

ARTIFICIAL INTELLIGENCE AND INCLUSIVE E-TUTORING, BETWEEN SOFT SKILLS AND NEW RESEARCH PERSPECTIVES

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Abstract: Artificial Intelligence and algorithm technologies are permeating many aspects of daily life, generatively impacting people and social contexts. The goal that the new times demand is to redefine the lines of research in relation to AI, to understand how the field of education compares and interrelates to Artificial Intelligence, what the points of connection and intersection are in order to achieve AI-aware and reliable management. The present research project screens the state of the scientific literature on the topic, contributing to the ongoing scientific debate on the appropriateness for e-tutor/leadership to use AI and its tools, (Chatgpt, start-ups such as Riid) in the performance of their functions. The intent of this contribution is to lay the exploratory foundations on which to base a multi-method study for inclusive-transformational leadership training of e-tutors, through the Flipped Inclusion model.



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1. E-tutoring in the algorithmic-systemic model Flipped Inclusion, between inclusive leadership and Artificial Intelligence

Artificial Intelligence and algorithm technologies are permeating many aspects of daily life (Sibilio, 2023), generatively impacting people and social contexts with re-productive accelerations, which exaggerate the liquidity of cross-media transformational processes already in place (Murdaca, 2022).

The goal that the new times dictate is to redefine the lines of research in relation to AI, to understand how the educational field compares and interrelates to Artificial Intelligence, what the points of connection and intersection are in order to achieve a conscious and reliable management of AI. This involves determining criteria and connections with the broader principles of the culture in which the technique itself is situated (Rivoltella & Rossi, 2019).

In light of the indications of the European Commission, present in the Communication of April 8, 2019 (COM, 2019), the fundamental requirements for the design, implementation and reliable use of AI systems, should be anchored in the values of human supervision, technical ruggedness, data privacy, transparency, non-discrimination and equity, but above all, the vocation towards social/environmental welfare and responsibility (OECD, 2019), as strong points on which to root any ethical and developmental perspective of critical-conscious management of the new AI universes.

The urgency is to make meaningful connections through contamination between interdisciplinary fields of study, as well as joint comparisons and negotiations between models, goals, actions and outcomes that are both effective and ethical, participatory and concrete (Panciroli, et al. 2020).

Artificial intelligence, while a powerful generative algorithmic device, should be significantly placed in the realm of relevance with instrumental connotation: it is nothing more than a tool to achieve ends. Its intrinsic value and its positive or negative impact on education, therefore, depend on the functional applicability and mode of strategic implementation in its use on fields of relationship and in-relation: and this is where the indispensable role of pedagogy comes into play.

A collective awareness is urgently needed about the prosocial need for pedagogical management education, capable of promoting responsible administration and management of the new educational vanguards, connoted by logics of techno-syncretisms, as possible amplifiers of subjective and inter-subjective potentials (Aiello, et al. 2016).

Educational visions need to be rethought in relation to AI systems, to embrace the song of divergence (Sadin, 2019, p.182), as the networking of all forms of transformative possibility. Therefore, it is a matter of investing in the educational promotion of multi-perspective flipping soft skills from the prosocial vision, such as those to be invested in by the Flipped Inclusion model, through difference complementarizing approaches with regenerative plusvalue system traits. In fact, the view of systemic complementarization of individual and group potentials, aided by responsible stewardship of technologies (Zellini, 2018), would make generative crossmediality a desirable amplifier of intrasubjective and intersubjective powers (Corona, et al. 2017), through processes of enfranchisement from compensatory logics and proactive re-

investment in social constructs, such as diversity, equity and inclusion (Sibilio & Aiello, 2016).

It is necessary, therefore, to consider a new pedagogical mission capable of promoting models of learning by immersive experience, supporting itself with technologies (Di Tore, et al. 2017) to take to task the intersections between built spaces and their users, (Petruccelli et. al 2017), to contribute to the transformative co-construction of the new social contexts of learning and make them inclusively regenerative, in situated relationships and for augmented contexts (Corona, De Giuseppe, 2017). Educational activity, in this sense, will have to retrace an educative action to the management of divergences, to be reconverted into empowering systemic potentials, to pursue a prosocial common good (De Giuseppe, Corona, 2020).

This digital revolution is not only changing the way students acquire knowledge, but is also redefining the role of teachers and the very structure of the learning environment (Mura, 2020).

Increasingly strong stimuli are coming from communication technologies, prompting a rethinking of concepts, methodologies and practices proper to education (Panciroli et al, 2020). The result of immersive use of AI with strong pedagogical potential, but also with traits at the risk-boundary of the pervasive, must be assisted by models of educational balancing of soft skills for transvaloreal awareness (Zawacki-Richter, et. Al., 2019) and the promotion of inclusive social environments of re-adaptive learning and instrumental skills of AI applicability. We are faced with the social need to activate educational/training pathways inescapably connoted with continuous critical supervision capable of supporting and ensuring humanized processes and re-humanizing methodological grounding (Educause, 2019).

In general, artificial intelligence (AI) through the implementation of processes of personalization of the educational experience (Corona, 2018), represents an educational opportunity if it is subjectively and intersubjectively centered on flexible, adaptive and creative forms of integrated empowerment, capable of enhancing its effects in terms of personal goals and enactment of the same in the perspective of relationally situated ecosystems. We are witnessing the introduction in every field of innovative tools and techniques that can enrich and personalize experientialities, including educational ones. The use of machine learning for example, represents a strategic-instrumental educational opportunity to modify the design of educational intervention and improve the learning experience, as data analysis, inference, predictive processes and educational and preventive intervention are enabled, with the possibility of meaningful learning analysis, through which to identify motivation to invest in, or demotivation to curb, to avoid dispersion and forms of isolation and/or abandonment. Conversational and pedagogical agents, such as chatbots, also represent valid instrumentality of interaction and educational support for the continuous feedback they allow and that turn out to be necessary for the promotion of a cooperative learning environment (De Giuseppe, 2016).

It is useful in this regard to start from a reflection made by Sidney J. Harris: "Good teaching must be slow enough so that it is not confusing, and fast enough so that it is not boring": good teaching must be slow enough so that it is not confusing and fast enough so that it is not boring (cit. Marchisio, et. al., 2019, p. 177).

Such a statement gives the incipit to an important new way of approaching teaching, in which slow and fast become two characterizing and complementary adjectives that can facilitate personalized study, just as e-tutor and AI become com-

plementary means to personalized learning, for which the support strategies used become crucial and bring significant benefits.

To fully exploit this potential, we need to make sure that teaching methodologies, strategies, and techniques are up to the challenge that lies in acting strategically to cope with an artificial system that is higher performing in terms of efficiency; it is reliable, because by ruling out possible malicious acts, it is able to ward off errors caused by human fallibility, but, at the same time, it is more rigid, in terms of variability and arbitrariness of cognitive pathways, than the human one (Zawacki-Richter, et al., 2019).

In an attempt to manage those not managed by AI, it is necessary to question the possibility of its permeating and improving use of the activity of educational figures but also of the added value of mediation figures such as that of the e-tutor, aimed at achieving well-being systemic ecological (De Giuseppe, 2016).

Wanting to dwell on a first form of correlation between forms of tutoring, we can see that when intelligent tutoring systems are used in a formal learning environment, discipline learning produces traces of learning activities that can be combined to identify each student's online behavior and can be used for learning analysis. Data contained in student information systems can also be used to plan resources and courses and to predict dropout and guidance activities. In the case of learning on online platforms, students can view the content of video lectures in a way that is personalized and adapted to their own pace of study, which may vary according to their life needs. They can focus on topics that are deemed more difficult. Where teachers can more easily identify students' needs and consequently support them in any critical issues they encounter. However, inadequate design or careless use of AI applications could result in harmful consequences. Certainly we witness the continuous emergence of Doubts related to the Ethics of AI, about its use, about the role it can be assumed in the assessment process, or even about the incidences and inferences arising from a contamination between multidimensional spectrums with emergent traits of posthuman transhumanism, the evidence of impacts connoted by the new needs for reinterpretation of ecosystems by rehumanization.

Doubts about the quality of learning (Bauman, & Mazzeo, 2011), whereby one would find oneself talking about superficial learning, information acquisition and not deep learning. Other doubts could be raised about Equity in Access, understood as a digital divide-some have access to AI-enhanced learning resources, others do not.

This is compounded by the fact that overuse of technology can lead to addiction, reducing the ability to think critically and independently. Data privacy and security issues, which could be subject to inappropriate use (De Giuseppe, & Corona, 2020).

It is required, therefore, that educators have awareness of and are able to verify whether the AI systems they use are reliable, fair, and secure; they must also ensure that the management of education data is secure, protects the privacy of individuals, and is used for the common good, that is, they must stand as guarantors of "ethical artificial intelligence" (Fossa, 2020). Rather than trying to understand the full functionality of AI systems, it is more important for educators to know the basic limitations and mechanisms of AI systems and how they can be used to assist teaching and learning with respect to safety and ethics. It is a matter of proceeding to a combination of AI with exploratory learning environments, capable of outlining the useful path to achievement, based on useful feedback to identify skills and attitudes, with the useful

strategies to support student learning, which can range from peer education to scaffolding.

So, "Technology alone is not enough to act on student motivation: without the expert practices of teachers, technology alone produces nothing" (Rivoltella, 2012, p. 28).

The present arguments represent and highlight the areas for which exploratory-descriptive research that also makes use of guiding questions is needed in order to also direct policy (Di Tore, 2023), which is called to manage the "public good".

In this study we focus primarily on the mediative and guiding role of the e-tutor and whose main competence is relational in the sense that he/she lays the foundation for the credibility of networked communication. He/she acts as a techno/technological support in the network, manages documentation and monitors activities, has cognitive competence in the sense of mastery of topics and is sensitive to the implications of the learning process (Rivoltella, 2006).

In the development of an inclusive virtual instructional design, the e-tutor must take into account the seven fundamental principles for working on artificial intelligence, encapsulated in the technical guidelines developed by the High Level Expert Group on Artificial Intelligence for the E.U. in 2018, which can be grouped into three macrocategories that must be present throughout the entire life cycle of the system:

- a) The ethics of AI, to ensure adherence to ethical principles and values, such as:
 - Intervention and surveillance, which refers to fundamental human rights;
 - Diversity, inclusion and equity, such as accessibility/participation planning.
- b) The legality of AI to ensure the applicability of laws and regulations:
 - Data privacy and governance: such as data quality, data integrity, and data access;
 - Transparency, which also refers to traceability, transferability and communication.
- c) The strength of the AI from a technical and social point of view, to avoid harm, including unintentional harm, ensuring:
 - Technical strength, in terms of resilience to attack, accuracy, reliability, and overall security, such as reproducibility, contingency plans;
 - Accountability, referring to verifiability and reduction of negative effects, com-promises, and appeals;
 - Social and environmental well-being, in terms of eco-sustainability, social impact and democracy.

The educational challenges, with increasing flexibility to meet rapid technological changes and the development of technical skills to facilitate leadership, remote monitoring, creation of intercultural teams, motivation of followers, feedback for the promotion of figures such as that of e-tutor/leadership (Cook, 2010) requires an investment in the development of the e-tutor's communication skills, to guarantee efficient and effective interlocution and the activation of an inclusive educational relationship. The study starts from epistemological assumptions that are characterized by axiological and methodological aspects:

- invest in virtual teams well supported by e-tutors, to enable the best talent regardless of location, capitalizing on the unique skills of each organization and to bring together people with different perspectives and knowledge bases, leading to higher levels of innovation;
- from the awareness that virtuality amplifies the educational challenges of working in e-teams, due to the greater uncertainty and complexity, which increases the difficulty of processing information and sense-making tasks to be faced;
- from the procedural assumptions that characterize the Flipped Inclusion model, which proposes a simplex operation (Sibilio, 2023) for multilevel cooperation and virtual teams (Han, et al. 2017) organized by levels of increasing complexity from microsystem to macrosystem (Bronfenbrenner, 1986).

It is about educating inclusive leadership with transformational e-tutoring models to increase inclusive soft skills through the EIPS steps of Flipped Inclusion (De Giuseppe, 2018):

- E) Exploratory investigation of forms of operationalizing e-tutor operational processes to cope with complexity in systems;
- I) Identifying Discovery on what to intervene and what needs change in the complexity of e-tutor work systems;
- P) Design Mastery on framing/challenge/problem change that challenges outdated/unsuitable models for managing e-tutoring experiences in the contingent complexities of systems;
- S) Experiment with Maximizing and complementing soft skills for inclusive e-tutoring.

The aims of this research perspective are:

- 1) implement the collection of data useful for an experiential approach to the debate relating to the use of AI in the educational sector, contributing through the reflections developed to the achievement of responsible administration of AI in educational paths;
- 2) explore possible permeating and improving uses of AI and its tools by the e-tutor, through the Flipped Inclusion model, aimed at achieving systemic ecological well-being (De Giuseppe, 2020).

The questions we ask ourselves with this exploratory-descriptive study are:

1. Is it possible to promote systemic ecological inclusive leadership in e-tutoring with AI tools?
2. What can be the critical and proactive methodologies for inclusive e-tutoring with the use of AI?

The perspective in which we invest is rooted in the theoretical and methodological constructs of the Flipped Inclusion model to be applied to e-tutoring/leadership (Avolio, & Kahai, 2000) as a transformational educational process of social influence, mediated by technology and AI, to promote prosocial personalities and inclusive contexts, through an analysis of changes in individual and

group performance, for the achievement of specific objectives, but also in communicative attitudes, emotional management, thought processing, behavior.

The intent of this contribution is to lay the exploratory foundations on which to base a multi-method study for inclusive-transformational leadership training of e-tutors, through the Flipped Inclusion model.

2. Role and soft skills of the e-tutor, in the era of Artificial Intelligence: study perspectives

The e-tutor intervenes in identifying the needs and expectations of the student, effectively carrying out a social function (Losito & Pozzo, 2005), welcoming the student into a warm environment, acting as a glue in the group, managing socialization activities and discussion among the students.

The role of the e-tutor also involves the activation of the framework function (Mottana, 1993) understood as a physical and mental space that allows the trainer and the trainee to meet so that the teaching/learning process is implemented, this is the potential area of training.

The orientation and support phase of the individualization of the pathway brings into play several functions of tutorship which are the process function (Contessa, 1993) understood as attention to the cognitive dimension, the tutor assumes the role of facilitator whereby he or she is oriented to develop the capacity for autonomous learning through: (a) the identification of potentialities, and thus enabling the subject to recognize the usable resources he or she already possesses; (b) the generation of affective and motivational forms of scaffolding (encourage, approve, support); (c) the definition of orientation goals congruent with possibilities and aspirations, with one's own skills to better delineate possible orientation paths; (d) communication, fostering both exchanges of knowledge and processes of negotiation of meaning in groups. And it is precisely in the informal dimension that the figure and role of the tutor becomes more incisive and supportive for the individual for whom he or she also assumes the function of support (Scandella, 1995) understood as the definition of objectives allows to flank and preside over the individual's learning process to ensure the achievement of training objectives. Support is of the individual type, in a dual relationship, and aims to identify, recognize and enhance the individual's resources and potential. In this case, the tutor draws up the personalized training path that will be signed by the parties involved. Finally, the e-tutor assumes and performs the instrumental function, aimed at managing and facilitating the logistical aspects of learning.

Tutorial care and attention is directed primarily to the logistical aspects of the training scene, and thus proposes a series of stimuli and situations that involve the student in the process of evaluating the experience. The main objective is the promotion and activation of situational learning pathways, that is, the construction of a learning community (Downes, 2014) that provides suitable tools for adequate individual -but common- preparation for the practical expendability of one's skills in order to make students active, aware and participating in their experience.

The appropriateness of the characteristics of e-tutors is certainly the key element for the success of the training (Nida, 2003). The main characteristics to pay attention to are: - commonality with the final recipients - personal characteristics - motivation.

E- tutors act as a link (Zanazzi, 2022) between the world of adults or experts and that of the final recipients, translating messages into a more credible and under-

standable language, they are a point of reference that goes beyond the formal moment of sharing possessed information, they act as role models by proposing innovative health behaviors compared to the habits of the target group, making them acceptable and practicable, they must possess characteristics that make them similar to the end recipients, they must have leadership skills, they must have empathy and good interpersonal skills, they must be motivated to participate in the initiative, willing to follow the "rules" of the program and have a desire to get involved, they must be able to work in a team, they must be flexible, they must be able to maintain consistency between what they say and what they do, and above all they must be trained. The training of the e-tutor must be as much about the notional content as it is about enhancing one's knowledge of the issues being addressed, as well as enhancing transversal skills such as organizational or communication skills, which are necessary to maintain interaction with the final recipients, stimulating reflection on the beliefs and attitudes underlying the behaviors whose change is to be promoted (Le Boterf, 2000). Trainers must be able to create a positive climate in which it is possible to foster discussion and confrontation among participants and with the trainers themselves, even addressing more sensitive issues. The methodology used in training, which is considered among the most effective, is the interactive methodology, which involves small groups in which experiential learning is possible (Le Boterf, 2000).

On the basis of the above reflections, the present contribution with an exploratory-descriptive character, aims to investigate, by means of a structured multiple-choice questionnaire to be submitted to forty e-tutors working in the Giustino Fortunato Telematic University of Benevento, the subjective opinions and perceptions, on the pros and cons, benefits and potential risks, related to the use of artificial intelligence in academic contexts in the performance of their functions. For a comprehensive analysis of the situation, the present study, in a preliminary development phase, intends to analyze possible dangers and risks, as suggested by Chatgpt itself (Di Tore, 2023).

This will be followed by a survey phase for an analysis of the behaviors forty e-tutors pre-sent within the Giustino Fortunato Telematic University in the Benevento campus, with the administration of a multiple-choice questionnaire to be submitted, in order to collect perceptions regarding the use of artificial intelligence in the performance of their functions, such as the identifiable pros and cons, such as the benefits and potential risks.

This was done in order to implement the collection of data useful for an experiential approach to the debate regarding the use of AI in the educational sphere, contributing through the reflections elaborated to the achievement of a responsible administration of AI in educational paths in which the role of collaboration is transversal as an indispensable tile of a composite professional mosaic (Sibilio, 2023) in which the collaborative dynamic must be the common thread that unites to network, teacher, e-tutor and student (Mura, 2020).

To start this exploratory-descriptive study, a survey was carried out on the perceptions of e-tutors and specifically a multiple-choice questionnaire was administered in order to collect perceptions relating to the use of artificial intelligence in carrying out their functions. , such as the identifiable pros and cons, such as the benefits and potential risks. The survey was administered to 40 orientation and discipline e-tutors of the Giustino Fortunato online university.

The guiding question that guided this survey was:

What are the perceptions of e-Tutors on the risks and advantages of AI in distance learning?

The questions asked were the following:

- 1) Are the outcomes of the system oriented towards the learning outcomes intended for the learners? If so, how reliable is the AI system's predictions, assessments and classifications?
 - Decisions that affect students are adopted with the intervention of the teacher, based on the results expected by the system, which is why they are reliable. In the case of anomalies, these can be detected by the teacher or tutor;
 - There are no procedures that allow teachers to monitor and intervene;
 - It would be necessary for teachers and e-tutors to acquire the training and information necessary to monitor and use the system effectively and guarantee its security.
- 2) Does the system offer suitable interaction methods for learners with disabilities or special educational needs, so as to adapt to their individual needs?
 - The AI system is designed to treat learners with respect and adapt to their individual needs;
 - It would be necessary to adopt procedures to prevent the use of AI from leading to discrimination or unfair behaviour;
 - The system does not allow for sufficient adaptation to individual needs.
- 3) Do you believe that your support function could be limited or diminished by excessive trust in the AI system or excessive dependence on it?
 - The use of the system causes harm or generates fear for individuals;
 - Social interaction is simulated;
 - The support function is not limited by the use of the system.
- 4) Are you aware of mechanisms to ensure the anonymity of sensitive data and do you think there are procedures to limit access?
 - the student is protected and the data is stored in a safe place and used only for the purposes for which it was collected;
 - it could be useful to identify a mechanism to allow teachers or e-tutors to report problems;
 - I don't think you need to customize your data and privacy settings;
- 5) How do you think the AI system can enhance teaching, learning and assessment?
 - Assessment through the AI system takes into account the fundamental values of education and allows the identification of any learning difficulties;
 - I don't believe that the use of the AI system can facilitate learning;
 - Greater collection of experiential data would be needed for effective evaluation.

3. Discussion and Results

The results of the data analysis confirm the validity of the initial hypotheses of the research, i.e., the possibility of a possible connection between the responsible use of the AI system and the fulfillment of the process, support, and instrumental functions of the e-tutor, where the same can intervene with its empathic and sensitivity component to make up for the lack of the same in the AI system.

In regard, to the question asked about human oversight and data tracking, 38 e-tutors reported that decisions regarding the learners' learning path is made by the teacher on the basis of the results processed by the system, which was therefore found to be reliable and that in any case in the case of anomalies and possible intervention of the educator.

All forty e-tutors, on the other hand, felt that system offers appropriate modes of interaction for learners with disabilities or special educational needs, so as to adapt to their individual needs.

Regarding social interaction, empathic approach, fulfillment of its functions of referencing and facilitating in the personalized learning process of learners, none felt that the AI system could diminish or reduce its scope of intervention or function, in fact recognizing a purely instrumental function of the system.

Regarding knowledge of mechanisms to ensure anonymity of sensitive data and believes that there are procedures to limit access, 28 learner e-tutors felt that the system is protected and data are stored in a secure location and used only for the purposes for which they were collected, where 12 suggested that it might be useful to identify a mechanism to allow teachers or e-tutors to report problematic issues. Thus, the importance of training e-tutors also on security, confidentiality, privacy, and accountability is noted.

Finally, about the possibility of the AI system to enhance teaching, learning and assessment related to it, 23 e-tutors argued for more experiential data collection for effective assessment.

So, in considering the use of AI and data, it is important for pedagogy to prepare and implement a collaborative and representative process whereby educators must examine how to use AI systems to support their own teaching and student learning. It turns out that predicting the consequences and effects of the use of data and AI in formal, informal, and nonformal learning and training process is absolutely difficult. Therefore, an incremental approach to the development and deployment of these technologies and their evaluation is needed. It involves gradually introducing these tools into their contexts and constantly monitoring the social effects that may result, while maintaining the ability to retrace one's steps if unintended consequences occur.

The questions proposed in these guidelines can be used as a starting point for gathering information on AI systems already in operation or as a basis for discussion on the future use of AI and data in school settings.

4. Conclusions and perspectives

The aim with this study is to arrive at a guideline as to which behaviors should be considered appropriate, inappropriate or unacceptable in order to ensure fair and equal treatment for all. It is important to clearly define the goals that the "new" school wants to achieve with the new technology. Specific evaluation criteria are needed to make informed judgments about the effectiveness of the AI system in terms of improved learning outcomes, cost-effectiveness, and ethical use. The use of the AI

system should be continuously monitored to detect its effects on learning, teaching and assessment practices. It is important to decide how to organize and carry out the monitoring, and in what direction to push the research, this is in order to integrate the two learning approaches for personalized guidance directed toward optimizing each individual student's education. The present research project sifts the state of the scientific literature on the topic, contributing to the ongoing scientific debate on whether e-tutor/leadership should use AI and its tools, (Chatgpt, start-up as Riiid) in carrying out their functions (Zhang, 2020). Questioned on the point, Chatgtp suggested the need to consider not only the opportunities for support in personalized learning, but also the possible critical issues on privacy and equity (Di Tore, 2023), as well as the need for performant technology training at the initiative of the Italian government.

In light of the arguments, the need emerges to introduce policies and procedures at the educational and research levels to set expectations and provide guidance on how to consistently address any problems as they arise, this is to ensure reliable, human-centered AI; implement human oversight; ensure that input data are relevant to the intended purposes of the AI system; provide staff with appropriate training; and monitor the operation of the AI system and take corrective action (Zhang, 2020).

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