

Between Pedagogy and Semiotics: importance of iconic and metaphoric language in media education

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Abstract: During the 20th century, pedagogy and semiotics pursued seemingly parallel paths. Indeed, there were numerous points of contact between these two disciplines until the emergence of edusemiotics, which attempted to apply the semiotic approach more specifically to the pedagogical field. Although this endeavor remained a fruitful niche research, it could today represent a renewed form of hybridization of semiotics and pedagogy, based in particular on the centrality of the concept of “icon”, understood as a sign whose interpretant is linked to the object by “similarity”, and of metaphorical language as a figurative media representation of the real world based on “similarity” rather than identity. In the age of artificial intelligence, this hybridization could offer new ideas for a media education centered on the student and on dialogue with the teacher, placing critical thinking, the interpretation of signs and that of the student at the center, contrasting phenomena such as brain rot, cheating, cognitive debt and addiction linked to the use of chatbots.

Keywords: pedagogy; semiotics; icon; media education.

1. Introduction: pedagogy and semiotics

At a first sight, above all for not specialists, pedagogy and semiotics could appear as two sciences and academic fields that are quite far from each other.

But on closer inspection they are closer than it could appear, also considering the strongly interdisciplinary status of the pedagogical academic area. Indeed, recovering the metaphor of the tree by Dubinsky (et al., 2022), pedagogy could be represented by a tree whose roots ecosystem consist of different disciplines such as psychology, neuroscience, social studies, and educational research. Together with other disciplines, also semiotics could be considered one of the roots of the teacher and of pedagogy, for its capability to enrich the knowledge and the educational research.

The first real tendencies to hybridization occurred in '60-'70 just when media education was born. So, the presupposes of the hybridization are above all two: the more and more growing interest for both pedagogy and semiotics for new languages and the overcoming of the academic conception of the literature and written text as the unique categories of text meritorious to be studied.

This cultural climate was generated by a set of factors.



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A key one was the Peirce semiotics that gained more and more visibility (Magnani, 1991)

So in this cultural framework, pushed by the '68 historic movement, pedagogy opens more and more research interests towards media education and multimedia and at the same time in the science of signs we assist to the concrete passage from the most traditional past semiology (as science of signs that studies a specific type of signs, the conventional and voluntary ones, as for instance the literary ones or the symbols, the artistic sign etc., inserted in the semiosphere) to a most wide interests science, the semiotics, that studies also other types of signs, the involuntary and not conventional that correspond to the biosemiotics.

Also in that period in a global view the model of sign switched from the dyadic model of the sign to a triadic model of signs, In those years the semiological model based on the Saussure's theory of the sign, seen as a leaf with two sides duality significant/significate leaved space to the triadic model of sign – sign, interpretant and object – based on the semiotics of Peirce (Yakin, 2014). The Peircian semiotics opens to a new view of sign where the interpretant acquires more freedom and distance from the object (Traini, 2006).

The openness to this Peircian model of sign brought closer semiotics and pedagogy. The common field was the overcoming of the transmissive-delivery conception of the communication. In pedagogy, as known in '60-'70, the overcoming of the teaching delivery model in favor of the pedagogical interactive and the constructivist pedagogical framework brings to a new similar approach in both academic fields.

2. New models for pedagogy and semiotics

In pedagogy the spreading of new pedagogical models based on the learner centred (Shah et al., 2020) puts on the center of the learning process the students, his needs and attitudes. The student from a quite passive role of a person receiving a message from the teacher turns into an active actor of his learning. The new and inclusive methodologies are all inserted in this new theoretical framework that aims to change the traditional learning method in order to make the learning more effective, more engaging, more pleasant, and more respectful of the natural diversity of the students (Bremner et al., 2022).

In this new mode dialogicity, interactivity, and intertextuality find more space because the communication changes and the students are not more a decoder of the teacher message but a co-constructor of the meanings of the learning process.

Something similar occurs in the field of semiotics. After the '70 the semiotic approach of the structuralism appears passed by the interpretative semiotics. The structuralism, in a way similar to the delivery teaching, starting from the Saussure sign model, focused on the deep structure of the text (Iurato, 2023) to be decoded by the reader: the reader was similar to the student in traditional didactics. Instead, just from mid end '70 the new interpretative semiotics gained popularity. In this semiotics the focus is on the interpretation by the subject, it is a sort of semiotics of the subjectivities (Leone & Pezzini, 2013) because every subject is called to interpret and he could do also in a very different way depending on the subjectivity.

In Italy Umberto Eco is the most famous representative of this current: the famous essay *Lector in fabula* (Eco, 2014), already in the title explains the crucial play of the reader that is the starting point to build the meaning from the text.

So, we could say that a socio-constructivist framework unites pedagogy and semiotics in these new years.

Furthermore, just in '70-'80 of '900 the spreading of new media, such as television, brought both pedagogists and semiotics to focus on the new media.

Although the aims were different (the education for pedagogy and the comprehension of the meaning for semiotics) the spread of new media gets closer to the two sciences. Before the mass media such as television and after the digital revolution changed the way to communicate, to learn and to co-build meaning in a world more and more complex.

The approach of the semiotics gave new methodological tools to approach these new media that were changing the social context (Montaldo, 2001).

Even more with the digital revolution both pedagogy and semiotics had started to focus on digital media and his meanings.

Maybe the theoretical framework, the instrument and the approaches were different, but the attempt to study the more and more complex mediatic word was the same. Also the ethic tendency was similar because at the end of 2000 also the semiotics started to show interest to the ethic question with the development of the semioethics (De Martino, 2015).

3. Edusemiotics

In the '10 of the new millennium the hybridization of pedagogy and semiotics brings to the "edusemiotics", a crossing field where are experimented suggestion from the hybridization of the interest for the abductive thinking of Peirce, the semiotics as axiology for pedagogy, until the interpretation of the "school read as a text", the school actor (a teacher or a student) is as a reader in front of a text. The term edusemiotics was coined by Marcel Danesi in the subtitle of the Foreword of volume *Semiotics Education, Experience* of Imma Semetsky (2010), then editor of the book *Edusemiotics – A handbook* (2017, Springer).

Actually, this hybridization started but in some ways it didn't go beyond a certain point and remained a niche research.

Despite the numerous attempts to put in dialogue pedagogy and semiotics today the dialogue is quite difficult and many times edusemiotics is considered merely a sub-branch of applied semiotics.

The edusemiotics, also in the specific field of media education, looks like it is missing a real impact in the didactic practice and in the pedagogical research.

Despite a certain interest about the hybridization of pedagogy and semiotics, Minello (2016) says: «Attualmente la semiotica – come fondamento educativo, come teoria del romanzo della formazione, oppure come metodologia di ricerca, o come quadro di riferimento per la policy e la pratica scolastica – resta praticamente inesistente in molti programmi di formazione degli insegnanti, inesplorata nei libri di testo».

The limited diffusion of this approach is caused by the difficulty to understand all the semiotic theories and to give them a concrete dimension in pedagogy that has in general a more practical approach.

Also Rivoltella, in a chapter of his book *Media education*, where propose a semiotic approach, explains the difficulty to use all instruments of semiotics, especially in the media education because of the theoretical complexity of the semiotic tools, difficult to understand by students but also by many teachers. Indeed he clarifies that «si tratta

[...], di strumentazioni teoriche e metodologiche troppo sofisticate di sicuro per la scuola secondaria» (Rivoltella, 2017, p. 141). Anyway about the semiotics he writes: «Quando si parla di approccio semiotico nell'ambito della media education, non si fa riferimento naturalmente all'adozione del punto di vista scientifico proprio di questa disciplina in funzione di una sua integrazione nella pratica didattica...». Considering these difficulties he proposes «uno sguardo che si serve delle tecniche e dell'analisi per procedere a una decostruzione delle forme testuali con l'obiettivo.... di produrre effetti sul piano educativo». So the author if on one hand explicits that the marriage between pedagogy and semiotics is something hard to realize on the other hand he declares the utility of a semiotic approach above all in the specific field of the media education, so rich of signs and more and more complex languages. The main goal, he concludes, «consiste nel favorire l'incontro attivo del bambino/ragazzo con i testi e i loro linguaggi: leggere per imparare a leggere» (Rivoltella, 2017, p. 144).

But in the era of Artificial Intelligence we could look for new forms to put in dialogue between pedagogy and semiotics, in order to overcome the concept of “deconstruction” of the textual forms in direction of a more concrete approach. In a more and more complex digital context, where new forms of languages seem capable of putting at risk life, a new dialogue could be based on a semiotic concept: the “icon”.

Maybe a new more concrete and precise approach could be useful to boost the potential of the hybridization between semiotics and pedagogy.

4. Pedagogy and semiotics in the era of Artificial Intelligence

In the era of Artificial Intelligence, when a new need to guide the pedagogical and ethic use of new digital tools, a new framework to hybrid pedagogy and semiotics could start from the Peircian concept of “icon”. According to the semiologist Charles Sanders Peirce, the icon is one of the main three categories of sign: index, icon and symbol. In the index the relation between sign and its interpretant is of contiguity (as for instance in the mouse pointer), in the symbol the relation is arbitrary and stated by social convention, as for instance in the meaning of the words. In the icon the relationship between sign and its object is the similarity (Kralemann & Lattmann, 2013). Indeed in ancient Greek *eikon* doesn't mean “image” but “similar”, it is something at the same time different but similar to the concrete word.

In current times, when the on-life mixes the digital and the analogue world and the brain rot are more and more a challenge for pedagogy, the iconic approach just makes people conscious that what they see on the screen is not the reality but the similar representation of the world.

In the semiotic concept of icon as “similarity” between the signs and the object (the real world), there is all the space for the media education, for the active role of the student and for his interpretation and tension to build his digital competence.

Starting from the similarity, iconic and metaphoric status of the new and old media means focus on all metaphoric aspects of the digital context to arrive at a new pedagogical iconic centered approach.

The main focus on the icon and metaphor could give new ideas into the three declinations of media education, the education “to the media”, education “with the media” and education “through the media”.

For instance, the iconic-semiotic approach in the “education to the media” could translate into new deep practices of analyses of the forms of the expression of the media: explaining for instance that a digital photo in a social network is only a met-

aphoric-similar construction and analyzing the representation procedure could fight the brain rot (De Martino & Basta, 2025).

Similarly in the Artificial Intelligence era the comprehension that AI is an instrument that only gives us an “icon”, a similar representation of our world, that is only one of an endless possibility to describe and represents the “reality”, each one with a texture of meaning. In a certain sense the in-depth study of the semiotic-metaphoric aspect of the digital words pushes to a more conscious interpretation of the signs. The skill to understand that a digital or analogue medium is far from the reality, that an answer of Artificial Intelligence is only a construction of the word, a sort of platonic cave that is only a shadow (similar but different) from the reality, is a starting point to develop the digital competence. At the same time the comprehension of the iconic status of a photograph in the learning of the iconic status of the digital sign is essential.

In the field of education “with the media” an icon centred approach could help to leverage the iconic-metaphoric medial potential in the learning process, also in an innovative and inclusive way.

In the “media trough education” field in the space of iconic-similarity of the signs there is also a space for the authorship and for the endless construction of storytelling and narrative worlds, spreading the creativity. Focusing on the “icon” also means an endless range of opportunities to elaborate an iconic-metaphoric worldview.

So, starting from the semiotic concept of icon and with a more concrete study of the infinite form of the similarity in the digital era and its consequences in ethics and learning outcomes, the hybridization of the two sciences may be the starting point to new approaches of media education.

Also, the pedagogical research could benefit from the semiotic iconic approach exploiting the specific semiotic tools. For instance, the use of the Floch’s semiotic square to study the self-representation of the student has just been experimented (di Padova et al., 2023).

In conclusion a new and more deeply and epistemologically integration of semiotics and pedagogy based on the iconic and metaphoric could breathe fresh life to the media education and to the general pedagogical field.

5. Icons and metaphors in AI era

In the era of Artificial intelligence, the cruciality of the “icon” is even more evident. This new technology is now impacting the entire learning process as well the society in its globality. In the pedagogical field the AI is raising concerns in many teachers (since Ai is seen as a tech able to replace the teacher and the student in his homework. Above all, the phenomenon of cheating (Leet et al., 2024; Sweeney, 2023) is causing concerns: the homework and exams could be invalidated by Ai used as replacement of the student human effort.

From a semiotic point of view, generative AI is usually perceived by students as a sort of modern oracle. As a sort of modern myth of the cave the AI is seen especially by young school students usually appear as a foolproof instrument that give a exact representation of the reality and so it is able to offer perfect answers for homework and exams.

The recovery of the semiotic concepts of “icon” with a pedagogical perspective instead pave the path to a more critic approach to generative Ai.

This semiotic approach allows students and teachers to look at AI as an iconic instrument that give us as not a sort of “oracle” but the a iconic-metaphoric representation of the reality, always questionable interpretable and rewritable.

Ai, far from being a perfect instrument, could be been defined as a “stochastic parrot” (Bender et al., 2025), a metaphor used also by Naon Chomsky, an instrument that combine and repeat the material has been trained with and its answers are anyway a perfect answer. The generated text is often welcomed by student as a replacement for their homework and critical thinking. The focus on the iconic and figurative intrinsic nature of the AI generated text recall to a new conception of the AI result, putting AI media education in a semiotic framework where the AI-generated media are only one of the infinite “possible worlds” (retaking Leibnitz, cfr. Brown, 2016) conceivable by AI. This look at AI provides an “iconic” digital representation pave the way to the awareness that AI is a technology with strengths and limitations but able to give the “illusion of thinking”, as a recent research published by Apple inc. (Shojaee et al., 2025).

This semiotic framework also counteracts the overconfidence toward generative-Ai, that is cause of possible side effects as addiction, brain rot due to acritical consumption and cognitive debt, a long term effect due to over relying on A tools studied by a recent MIT study (Kosmyna et al., 2025).

6. Conclusions

A new media education based on some crucial semiotic concepts such as “Icon”, “metaphor”, “figurative” language could be the key to contrast the digital illiteracy in educational contexts.

These concepts help teachers and students to recognize the sign nature of the online media, underling that are a net of sign in same way “similar” to the real world but not identical. In the space between the mediatic similarity opposite to the identity, a renewed media education could contrast many phenomena that are growing among young student as cognitive bran rot, digital media addiction, cognitive debt due to Ai.

The semiotic perspective could help to offer new point of view and to focus on the plasticity of the meaning promoting the critical thinking on the digital media, not yet seen as the reality. The current digital media world is a sort of platonic new cave where the hybridation of pedagogy and semiotics could help to reveals that the shadows are only distorted shadows of the reality.

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