

VENI, VIDI, DIDICI: TEACHING APPROACHES AND LEARNING OUTCOMES OF SEMIOTICS

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ABSTRACT

Semiotics is the study of signs and sign systems, and the formation of their meanings. From the point of view of semiotics, signs are explained by the assumption that everything has a certain meaning, often multiple meanings. The purpose of this paper is to answer the question – what is the role of semiotics in educational science? Education and art education have always been at the crossroads of these interpretations of meaning because semiotics presupposes an interpretation that is influenced by a myriad of circumstances and coincidences.

The scoping review and nodes strategy was used in this literature review to select relevant articles. The Web of Science Thematic Framework of Education and Educational Research database was chosen to map the role of semiotics. The criteria for article selection were language – articles written in English were selected – and keywords (“Semiotics” and “Semiotics, Art Education”). Based on these criteria 167 open-access articles were initially selected for analysis, from which further exploration was based on keywords relevant to the topic.

After analysing the abstracts of the selected articles, the papers were grouped according to the theoretical framework and approach. The main finding of this literature review was that semiotic analysis can help develop students’ critical thinking skills.

Keywords: *education, interpretation, semiotics, sign, visual culture*

Introduction

Meta-communication is present in almost all aspects of everyday experience. As a powerful yet interpretative communication medium, the formation of meanings of signs and symbols is an essential component of education. Semiotics, as the theoretical study of signs, symbols and signifiers as communicative behaviour models in communication networks, traces the paths through which meaning is constructed. Semiotics is relevant as it can prevent viewing everyday practises as entirely objective, existing independently of interpretation, and points to reality as a system of multiple signs (Chandler, 1994). Signs and symbols can take many forms – a word, a gesture, a work of art, a pattern or a set of actions. Regardless of their form, signs and symbols communicate meaning.

A sign is formed by combining an abstract concept (the signified) and a tangible form (the signifier) that our senses can perceive (Batu, 2012).

From a Pragmatist perspective, identity formation is primarily a social process, not an isolated one (Legg & Hookway, 2008). As such, it is influenced by various layers of meaning resulting from the interaction of social and cultural practices. Writer and philosopher Umberto Eco (1979) wrote, “semiotics studies all cultural processes as communication processes” (p. 8). Semiotics enables comprehension of the relationship between signs and society. Often, it is the visual symbols and signs that define, explain and shape the meaning of a particular educational concept as an illustrative example. From an educational point of view, images in learning content and visualisations created by educational actors make it possible to understand certain educational and cultural phenomena. Like an image for advertising purposes, images created or selected for educational use are structured to convey the intended connotations. As a general science of signs, semiotics can contribute to educational science in both theoretical and practical ways. The crossroads between education and semiotics, known as edusemiotics, underline the crucial role of semiotics in educational research (Petrilli, 2016).

How would one learn and teach image reading? The answer may vary depending on the aim and the field of science that is being addressed. Philosopher Roland Gérard Barthes, in his essay “The Rhetoric of the Image” (1964/1999), wrote, “we may say immediately that the literal image is denoted and the symbolic image is connoted” (p. 137). It is important to note that the language of signs and systems is remarkably diverse – the semiotics of formalised languages is being read differently from the creative scene of signs, which usually involves the formal analysis of an image. Semiotics represents a colossal research field, and no single study can have any claim to being encompassing (Chandler, 1994).

This scoping literature review aims to clarify the impact of semiotics in educational sciences, especially in art education. This research aims to clarify the role of semiotics in educational sciences by analysing the teaching practices and learning outcomes of semiotics through a general review of the literature.

Methodology

A scoping review was carried out, complemented by a snowball approach, which the authors of this scoping review refer to as a nodes strategy. Initially, 167 articles were selected for abstract analysis. After analysis of the abstracts, 18 papers were considered relevant, and eight articles were included based on the node strategy. The Scoping review was chosen because the aim of this article is to identify the role of semiotics in education by reviewing the literature selected according to the criteria listed below. The definition of a scoping review can be described in one word as mapping. The scoping reports are the basis for developing a framework mapping a research area’s key concepts (Peters et al., 2015). A scoping review covers the aspects of the research subject and the scope of the field of study, identifies the relevance and value of a systematic literature review

and outlines a perspective for future research on the topic (Levac et al., 2010). The mixed search strategy is persuasive in literature reviews (Wohlin et al., 2022). Eight additional articles were selected using a node strategy, the main concept of which is to select articles based on keywords and/or references from the initially selected articles.

A keyword search was performed in the Web of Science database. The selection criteria were the thematic framework of education and educational research, the English language, and open access. Based on the research question of this study, the keywords “Semiotics” and “Semiotics, Art Education” were used.

A review of all abstracts was carried out, and the selected papers were grouped into the following categories to provide a comprehensive overview:

- Theoretical approaches (Multimodality, Semiotics, Social semiotics, Symbolic interaction).
- Teaching and learning approaches (Interdisciplinary approach, Multimodal approach, Semiotic approach).
- Teaching and learning methods (Scaffolding, Flipped learning, and Semiotic mediation).

Based on the exclusion and inclusion criteria below, 18 articles were found to be relevant.

Exclusion criteria

- Articles exploring the use of semiotics in STEM (Science, Technology, Engineering, and Mathematics) formalised languages.
- Case studies that are not appropriate to the general research.
- Articles exploring the use of semiotics not related to educational science.
- Papers that focus on the research of specific scholars.

Inclusion criteria

- Research articles that analyse aspects of semiotics as a meaning-making process.
- Articles exploring semiotics in humanities and art studies.
- Semiotics and Arts-integrated curriculum.

A node strategy was used to select the eight articles. In total, 26 articles were selected for this literature review.

Results

Out of 167 papers selected in the database according to specific criteria, 151 were in social sciences, 1 in natural sciences and 16 in humanities. After an abstract review of papers selected based on mentioned criteria in the Web of Science database, papers were grouped into three categories – theoretical approaches, teaching and learning approaches, and teaching and learning methods. The findings of the scoping review can be grouped into conceptual categories depending on the purpose of the review (Peters et al., 2015). The selected articles were grouped into the categories listed above based on the keywords given by the authors and the research content. Each group of categories was reduced to specific types of impact, shown in Table 1, Table 2 and Table 3. A comprehensive overview

is, therefore, necessary to trace the diverse nature and applications of semiotics and for the most comprehensive analysis of the results, with an explanation for each topic. To frame this literature review, it is essential to consider the theoretical approaches:

- All the 167 paper abstracts that were analysed apply to semiotics as a field or are linked to the bundle of semiotics.
- Not all paper abstracts reflect the specific theoretical approach, learning and teaching approach or method from the point of view of how the research problem is defined.
- Only some of the articles selected in the database can be related to the theoretical approach *per se*.

Fourteen papers relating to multimodality were selected. Through multimodality, it has been explored how educational actors communicate and interact with each other beyond traditional forms of communication such as speech or the written word. From a multimodal perspective, educational actors interact through semiotic means (Sabena, 2018).

Table 1 Comprehensive overview. Theoretical approaches.

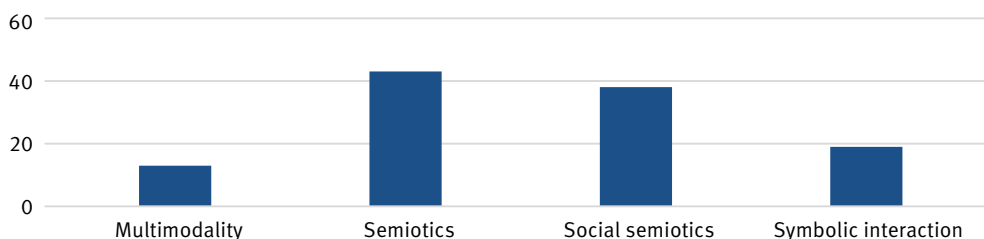


Table 2 Comprehensive overview. Teaching and learning approaches.

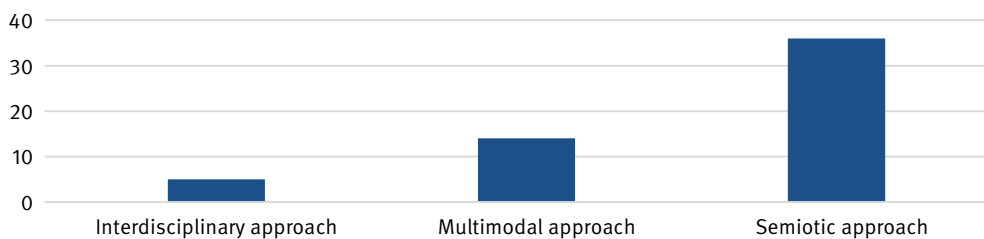
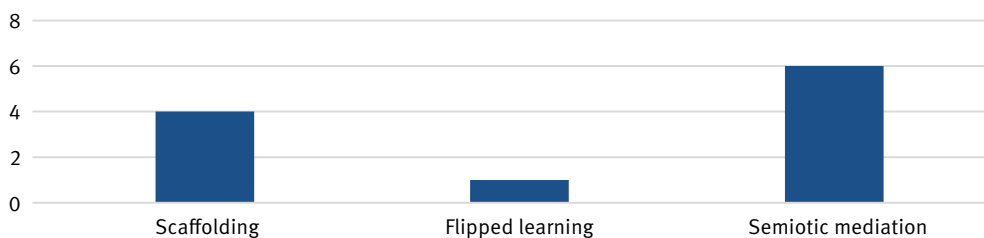


Table 3 Comprehensive overview. Teaching and learning methods.



Semiotic theory, to which 43 articles refer, explains how individuals exploit signs to create meanings in the surrounding environment. Semiotics influences education in theory and practice by showing the role of signs in the development of educational actors' experiences, competencies, and practises (Petrilli, 2016). Semiotics as a theoretical approach requires a more detailed explanation of the sub-theory/directive.

The social semiotic theoretical approach, to which 38 articles refer, is concerned with all forms of social meaning-making practices – visual, verbal or auidial. Social semiotics develops an unexplored area of research – the issue of the modal relation of meanings (Olteanu, 2021).

Symbolic interaction is a theoretical approach (mainly in sociology) that aims to explain how individuals interact with society by focusing on symbols that mediate the meaning of certain practices. Symbolic interaction explores meanings that arise from interactions in a social setting. Symbolic interaction research addresses the question of the symbols and semantic concepts that arise from interactions between individuals (Aksan et al., 2009), which are inevitable in educational processes. Symbolic interaction theory is relevant to 19 of the selected papers.

Teachers are expected to use a variety of teaching approaches in the classroom that involve well-designed one-to-one learning activities, teamwork, and whole-class teaching. An essential component is evaluation of the overall level of engaged educational actors and the feedback provided between them to orient the future steps of the process.

Five articles were relevant to discussing the interdisciplinary approach, including multidisciplinary educational actors cooperating with a shared aim to set objectives and decide and divide resources and roles. Interdisciplinarity as an integral didactical approach joins curriculum content and competencies across transversal dimensions (Sicherl-Kafol & Denac, 2010).

A multimodal approach was attributed to 14 articles aiming to improve comprehension and memorisation by involving and combining multiple senses in the curriculum. By incorporating these modalities, learners can learn in multiple ways (Kress et al., 2014).

The semiotic approach was relevant to 36 papers addressing the constructs of learning, constitutes and causes of the learning. In semiotics, learning is a process of interpretive inquiry. Educational processes are hermeneutic actions (Olteanu & Stables 2018).

Although learning and teaching methods are subject-specific such as topics for literary analysis, there are few of them in the abstracts of articles selected from the Web of Science database.

In the research context, scaffolding is frequently referred to as synonymous with support for learners to develop a new concept or competence (Muhonen et al., 2016). Scaffolding as a learning and teaching method is referred to in 4 papers.

One article refers to flipped learning. Flipped learning is a method that supports learners by prioritising active learning through lectures and presentations that can be reviewed outside the class. The flipped classroom is a teaching strategy that involves learning using ICT (Information and communications technology). In complement to

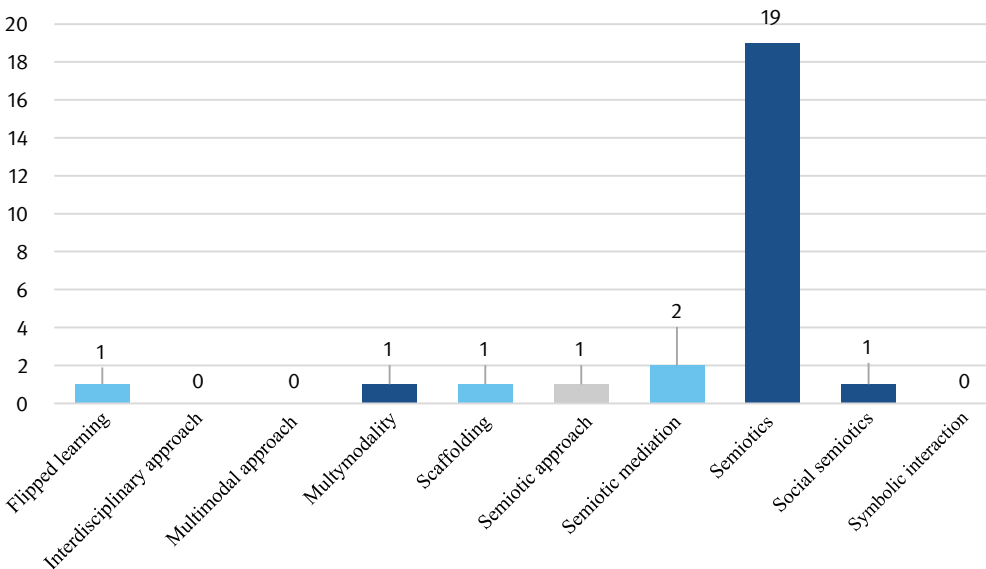
the flipped classroom method, learning activities are also integral to developing team-based competencies and skills to be accountable (Sojayapan, 2020).

Semiotic mediation as the method was found in 6 papers. Semiotic mediation involves an affected assessment of the object. *Semiotic strategies* are approaches that people use to mediate, construe and process unfamiliar signs. Mediated action reflects conceptually how educational actors exchange with artefacts, prior understandings, peers, and cultural environments, simultaneously affecting and modifying their cultural surroundings and practice (Wells, 1999). Looking upon the educational institution as a social construct in which practices constantly clash, the mediation of semiotics is continuously present, even if it is not named.

After analysing the abstracts, 18 articles were selected from the initial 167 articles. Two were rejected as irrelevant, and eight articles were added to the set of articles based on the nodes strategy. Twenty-two papers relate to social sciences, and 4 to humanities. Table 4 shows the relevance of the 26 articles in the previously mentioned categories (theoretical approaches, teaching and learning approaches, and teaching and learning methods) that were selected for further analysis.

A comprehensive review of the 26 selected papers indicates that theoretical approaches dominate. In the final phase of the literature review, all selected papers were reviewed for discussion.

Table 4 Comprehensive overview of selected papers.



Note. Reflection of overview columns colour in table:

- Theoretical approaches
- Teaching and learning approaches
- Teaching and learning methods

Authors believe that from perspective of a semiotic analysis there are important differences in how to view processes, including educational processes. All living beings are capable of meaning-making, but not all living beings are conscious of it (Konderak, 2021). Hans Belting in his essay “Bild und Kult: Eine Geschichte des Bildes vor dem Zeitalter der Kunst” (“Image and Cult: A History of the Image before the Age of Art”) suggests that art history declared anything to be art, including everything that falls within its field. Similarly, from a semiotic perspective, everything can be seen as a sign, so it can be analysed. Subjective experience is projected onto the objects of experience – concepts and meanings (Stankovic et al., 2009). As the educational actor is able to link two phenomena – the act of expression and its content – the ability to justify previously learned signs is developed. Elements of culture and education (and any experience) can be classified as semiotic constructs. Teachers and learners support their meaning-making processes by developing relationships with these elements (Stankovic et al., 2009) during teaching and learning processes.

Discussion

From the selected studies, it is not possible to clearly define or distinguish the spheres of semiotic influence. Semiotics in education science applies not only to theoretical but also to practical approaches that focus on the meaning articulation instead of the meanings themselves. The main aim is to reveal the meaning-making mechanisms (Batu, 2012). Hence these mechanisms are revealed in educational methods and approaches.

In education, semiotics is present in learning, memory, and knowledge, and is shaped by resources, competencies, access and support. (Campbell et al., 2020). These factors impact the cognitive abilities of the learners. Most of all – knowledge stimulates new knowledge acquisition. On the other hand, the teacher does not just add or change content. The teacher is also a social actor who interacts with learners through direct action (Jovanovic, 2019). Both the student and the teacher are involved in a mutual learning process. While the student learns from the teacher, the teacher learns too – this is what makes educational communication work (Olteanu et al., 2016), increasing the learner’s and the teacher’s cognitive abilities, which leads towards competence of iconic intelligence, memory improvement, adaptability, semiotic literacy and other competences that might be crucial for the development of educated future generations.

Looking at the modern curriculum, it is clear that it has constantly been changing and, therefore, forever contemporary. Changes in society and cultural practices shape the way educational actors understand the world and the meaning they give to different aspects of it. It challenges conventional views and beliefs, generating new paradigms particular to each cultural context. As an outcome, interpretations are exposed to transformation and can take on different connotations during given periods (Marchenko et al., 2022).

Contemporary developments in digital representation technologies provide a broad spectrum of options for teachers and learners to operate within, but there are always limited to predefined boundaries (Leone, 2020). It gives them the experience of using

a more comprehensive semiotic vocabulary to discover the meanings of science in their education process (Areljung et al., 2021), exchange and share these meanings. From a historical perspective, meaning-making circulation is moving at an extraordinary pace, not only in educational discourse but in general. What horizons and potentials it brings for education have made it easier than ever for educational actors to access a wide range of resources. With that, the range of subjects that can be given meaning has broadened. There are two different views among teachers on how to take advantage of semiotics mediation in education. One is that contemporary culture symbolises dissipation and a retreat from traditional values. On the other hand, some educators believe that contemporary culture and communication emphasise the links between contemporary developments such as consumption, global integration, communication technologies and cultural and political diversity (Kuru, 2012).

The relations between an object and its representation have been crucial in linking reality and representation. The object refers to material entities, while its representation is its expression (Ozlem, 2014). The portrayal of an item never fully reflects its true nature, and how we construct reality always includes a certain level of subjectivism. Furthermore, how we view objects is affected by cultural and personal factors and practices that shape how we interpret and represent them. The educator's interpretations and explanations may affect learners' meaning-makings and interpretations. By learning to analyse signs and symbols using both applied learning and teaching approaches and methods, learners can become more aware of the underlying meanings of the issues they face in their everyday experiences and question and reflect on these messages more thoughtfully.

Conclusion

Semiotics has been and is used in education to provide a theoretical basis for reading signs and symbols while teaching and learning approaches and methods implement these theories in the educational system. By studying meaning-making, educational actors can learn to recognise the different signs and symbols and interpret the meanings they convey. Theoretical approaches, teaching and learning approaches and methods are interrelated because they jointly address how meanings are constructed, transmitted and received. Research has shown that the competence to evaluate and formulate an opinion on current issues depends on the ability to interpret information. Semiotics can help develop critical thinking skills and cognitive competences, which are essential in the meaning-making process. Thus, the more educational actors analyse from a semiotic perspective, the more they develop cognitive skills that broaden semiotic perspective. The results of this review suggest that the role of semiotics in education should be further explored, with a critical review and narrative research proposed in the next phase.

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