E-TUTORING AND FLIPPED INCLUSION: AN INTERVENTION PROTOCOL FOR PROMOTING SOFT SKILLS AND SOCIO-EMOTIONAL INCLUSION IN UNIVERSITY VIRTUAL LEARNING ENVIRONMENTS

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ABSTRACT

This study investigates the relationship between e-tutoring strategies, soft skills promotion, and the Flipped Inclusion model (Corona & De Giuseppe, 2020) in university Virtual Learning Environments. In the pre-test administered to the experimental group, 43 out of 90 students—representing 47.8%—identified the lack of personal interaction as the main drawback of the online learning experience. An Intervention Protocol for the university e-tutor was designed across four phases (Explore–Ideate–Design–Experiment), integrating AI as a supportive co-agent — not a substitute — for personalized, inclusive learning. Preliminary findings suggest the protocol effectively reduces perceived distance in online contexts, fostering socio-emotional skills, prosociality, and learner autonomy in students, including those with Special Educational Needs.

KEYWORDS

E-tutoring, flipped inclusion, soft skills.

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1. Introduction

The rapid digital transformation of higher education has generated profound changes in contemporary educational ecosystems (Floridi, 2022), reshaping not only teaching methodologies but also the relational dynamics that underpin learning processes. The expansion of Virtual Learning Environments (VLEs), accelerated by technological innovation and the growing diffusion of online and blended learning models, has intensified the need for pedagogical approaches capable of simultaneously supporting the cognitive, relational, and socio-emotional dimensions of learning (Lucangeli, 2019).

Within contemporary infospheric contexts (Floridi, 2017; Paparella & Tarantino, 2023), educational institutions are increasingly expected to foster digital and transmedia competencies that enable students to navigate critically through technology-mediated environments characterised by algorithmic systems, hyperconnectivity, and increasing informational complexity (Jenkins et al., 2009). Although online learning environments offer substantial opportunities in terms of accessibility, flexibility, and personalisation, several studies have highlighted the persistence of relational fragility, emotional disengagement, and social isolation among university students involved in digitally mediated learning experiences (Moore, 1993; Dettori & Letteri, 2025; Berardinetti, Rossi, & Toto, 2025).

Against this background, the pedagogical role of e-tutoring has acquired increasing strategic relevance. Contemporary e-tutoring practices can no longer be reduced to merely technical or organisational support functions. Rather, the e-tutor increasingly acts as a relational mediator who facilitates interaction, sustains student motivation, promotes collaborative participation, and supports learner autonomy within online educational communities (Biasin, 2018; Rotta & Ranieri, 2005; Crispiani & Rossi, 2006).

E-tutoring is particularly effective when embedded in inclusive pedagogical frameworks grounded in socio-constructivist theories (Vygotskij, 1978) and relational educational models. Among these, the Flipped Inclusion model proposed by Corona and De Giuseppe (2020) conceptualises inclusion as a systemic and existential process encompassing both organisational and relational dimensions. The framework combines top-down inclusive

educational design with bottom-up pedagogical mediation strategies aimed at fostering student agency, collaborative participation, prosociality, and socio-emotional well-being (Corona & De Giuseppe, 2016).

Against this theoretical background, the present study examines the relationship among e-tutoring practices, soft-skills development (Cinque, 2016), and socio-emotional inclusion within university VLEs. More specifically, it proposes and discusses an intervention protocol for university e-tutors designed to reduce perceived relational distance and foster inclusive educational experiences through AI-supported processes of mediation, participation, and personalisation. This perspective integrates educators' digital competence, online engagement, and the centrality of the educational relationship (Redecker, 2017; Martin, Sun, & Westine, 2020; De Giuseppe & Tornusciolo, 2024).

2 Theoretical framework

2.1. The digital transformation of higher education and emerging challenges for inclusion

Over the past two decades, higher education has undergone a profound transformation driven by the progressive integration of digital technologies into teaching and learning processes. The diffusion of e-learning platforms, Learning Management Systems, and Virtual Learning Environments has radically changed how students and lecturers access, share, and construct knowledge (Trentin, 2004; Salmon, 2011).

This evolution was further accelerated by the COVID-19 pandemic, which required higher education institutions to rapidly reconfigure educational activities into fully online or blended formats (Di Palma & Belfiore, 2020). Although this transition ensured educational continuity and expanded opportunities for access to higher education, it also exposed critical issues concerning the quality of educational relationships, student participation, and the development of a sense of belonging to the academic community (Moore, 1993; Phirangee, Epp, & Hewitt, 2016).

A substantial body of research has shown that the mere availability of technological tools is insufficient to ensure meaningful learning. Digital environments may instead generate isolation, fragmented relationships,

reduced spontaneous interaction, and lower emotional engagement (Broadbent & Poon, 2015; Garrison & Cleveland-Innes, 2005; Halverson & Graham, 2019). In particular, limited direct contact with lecturers and peers may hinder the development of essential transversal competencies, including collaboration, effective communication, conflict management, and teamwork (Cimatti, 2016; Robles, 2012).

In this respect, the Universal Design for Learning (UDL) framework constitutes a particularly relevant theoretical reference (CAST, 2018; Meyer, Rose, & Gordon, 2014), as it regards individual variability not as an exception but as an ordinary condition of educational contexts. This perspective requires the proactive design of flexible learning environments capable of offering multiple means of engagement, representation, and expression, thereby promoting accessibility and participation for all students.

Within this scenario, inclusion assumes strategic importance. It cannot be understood solely as technological accessibility or the provision of compensatory tools; rather, it should be conceived as the capacity of the entire educational ecosystem to ensure participation, recognition, and appreciation of difference (Arduini, 2022; Canevaro, 2006). Virtual environments therefore require pedagogical models capable of integrating cognitive, relational, and emotional dimensions while promoting authentic forms of engagement and participation (Caprino, Demo, Sgambelluri, & Tironi, 2022). The central challenge is to transform digital spaces from mere technological containers into genuinely inclusive educational environments (Dovigo, 2008; Di Pietrantonio & Sandri, 2023), in which every student can feel welcomed, recognised, and supported throughout the learning process.

From this perspective, the current configuration of the infosphere requires the development of advanced transmedia literacies that enable students to navigate critically through increasingly complex and algorithmically mediated information ecosystems (Jenkins, Purushotma, Weigel, Clinton, & Robison, 2009), in which the production, circulation, and validation of knowledge are continuously reshaped by technological innovation.

2.2 E-tutoring and educational mediation in Virtual Learning Environments

Within this perspective, the role of the e-tutor has become increasingly central. From a historical and cultural standpoint, the tutorial function is

rooted in the Latin verb tueri (Castiglioni & Mariotti, 2014), which evokes the meanings of protecting, supervising, supporting, and caring. This dimension of pedagogical care, already present in the earliest medieval universities (Rosso, 2021), has gradually evolved from a primarily organisational support function into an educational practice aimed at promoting autonomy, self-regulation, and academic success (Da Re, 2018; Selleri, 2007). The evolution of tutoring practices therefore reflects a shift from a predominantly administrative and organisational conception to a pedagogical perspective oriented towards facilitating learning processes.

Traditionally, the tutor was regarded as a support figure responsible for providing technical information, monitoring activities, and assisting students in managing the organisational aspects of their learning pathway (Arbizu, Lobato, & del Castillo, 2005). The development of learning theories and the consolidation of socio-constructivist perspectives have progressively expanded this function, assigning the tutor the role of educational mediator and relational facilitator (Biasin, 2018; Rogoff, 1990).

From a Vygotskian perspective, learning develops through social interaction and shared participation (Vygotskij, 1978). Knowledge construction is not an isolated individual process, but the outcome of collaborative activities through which individuals attribute shared meanings to their experiences. Within this theoretical framework, the tutor performs a scaffolding function by gradually supporting the development of learner autonomy (Wood, Bruner, & Ross, 1976; Stone, 1998). This function becomes even more significant in online contexts, where physical distance among educational actors requires intentional intervention (Moore, 1993) to foster meaningful relationships and counteract disengagement and isolation. The e-tutor therefore acts as a communication facilitator, a promoter of participation, and a mediator of collaborative processes (Rotta & Ranieri, 2005; Salmon, 2011; Vanin & Castelli, 2009). Through continuous feedback, guidance, and personalised support, the e-tutor contributes to the development of an inclusive climate and strengthens learners' sense of belonging to the learning community (Hattie & Timperley, 2007; Richardson et al., 2015).

The literature indicates that the presence of structured tutoring roles is associated with higher levels of satisfaction, motivation, and persistence in study, while contributing significantly to lower dropout rates and improved academic performance (Topping, 1996; Youde, 2020).

2.3 The Flipped Inclusion model as a framework for inclusive design

Among the pedagogical models most explicitly oriented towards promoting inclusion in digital educational contexts, the Flipped Inclusion model developed by Corona and De Giuseppe is particularly relevant (Corona & De Giuseppe, 2020; De Giuseppe, 2018).

The model was developed to move beyond a traditional conception of inclusion based on compensatory interventions directed exclusively at students experiencing difficulties. It instead advances a systemic and participatory perspective capable of involving the entire educational community (De Giuseppe & Corona, 2020).

Flipped Inclusion conceptualises inclusion as a dynamic process requiring the transformation of the educational environment through the active participation of all stakeholders. Attention consequently shifts from individual deficit to the quality of relationships and the opportunities afforded by the context (De Giuseppe, 2018).

The approach integrates a top-down dimension, concerning the organisational and structural design of learning environments, with a bottom-up dimension grounded in educational relationships, collaborative participation, and student agency (Corona & De Giuseppe, 2020).

From this perspective, inclusion is understood as the capacity to create conditions that enable the meaningful participation of all individuals, enhance their potential, and promote self-determination (De Giuseppe, 2018).

A particularly significant feature is the processual structure of the model, which is organised into four recursive phases: Explore, Ideate, Design, and Experiment (Corona & De Giuseppe, 2020; De Giuseppe, 2018). These phases progressively guide students towards increasingly mature forms of participation, autonomy, and responsibility.

2.4 Soft skills, collaborative participation, and socio-emotional inclusion

The increasing complexity of social and professional contexts has generated growing interest in soft skills, which are now regarded as an essential component of higher education programmes (Cinque, 2016; Robles, 2012).

Transversal competencies encompass a broad set of cognitive, relational, and emotional abilities (Cimatti, 2016) that enable individuals to address complex situations effectively and collaborate constructively with others.

The most widely valued competencies include effective communication, teamwork, active listening, collaborative leadership, conflict management, problem-solving, and adaptability (Robles, 2012). In online contexts, the development of these competencies requires the intentional design of learning activities (Garrison & Cleveland-Innes, 2005; Salmon, 2011). The spontaneous interactions typical of face-to-face environments tend to diminish, making it necessary to adopt pedagogical strategies that promote dialogue, cooperation, and shared reflection. Within this domain, prosociality is particularly relevant and may be understood as the set of voluntary behaviours directed towards the well-being of others (Caprara & Bonino, 2006; De Beni, 1998) and the pursuit of socially shared goals. The development of prosocial behaviours, including active listening, mutual support, cooperation, and solidarity, strengthens the sense of belonging to the learning community and constitutes an essential prerequisite for socio-emotional inclusion in digital settings (Caprara & Steca, 2007; Roche, 2002).

Socio-emotional inclusion is a complementary dimension closely connected to the development of soft skills. It concerns the possibility for every student to feel recognised, heard, and valued within the educational community.

When students perceive a positive relational climate and experience authentic forms of participation, their sense of belonging, motivation, and willingness to assume an active role in learning processes increase (Halverson & Graham, 2019). Consistent with the warm cognition paradigm (Lucangeli, 2019), learning in VLEs is more effective when supported by positive emotional experiences, such as encouragement, mutual recognition, and the development of a meaningful educational relationship. In this respect, the e-tutor plays a crucial role in promoting empathic attunement and in anticipating signs of academic disengagement, which are frequently accompanied by relational isolation (De Giuseppe & Tornusciolo, 2024; De Giuseppe, Tornusciolo, Quiroz Reyes, & Petruccelli, 2025).

Overall, the role of the e-tutor and the application of the Flipped Inclusion model converge in promoting educational environments characterised by meaningful relationships, collaborative participation, and the integrated

development of personal and social competencies (Florian & Black-Hawkins, 2011; Corona & De Giuseppe, 2020).

3 Research design and experimental architecture

3.1 Sampling and ecological context

Sample selection and demographic characteristics

The empirical study was conducted over three academic years, from 2022/2023 to 2024/2025, at the Università Telematica Giustino Fortunato in Benevento, Italy. A non-probability sampling strategy based on convenience and relevance to the study objectives involved a total of 180 students (N = 180) enrolled in the L-19 and LM-57 degree programmes considered in the research (Creswell & Plano Clark, 2017). Participants were evenly allocated to an experimental group (n = 90) and a control group (n = 90).

The student population was characterised by substantial demographic and experiential heterogeneity, as is typical of Italian online universities, where a large proportion of students are employed adults or individuals engaged in professional retraining (adult learners) (Youde, 2020). The demographic characteristics of the initial sample are reported in Table 1.

Table 1. Demographic characteristics of the sample

Demographic Variable	Experimental Group (n = 90)	Control Group (n = 90)	Total Sample (N = 180)
Male	28	26	54
Female	61	62	123

Prefer not to answer	1	2	3
Age Group			
18–25 years	22	20	42
26–35 years	35	38	73
36–45 years	23	21	44
Over 45 years	10	11	21
Degree Programme			
LM-57: Education Sciences	48	46	94
L-19: Education and Training Sciences	42	44	86

3.2 The EIPS intervention Protocol

The four operational phases of Flipped Inclusion for E-tutors

The Inclusive E-tutor Intervention Protocol was developed on the basis of the four recursive phases of the Flipped Inclusion model (De Giuseppe, 2018; De Giuseppe & Corona, 2020): Explore, Ideate, Design, and Experiment (EIPS). Each phase was operationalised through specific micro-processes designed to guide the tutor's pedagogical action towards the enhancement of soft skills and the development of a cooperative climate. Artificial Intelligence is integrated as a co-agent supporting personalisation and accessibility, in accordance with frameworks on educators' digital competence and instructional adaptivity (Redecker, 2017; Plass & Pawar, 2020), without replacing the educational relationship or the e-tutor's decision-making responsibility (De Giuseppe & Tornusciolo, 2024).

Phase 1: Explore (Inquiry E-tutoring)—Diagnosis and Attunement. The e-tutor initiates proactive maieutic contact to assess learners' digital competencies and learning styles, identify physical, cognitive, or cultural barriers in accordance with UDL principles, and acknowledge individual expectations (Rotta & Ranieri, 2005; Richardson, Koehler, Besser, Caskurlu, Lim, & Mueller, 2015).

Phase 2: Ideate (Discovery E-tutoring)—Dialogic Facilitation. The tutor structures asynchronous discussion forums around prompting questions and complex dilemmas (problem-setting), promoting peer exchange and shared netiquette while discouraging hasty responses and cognitive heuristics (Salmon, 2011; Vanin & Castelli, 2009).

Phase 3: Design (Mastery E-tutoring)—Negotiation and Autonomy. The tutor and student negotiate an individual learning contract based on measurable goals (Rotta & Ranieri, 2005). The tutor curates resources and supports the use of intelligent chatbots for low-stakes tasks (Plass & Pawar, 2020), while promoting deep-learning strategies such as spaced repetition and active retrieval (Roediger & Karpicke, 2006).

Phase 4: Experiment (Experiential E-tutoring)—Cooperation and Writing. Students collaborate in small heterogeneous groups and rotate roles to foster positive interdependence (Strijbos & Martens, 2001). The e-tutor provides dynamic and progressively reduced scaffolding (fading) (Wood, Bruner, & Ross, 1976; Stone, 1998) and promotes in-depth reflection through the use of a digital reflective journal.

Table 2. Micro-processes of the EIPS intervention Protocol

Operational Phase	E-tutor Action	Student Action	AI Support Role
Phase 1: Explore	Inquiry E-Tutoring: proactive maieutic contact, UDL-informed profiling, and initial diagnosis.	Sharing expectations and completing digital self-assessment activities.	Generating personalised accessibility options and adaptive diagnostic assessments.
Phase 2: Ideate	Discovery E-Tutoring: designing cognitive prompts and establishing group rules.	Participating in forum discussions, practising active listening, and inhibiting heuristic responses.	Supporting the early identification of students experiencing stress.
Phase 3: Design	Mastery E-Tutoring: negotiating	Monitoring individual goals	Recommending personalised study

	SMART learning contracts and curating UDL resources.	and applying active retrieval and spaced repetition.	schedules and providing automated retrieval-practice quizzes.
Phase 4: Experiment	Experiential E-Tutoring: structuring cooperative roles, applying dynamic fading, and using narrative journals.	Engaging in collaborative writing and maintaining a digital reflective journal.	Transcribing oral audio entries and conducting semantic analysis of journal metadata.

3.3 Assessment rubrics (E–J)

Simplex assessment devices for continuous monitoring

The scientific validation of the protocol and the monitoring of student and e-tutor progress rely on a system of six complementary assessment rubrics (Rubrics E to J). These are conceived not as decontextualised summative indicators, but as simplex formative-assessment devices consistent with an assessment-as-learning perspective (Sibilio, 2014, 2017). Each rubric comprises four discrete mastery levels, ranging from Level IV, corresponding to 4 points, to Level I, corresponding to 1 point. More specifically, 4 points are assigned to Level IV, 3 points to Level III, 2 points to Level II, and 1 point to Level I; higher scores indicate greater mastery of the observed competency (De Giuseppe, 2018). The overall score for each rubric was calculated as the mean of the scores assigned to its indicators.

The dimensions assessed by each rubric are as follows:

Rubric E assesses Inquiry E-tutoring competencies (Phase 1: Explore), including maieutic listening, the identification of special educational needs, and the e-tutor's proactive sensitivity (De Giuseppe, 2018; Rotta & Ranieri, 2005).

Rubric F assesses Discovery E-tutoring competencies (Phase 2: Ideate), focusing on the facilitation of asynchronous discussions (Salmon, 2011), the use of cognitive questioning techniques (Garrison & Cleveland-Innes, 2005), and the ability to prevent exclusionary group dynamics (Strijbos & Martens, 2001; Phirangee, Epp, & Hewitt, 2016).

Rubric G assesses Mastery E-tutoring competencies (Phase 3: Design), including the ability to negotiate personalised learning contracts (Prain et al., 2013; Walkington & Bernacki, 2020) and recommend study strategies informed by executive functions, such as spaced repetition and interleaving (Roediger & Karpicke, 2006).

Rubric H assesses Experiential E-tutoring competencies (Phase 4: Experiment), including the effectiveness of cooperative scaffolding (Wood, Bruner, & Ross, 1976), the management of roles in small groups (Strijbos & Martens, 2001), and the activation of reflective writing (Dewey, 1981).

Rubric I assesses learners' development of soft and social skills, including empathic communication, responsibility-taking, self-regulation, and fulfilment of commitments (Cimatti, 2016; Cinque, 2016; Robles, 2012; Zimmerman, 2002).

Rubric J assesses the overall quality and ecological-systemic impact (Bronfenbrenner, 1979) of the Flipped Inclusion model on the organisation of the VLE and learners' emotional well-being (De Giuseppe & Corona, 2020).

These rubrics are intended to transform assessment into a continuous maieutic resource by providing timely and emotionally supportive feedback that stimulates learner self-correction and the tutor's professional refinement (Hattie & Timperley, 2007; Lucangeli, 2019).

3.4 The role of artificial intelligence in the EIPS Protocol

Artificial Intelligence is a complementary component of the protocol rather than its core (Floridi, 2022; Di Tore, 2023). The proposed model is grounded in the assumption that the quality of educational relationships remains the primary determinant of success in online learning processes (Moore, 1993; Garrison & Cleveland-Innes, 2005; Richardson et al., 2015). AI is therefore conceptualised as a supportive co-agent capable of enhancing accessibility, facilitating personalisation, and assisting with the organisation of learning activities (De Giuseppe & Tornusciolo, 2024; Dettori & Letteri, 2025). It can contribute to the generation of adaptive materials (Plass & Pawar, 2020), the automation of repetitive tasks, the production of preliminary feedback, and the identification of potential critical situations (De Giuseppe & Tornusciolo, 2024; Dettori & Letteri, 2025). Nevertheless, educational guidance, motivational support, relational mediation, and socio-emotional inclusion remain distinctly human responsibilities (Rotta & Ranieri, 2005; Salmon, 2011). The e-tutor therefore continues to serve as the central reference point throughout the educational process (De Giuseppe, 2018). From this perspective, technology does not replace the educational relationship but extends its possibilities (Halverson & Graham, 2019), allowing greater personalisation without compromising the centrality of the person. The EIPS protocol thus constitutes a balanced model for integrating technological innovation and educational mediation, combining personalisation, inclusion, and the development of transversal competencies in university VLEs (De Giuseppe, 2018; De Giuseppe & Corona, 2020; Corona & De Giuseppe, 2020; De Giuseppe, Tornusciolo, Quiroz Reyes, & Petruccelli, 2025).

4 Results

4.1 Preliminary analysis of perceived needs and critical issues

The preliminary phase of the study explored students' perceptions of the quality of their learning experience within university VLEs.

The pre-test questionnaire indicated that the most frequently perceived critical issue was the lack of personal interaction. Overall, 47.8% of students identified the limited availability of meaningful relationships with lecturers and peers as the principal limitation of online learning.

This finding is particularly relevant because it confirms evidence from several international studies on distance education: the availability of technological

tools does not automatically ensure the development of effective learning communities (Moore, 1993; Kollock, 1999; Garrison & Cleveland-Innes, 2005; Stahl, Koschmann, & Suthers, 2006). Open-ended responses also revealed feelings of isolation, limited participation in collaborative activities, and difficulty in developing a genuine sense of belonging to the academic community (Hunt & Eisenberg, 2010; Broadbent & Poon, 2015). Several students reported feeling like passive users of digital content rather than active members of a shared educational process (Richardson et al., 2015). A particularly salient need concerned stronger relational presence, expressed through requests for personalised feedback, opportunities for dialogue, and structured collaboration (Hattie & Timperley, 2007; Vanin & Castelli, 2009). These findings provided the basis for the design of the EIPS protocol.

4.2 Development of collaborative self-efficacy

One of the main indicators used to assess the effectiveness of the intervention was perceived collaborative self-efficacy (Bandura, 1997).

At the initial stage of the study, only 35.2% of students in the experimental group reported feeling fully capable of collaborating effectively with peers in virtual contexts.

Following the implementation of the protocol (De Giuseppe, Tornusciolo, Quiroz Reyes, & Petruccelli, 2025), the percentage of students falling into the highest levels of collaborative self-efficacy rose to at least 77.5%. Specifically, after the protocol was applied, 77.5% of students in the control group reported being able to manage conflicts constructively, while 88.8% expressed an inclination toward effective collaboration. Statistical analysis thus confirmed the significance of this improvement.

This result suggests that the e-tutor intervention made a substantial contribution to the development of more effective collaborative dynamics, facilitating a transition from predominantly individual participation to forms of participation characterised by greater interaction and shared responsibility.

The improvement in collaborative self-efficacy is particularly important because it represents a key precondition for the development of transversal competencies and the construction of inclusive learning communities.

4.3 Development of soft skills

The analysis of transversal competencies revealed significant improvements across all dimensions considered (Cinque, 2016).

The results indicate substantial gains in students' ability to assume responsibility within working groups, manage shared tasks, and participate in collaborative activities.

A particularly notable improvement was observed in the appreciation of diversity, with the proportion of students reaching the highest levels of the assessment scale increasing from 35.2% to 91.4%.

A comparable pattern emerged in the ability to assume roles and responsibilities within groups, which increased from 38.0% to 91.4%.

Contribution to shared goals also increased markedly, from 39.5% to 91.3%.

Further noteworthy findings concerned active listening, prosociality, and the ability to accept constructive feedback.

The proportion of students demonstrating high levels of active listening increased from 45.1% to 88.8%, while prosocial behaviours increased from 40.2% to 88.8% (Caprara & Steca, 2005).

Acceptance of feedback increased from 48.0% to 87.5%, indicating greater willingness to use interpersonal exchange as an opportunity for personal and professional development (Hattie & Timperley, 2007).

Finally, conflict management showed one of the largest improvements, increasing from 30.1% to 77.5%.

Taken together, these findings suggest that the EIPS protocol contributed substantially to the development of the social and relational competencies required for effective participation in contemporary university and professional contexts.

4.4 Qualitative evidence: students' perceptions of the e-tutor's role

The qualitative analysis of reflective journals and open-ended responses provided deeper insight into the mechanisms through which the protocol influenced students' experiences (Mortari & Ghirotto, 2019).

The thematic analysis identified three principal interpretive themes.

The first concerned the e-tutor's role as a relational facilitator (Rotta & Ranieri, 2005; Biasin, 2018). Students described the tutor as a figure capable of reducing perceived distance and fostering meaningful relationships within the virtual environmentA student's testimony is telling in this regard: "The e-tutor helps maintain high motivation and a steady study pace, and helps clarify doubts; they are very empathetic—an empathy that comes through even in online interactions. I would describe them as the backbone of support in distance learning."

Numerous accounts indicated that the support received helped transform the online experience from an individual and isolated activity into a shared and participatory pathway (Vanin & Castelli, 2009; Phirangee, Epp, & Hewitt, 2016; Vegliante & Sannicandro, 2020).

The second theme concerned the recognition of error as an opportunity for learning (Hattie & Timperley, 2007).

Students reported a progressive reduction in their fear of making mistakes and a greater willingness to participate actively in discussions and collaborative activities (Zimmerman, 2002; Trinchero, 2018).

The third interpretive theme concerned the relationship between Artificial Intelligence and educational mediation (De Giuseppe & Tornusciolo, 2024; De Giuseppe, Tornusciolo, Quiroz Reyes, & Petruccelli, 2025). Students reported positive perceptions of digital support tools and recognised their usefulness for personalising and organising study activities.

At the same time, the accounts clearly indicated that these tools cannot replace the educational presence of the e-tutor, which was regarded as essential for motivational support, emotional guidance, and the construction of a sense of belonging (Dettori & Letteri, 2025; Floridi, 2022; Di Tore, 2023).

5 Discussion

The findings support several relevant considerations regarding the role of e-tutoring in digital higher education contexts.

First, the data confirm that the principal challenges affecting VLEs are not exclusively technological but are closely related to the quality of the educational relationships established within them (Garrison & Cleveland-Innes, 2005; Richardson, Koehler, Besser, Caskurlu, Lim, & Mueller, 2015).

The high proportion of students who reported a lack of personal interaction indicates that the primary challenge of online learning concerns the relational rather than the technical dimension (Preece, 1999; Kollock, 1999).

Second, the findings indicate that the Flipped Inclusion model can provide an effective theoretical framework for designing inclusion-oriented interventions (De Giuseppe, 2018; De Giuseppe & Corona, 2020).

The four phases of the EIPS protocol made it possible to structure a progressive pathway that supported the emergence of collaborative dynamics, the development of meaningful relationships, and the strengthening of socio-emotional competencies (Roche, 2002; Goleman, 2015).

Particularly relevant improvements were observed in the dimensions related to the appreciation of diversity, active listening, and conflict management (Caprara & Bonino, 2006; Grazzani Gavazzi & Riva Crugnola, 2010).

These findings suggest that inclusion should not be understood exclusively as a matter of accessibility, but as a process that directly engages the quality of relationships and student participation (Canevaro, 2006; Dovigo, 2008; McLeskey, Rosenberg, & Westling, 2013).

Finally, the study highlights the need to maintain a human-centred perspective when integrating Artificial Intelligence into educational contexts (Floridi, 2022; Di Tore, 2023).

AI can support the personalisation of learning pathways and improve organisational efficiency; however, it cannot replace the relational, motivational, and inclusive functions performed by the e-tutor (De Giuseppe & Tornusciolo, 2024; Dettori & Letteri, 2025).

The findings therefore confirm that technological innovation produces meaningful educational effects only when embedded within person-centred pedagogical design (Rivoltella & Rossi, 2019).

6 Limitations and future directions

Critical Issues and multi-centre monitoring

Despite the scientific relevance and methodological rigour of the study, several methodological and technological limitations require careful consideration:

First, the adoption of non-probability convenience sampling within a single online university limits the immediate generalisability of the findings to traditional or face-to-face higher education settings (Campbell & Stanley, 1963; Shadish, Cook, & Campbell, 2002).

Second, the exclusive use of self-report instruments exposes the quantitative data to potential social-desirability bias, particularly in scales assessing collaborative and prosocial competencies.

Third, student satisfaction with the degree of personalisation provided by the intervention was 53.3%. Although positive, this value was substantially lower than the other indicators of success. This discrepancy suggests that the protocol requires greater flexibility and that e-tutors need more advanced specialist training in neurodiversity, developmental disabilities, and the personalised adaptation of learning tasks (World Health Organization, 2001; Sandri & Marcarini, 2019; Mogoș, Buțiu, & Onac, 2025).

Fourth, some users experienced difficulties related to the technical accessibility and usability of the VLE interface. This finding confirms that removing digital barriers requires continuous technological monitoring consistent with universal-accessibility principles (Calvani, Fini, & Ranieri, 2010; Caprino, Demo, Sgambelluri, & Tironi, 2022).

To address these limitations, the Permanent Observatory for Systemic Inclusivity has initiated a large-scale, multi-centre monitoring phase that is currently under way. The intervention protocol and standardised self-assessment questionnaire are being administered and tested at additional Italian online universities, specifically Universitas Mercatorum in Rome and IUL University in Florence.

This expansion of the sample will make it possible to establish new comparative baselines and assess the effectiveness of the Flipped Inclusion model across heterogeneous organisational, cultural, and technological ecosystems, thereby reducing sources of systematic error and strengthening the generalisability of the findings (Shadish, Cook, & Campbell, 2002). Future research will also explore the integration of immersive technologies, including virtual and augmented reality, and advanced learning-analytics algorithms to monitor learners' emotional states, cognitive load, and prefrontal fatigue, enabling the e-tutor to adapt maieutic scaffolding in real time (Plass & Pawar, 2020; Halverson & Graham, 2019).

7. Conclusions and practical implications

The evidence emerging from the study suggests several important operational implications for universities, instructional designers, and e-tutors.

First, higher education institutions should formally recognise the strategic role of e-tutors in online learning programmes (Chianese, 2018; Da Re, 2018).

E-tutoring should not be regarded as an ancillary service, but as a structural component of digital learning processes (Rotta & Ranieri, 2005; Biasin, 2018).

Second, the findings support the adoption of structured intervention protocols, such as the EIPS model, to ensure consistency, quality, and continuity in tutoring practices.

Shared procedures can improve the effectiveness of guidance activities and facilitate the dissemination of inclusive practices (Arbizu, Lobato, & del Castillo, 2005; Álvarez & González, 2010).

Third, investment in e-tutor training is required, with particular emphasis on relational competencies, the management of online groups, the facilitation of collaborative processes (Salmon, 2011; Vanin & Castelli, 2009), and the pedagogically responsible use of Artificial Intelligence (De Giuseppe & Tornusciolo, 2024; Dettori & Letteri, 2025).

Finally, the findings underscore the importance of designing VLEs not merely as technological spaces, but as educational ecosystems oriented towards participation, collaboration, and students' socio-emotional well-being (Amicone, Petruccelli, & Bonaiuto, 2017; Stahl, Koschmann, & Suthers, 2006).

From this perspective, the EIPS protocol constitutes a replicable operational tool that can support universities in developing more inclusive, participatory, and sustainable learning experiences.

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