 (17.7)	3.49	1.01	3

Note. N = 79. Scores range from 1 to 5. Higher values for Item 12b indicate a stronger perception of financial constraints; higher values for Item 18d indicate a stronger perception of AI as dangerous.

The Mann–Whitney U test showed no statistically significant differences in Section B, concerning access to and use of digital technology, $U = 686.00$, $p = .358$.

For Section D, concerning digital competence and familiarity with AI, users reported a higher overall score than non-users, $U = 357.00$, $p < .001$, $r = .54$.

This comparison is reported for descriptive purposes only and is not interpreted as an independent test because the section score includes Item 17, which concerns previous experience of AI use and therefore partially overlaps with the grouping variable. Exploratory analyses of the two indicators that did not coincide with the group definition showed statistically significant differences for Item 15, concerning perceived competence in digital communication with schools (p = .037), and Item 16, concerning knowledge of AI tools (p = .010). Users therefore also reported greater familiarity with these aspects, although the exploratory nature of the comparisons warrants caution.

Statistically significant differences also emerged in Section E, concerning employment- and finance-related uses. Users obtained higher scores (M = 3.18; SD = 0.72) than non-users (M = 2.61; SD = 1.03), U = 525.50, p = .013, r = .32. At the item level, differences concerned Item 22e, relating to the use of AI to write CVs or work-related messages (p = .039), and Item 23e, relating to the search for ideas to increase income (p = .004).

The most notable result concerned Section F, relating to the use of AI to support families. Users reported significantly higher scores (M = 2.90; SD = 0.83) than non-users (M = 2.30; SD = 1.05), U = 480.00, p = .003, r = .38. Differences involved Item 27f, concerning the search for games or activities for children (p = .005); Item 28f, concerning support in explaining content (p = .012); and Item 29f, concerning the search for practical advice for children (p = .030). By contrast, no significant difference emerged for Item 30f, concerning the search for medical care (p = .252), suggesting greater caution towards uses involving greater responsibility.

No statistically significant differences emerged in Section G, concerning access to services and the management of everyday life, U = 645.00, p = .194, or for Item 18d, concerning the perception of AI as a dangerous tool, U = 887.50, p =

.256. However, a significant difference was found for Item 12b, concerning financial constraints on digital access: non-users reported higher scores (M = 3.40; SD = 1.50) than users (M = 2.70; SD = 1.39), U = 993.50, p = .030, r = −.28.

The most notable finding concerned Section F: participants who already used AI showed a greater willingness to use it to identify games or activities for their children, receive support in explaining content, and obtain practical advice. However, this difference did not extend to seeking medical care. Openness to AI therefore appears to be limited to practical parenting-support activities and does not extend to healthcare decisions, which are presumably perceived as more sensitive.

A further finding concerned Item 12b: non-users reported greater financial constraints in accessing digital tools, highlighting a possible association between material access conditions and experience of AI use. Given the cross-sectional and exploratory nature of the study, these relationships cannot be interpreted causally.

The association between participants' socio-demographic characteristics and AI use was examined using contingency tables and exact tests because of low expected frequencies in some cells. Of the variables considered, only employment status was significantly associated with AI use (Fisher's exact test statistic = 6.037; p = .047; Cramér's V = .281). The proportion of users was higher among participants employed under a regular contract (60.0%) than among those who were unemployed (36.7%) or worked without a formal contract (22.2%).

This finding suggests a small-to-moderate association between employment status and experience of AI use. Employment stability may provide more opportunities to access and become familiar with these tools; however, the cross-sectional nature of the study does not allow the direction of the relationship to be established.

No statistically significant associations emerged between AI use and age (exact $p = .100$), gender (exact $p = 1.000$), educational attainment (exact $p = .178$), perceived household financial circumstances (exact $p = .361$), number of children (exact $p = .055$), stability of the internet connection (exact $p = .810$), or availability of digital devices (exact $p = .089$). Given the exploratory nature of the analyses and the number of comparisons performed, the observed association with employment status should nevertheless be interpreted with caution.

Spearman correlation analyses were subsequently conducted between the questionnaire dimensions and selected socio-demographic characteristics. Digital competence and familiarity, as measured by Section D, were positively associated with employment- and finance-related uses of AI ($\rho = .461$; $p < .001$), its use to support families ($\rho = .344$; $p = .002$), and its use to access services and manage everyday life ($\rho = .345$; $p = .002$).

The strongest association emerged between the use of AI to support families and its use to access services and manage everyday activities ($\rho = .701$; $p < .001$). This finding suggests that willingness to use AI is not limited to individual applications but reflects a broader orientation towards its use as a practical support resource. Positive associations also emerged between employment- and finance-related uses and uses related to family support ($\rho = .543$; $p < .001$) and the management of services and everyday life ($\rho = .673$; $p < .001$).

Regarding socio-demographic characteristics, educational attainment was positively associated with digital access (ρ = .268; p = .017) and competence and familiarity with AI (ρ = .316; p = .005). By contrast, the total number of children (ρ = −.237; p = .035) and the number of minor children living at home (ρ = −.251; p = .025) were negatively associated with digital access. These latter relationships were weak and therefore require cautious interpretation. Given the correlational and cross-sectional nature of the study, the findings do not permit conclusions regarding the causal direction of the observed associations.

6. Discussion and Conclusions

The findings depict a context characterised by generally high levels of access to digital technologies and a good degree of familiarity with digital tools and artificial intelligence (AI). However, this does not automatically translate into a uniform willingness to use AI across the various domains examined. Scores were higher for applications related to accessing services and managing everyday life, whereas they were lower for work- and income-related uses and, particularly, for supporting family life. The adoption of AI therefore appears to depend not only on the availability of technology, but also on the purpose attributed to the tool and the level of responsibility involved in its use.

The most noteworthy finding concerns support for parenting activities. Participants who had previously used AI reported a significantly greater willingness to use it in this domain than those who had never used it (U = 480.00; p = 0.003; r = 0.38). More specifically, differences emerged in relation to searching for games and activities for children (p = 0.005), obtaining support in explaining difficult concepts (p = 0.012), and seeking practical advice on child-rearing (p = 0.030). By contrast, no significant difference was found in the intention to use AI to search for medical treatments (p = 0.252). Previous

experience therefore appears to encourage primarily those uses perceived as practical and circumscribed, without automatically extending to more sensitive domains. This finding is consistent with a human-centred approach to AI, according to which these tools should support human capabilities without replacing individual judgement and responsibility, particularly in sensitive decision-making contexts (Miao & Holmes, 2023).

In the work and economic domain, AI users also demonstrated significantly greater willingness to use these technologies ($U = 525.50$; $p = 0.013$; $r = 0.32$), particularly for preparing a CV or drafting work-related messages ($p = 0.039$) and for identifying ideas aimed at generating additional income ($p = 0.004$). These findings suggest that direct experience with AI may be associated with a greater ability to recognise its practical applications. However, given the cross-sectional nature of the study, no causal relationship can be established.

The correlations between the dimensions confirm the presence of a broader orientation towards the practical uses of AI. In particular, willingness to use AI to support family life was strongly associated with its use for accessing services and managing everyday activities ($\rho = 0.701$; $p < 0.001$). Significant associations were also found between work- and income-related uses and family-related uses ($\rho = 0.543$; $p < 0.001$), as well as between work- and income-related uses and the management of everyday life ($\rho = 0.673$; $p < 0.001$). Interest in AI therefore does not appear to be limited to a single function; rather, it reflects a broader disposition to regard AI as a tool for practical support.

A further issue concerns inequalities in access. Participants who had never used AI reported greater financial constraints in accessing adequate digital tools than AI users ($U = 993.50$; $p = 0.030$; $r = -0.28$). Moreover, previous experience of using AI was associated with employment status ($p = 0.047$; Cramér's $V = 0.281$), with a higher proportion of users among individuals holding a formal

employment contract. Although these findings should be interpreted with caution, they indicate that the ability to benefit from AI may also depend on the economic and social resources available to individuals. From this perspective, digital inequality concerns not only material access to technology, but also the ability to transform such access into genuine opportunities (Helsper, 2012).

Perceptions of AI as a potentially dangerous tool did not differ significantly between users and non-users ($p = 0.256$). Experience of using AI therefore does not appear to eliminate awareness of its potential risks. Familiarity and a critical attitude may coexist: parents may recognise the usefulness of AI in addressing specific everyday needs while simultaneously remaining cautious about its application in more sensitive areas.

Overall, the findings reveal a selective and context-dependent openness towards artificial intelligence. The most significant aspect is not a generally greater acceptance of AI among those who have already used it, but rather their greater willingness to employ it for specific, low-risk parenting tasks, without a corresponding increase in the intention to rely on it for medical decisions. These findings highlight the need to promote AI literacy initiatives for parents that integrate practical skills, the critical evaluation of AI-generated responses, privacy protection, and a clear definition of the domains in which human and professional judgement must remain central.

The findings should be considered in light of several limitations, including the small and unevenly distributed sample, the use of self-reported measures, the cross-sectional design, and the exploratory nature of the analyses conducted on individual items. Consequently, the findings cannot be generalised to the wider population of parents, nor can causal relationships be established. Future

research will involve larger and more diverse samples and will explore, including through qualitative interviews, the motivations underlying parents' decisions to use or not to use AI across different areas of family life.

The present study therefore calls for reflection that extends beyond the descriptive interpretation of the data and points towards an essentially pedagogical issue. Artificial intelligence appears to contribute to redefining the contexts in which educational experience takes shape, transforming not only the tools available but also the ways in which individuals interpret reality, construct meaning, and orient their actions. From this perspective, inclusion cannot be understood exclusively in terms of the availability of technologies or technical proficiency in their use. Rather, it concerns each individual's ability to recognise and critically engage with the opportunities that these technologies make available within their own lived experience.

The findings suggest that the affordances of artificial intelligence do not emerge uniformly but assume different forms depending on the biographical, cultural, and social circumstances in which parents exercise their educational responsibilities. This leads to an understanding of marginality not simply as an absence of resources, but as a complex condition that affects individuals' ability to attribute meaning to innovation, recognise its educational potential, and transform it into opportunities for growth. What emerges, therefore, is not merely a disparity in access to technological tools, but a gap in the possibilities for the cultural appropriation of innovation—a gap that directly raises the issue of educational justice.

From this perspective, artificial intelligence can be regarded neither as a solution to educational vulnerabilities nor, conversely, as a threat from which individuals must be protected. Rather, it represents a cultural phenomenon that requires pedagogical examination, based on the awareness that the

educational value of any technology does not lie in its intrinsic characteristics, but in the quality of the relationships, mediation processes, and interpretative practices through which it is incorporated into human experience. Pedagogical reflection should therefore be directed towards a critical understanding of the transformations currently under way, while supporting families, schools, and communities in establishing the conditions required for technologies to become genuine opportunities for participation, empowerment, and human development.

Accordingly, the present study was not intended to provide definitive answers, but rather to open up a space for enquiry into the relationship between technological innovation, marginality, and educational responsibility. If artificial intelligence is currently redefining forms of cultural and social participation, it becomes necessary to examine the conditions that enable individuals not only to access it, but also to understand it, interpret it critically, and integrate it into an educational project that continues to place the person, relationships, and the construction of shared meanings at its centre. From this perspective, artificial intelligence represents, first and foremost, not merely a technological challenge, but a profoundly pedagogical one.

References

Aiello, P., Giaconi, C., (2024), L'agire inclusivo. Interfacce pedagogiche e didattiche. Manuale per l'insegnante, Brescia: Scholé

Bertagna, G. (2010). *Dall'educazione alla pedagogia: avvio al lessico pedagogico e alla teoria dell'educazione*. La Scuola.

Bertolini, P. (1988). L'esistere pedagogico. Ragioni e limiti di una pedagogia come scienza fenomenologicamente fondata. La Nuova Italia.

Bertolini, P. (2001). Pedagogia fenomenologica. Genesi, sviluppo, orizzonti. La Nuova Italia.

Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), Handbook of Theory and Research for the Sociology of Education (pp. 241–258). Greenwood Press.

Bronfenbrenner, U. (1979). The Ecology of Human Development: Experiments by Nature and Design. Harvard University Press.

Bronfenbrenner, U. (2005). Making Human Beings Human: Bioecological Perspectives on Human Development. Sage.

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (6th ed., pp. 793–828). Wiley.

Bruner, J. (1996). The Culture of Education. Harvard University Press.

Caronia, L. (2020). Pedagogia della vita quotidiana. Ovvero: come costruiamo i mondi a cui apparteniamo. In V. Iori (a cura di), *Aver cura dell'esistenza. Studi in onore di Vanna Iori* (pp. 53–62). FrancoAngeli.

Caronia, L., & Colla, V. (2024). *I compiti a casa: linguaggio e apprendimento. Quando la scuola entra in famiglia*. Raffaello Cortina Editore.

Città Metropolitana di Napoli, Ufficio Statistica. (2025). *La Città Metropolitana di Napoli in cifre. Edizione 2025*.

Colla, V. (2024). Fare i compiti a casa con i genitori: riflessioni per la prassi educativa e didattica degli insegnanti. *Annali online della Didattica e della Formazione Docente*, *16*(28), 44–62.

Dewey, J. (1916). Democracy and Education. Macmillan.

Ennis, L. R. (Ed.). (2014). *Intensive mothering: The cultural contradictions of modern motherhood*. Demeter Press.

EUROPE DIRECT Trieste. (2024, 28 agosto). *Cos'è il Piano d'azione per l'educazione digitale?* https://europedirect.comune.trieste.it/cose-il-piano-dazione-per-leducazione-digitale/

European Commission. (2021). Digital Education Action Plan 2021–2027: Resetting Education and Training for the Digital Age.

European Commission. (2022). European Declaration on Digital Rights and Principles for the Digital Decade.

European Union. (2024). Regulation (EU) 2024/1689 of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act).

Giaconi, C., Del Bianco, N., D'Angelo, I., & Borsini, L. (2025). Il Progetto di Vita nella cornice della Qualità di Vita: Riflessioni critiche e prospettive di ricerca. *Education Sciences & Society, 16*(2), 33–47.

Gibson, J. J. (1979). The Ecological Approach to Visual Perception. Houghton Mifflin.

González, N., Moll, L. C., & Amanti, C. (Eds.). (2005). *Funds of knowledge: Theorizing practices in households, communities, and classrooms*. Lawrence Erlbaum Associates.

Gottschalk, F., & Weise, C. (2023). Digital equity and inclusion in education: An overview of practice and policy in OECD countries. *OECD Education Working Papers* (No. 299). OECD Publishing. https://doi.org/10.1787/7cb15030-en

Helsper, E. J. (2012). A corresponding fields model for the links between social and digital exclusion. *Communication Theory, 22*(4), 403–426

Hutchby, I. (2001). Technologies, texts and affordances. *Sociology, 35*(2), 441–456. https://doi.org/10.1177/S0038038501000219

Husserl, E. (2002). *Idee per una fenomenologia pura e per una filosofia fenomenologica* (E. Filippini, Trad.). Einaudi. (Opera originale pubblicata nel 1913)

Iori, V. (2009). Genitorialità e servizi sociali: l'Osservatorio Famiglie e il Centro per le famiglie di Reggio Emilia. *Rivista Italiana di Educazione Familiare*, *1*(1), 49–63. https://doi.org/10.13128/RIEF-3028

Iori, V. (2018). *Disposizioni per la formazione alla genitorialità e per il sostegno alla responsabilità educativa dei genitori* (D.d.L. N. 207, XVIII Legislatura). Senato della Repubblica.

Jonnaert, P. (2009). *Compétences et socioconstructivisme: un cadre théorique* (2a ed.). De Boeck.

Klapow, M. C., Rosenblatt, A., Lachman, J., & Gardner, F. (2024). The feasibility and acceptability of using a digital conversational agent (chatbot) for delivering parenting interventions: Systematic review. *JMIR Pediatrics and Parenting, 7*, e55726. https://doi.org/10.2196/55726

Lee, J. Y., Ahn, E., Xu, A., Yang, Y., Chang, Y., Cha, H., & Ammari, T. (2025). Artificial intelligence in applied family research involving families with young children: A scoping review. *Family Relations, 74*(3), 1121–1145. https://doi.org/10.1111/fare.13090

McCormick, K. I. (2018). Mosaic of care: Preschool children's caring expressions and enactments. *Journal of Early Childhood Research*, *16*(4), 378–392. https://doi.org/10.1177/1476718X18809388

Merleau-Ponty, M. (2003). *Fenomenologia della percezione* (A. Bonomi, Trad.). Bompiani. (Opera originale pubblicata nel 1945)

Miao, F., & Holmes, W. (2023). *Guidance for generative AI in education and research*. UNESCO. https://www.unesco.org/en/articles/guidance-generative-ai-education-and-research

Moll, L. C., Amanti, C., Neff, D., & González, N. (1992). Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms. *Theory Into Practice, 31*(2), 132–141.

Morin, E. (1999). Les sept savoirs nécessaires à l'éducation du futur. UNESCO.

Morin, E. (2000). La testa ben fatta. Riforma dell'insegnamento e riforma del pensiero. Raffaello Cortina.

Mortari, L. (2007). *Cultura della ricerca e pedagogia: Prospettive epistemologiche*. Carocci.

Navarro, J.L., (2026, Integrating artificial intelligence into neo-ecological theory, Current Psychology, 45:505.

Norman, D. A. (1988). *The design of everyday things*. Basic Books.

Nurturing Care for Early Childhood Development Writing Group. (2018). *Nurturing care for early childhood development: A framework for helping children survive and thrive to transform health and human potential*. World Health Organization.

Nussbaum, M. C. (2011). Creating Capabilities: The Human Development Approach. Harvard University Press.

OECD. (2019). OECD Principles on Artificial Intelligence.

Raihan, M. M. H., Subroto, S., Chowdhury, N., Koch, K., Ruttan, E., & Turin, T. C. (2025). *Dimensions and barriers for digital (in)equity and digital divide: A systematic integrative review*. Digital Transformation and Society, 4(2), 111–127. DOI: 10.1108/DTS-04-2024-0054

Sabatano, F. (2013). Me l'ha detto mia madre. Il sostegno ai genitori difficili nelle dinamiche di cambiamento. *La famiglia*, Annuario 2013, 116–131.

Sabatano, F. (2017). Pensarsi genitori: formazione riflessiva e approccio narrativo in contesti multiproblematici. *Consultori Familiari Oggi*, *25*(1), 125–140.

Sabatano, F. (2022). Educating in Multiproblem Contexts: the Pedagogical Project of the Citadel Of Inclusion. *ITALIAN JOURNAL OF HEALTH EDUCATION, SPORT AND INCLUSIVE DIDACTICS*, *6*(1).

Sen, A. (1999). Development as Freedom. Oxford University Press.

Trinchero, R. (2002). *Manuale di ricerca educativa*. FrancoAngeli.

UNESCO. (2021). Recommendation on the Ethics of Artificial Intelligence.

Van Dijk, J. A. G. M. (2005). The Deepening Divide: Inequality in the Information Society. Sage.

Van Dijk, J. A. G. M. (2012). The Network Society (3rd ed.). Sage.

Van Dijk, J. (2020). *The digital divide*. Polity Press

Vygotsky, L. S. (1978). Mind in Society: The Development of Higher Psychological Processes. Harvard University Press.

Von Bertalanffy, L., (1968), *General System Theory: Foundations, Development, Applications,* George Braziller, New York.

Vuorikari, R., Kluzer, S., & Punie, Y. (2022). *DigComp 2.2: Il quadro delle competenze digitali per i cittadini*. Traduzione coordinata dal Dipartimento per la trasformazione digitale della Presidenza del Consiglio dei ministri. https://repubblicadigitale.gov.it/portale/documents/20122/1011125/DigComp%2B2.2%2BItaliano.pdf/b4809226-106d-38ec-4e80-3cb761816fe2

Walsh, F. (2016). *Strengthening family resilience* (3rd ed.). Guilford Press.

Warschauer, M. (2003). Technology and Social Inclusion: Rethinking the Digital Divide. MIT Press.

Zollo, I. (2019). *Il valore dell'inclusione: riflettere ed agire*.FrancoAngeli.