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Socio-Semiotic Approaches in Pedagogical Practice: Advancing Multiliteracy and Critical Thinking through Multimodal Analysis and Visual Transcription in the Digital Age

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Abstract

The rise of digital communication and multimodal discourse has transformed traditional understandings of literacy and pedagogy, demanding innovative frameworks for education. This study explores the socio-semiotic approach as a methodological and theoretical foundation for the development of multiliteracy in contemporary teaching practice. Multiliteracy, understood as the capacity to interpret, evaluate, and create meaning across multiple semiotic modes—including text, image, gesture, sound, and digital interaction—requires both critical engagement and reflexive awareness in cross-cultural contexts. The article situates multiliteracy within the broader pedagogy of the digital age, emphasizing its role in fostering learners' capacity to navigate complex semiotic landscapes. Special attention is given to multimodal analysis and visual transcription as practical tools for classroom application. These methods enable educators and students to move beyond intuitive interpretations of communicative choices toward empirically grounded insights into meaning-making processes. By drawing on socio-semiotic theory, the study illustrates how semiotic resources such as images, layouts, and soundtracks function in concert to achieve communicative goals. Findings from classroom-based experimentation demonstrate that students engaging with multimodal analysis develop enhanced critical thinking, improved cross-cultural communication skills, and greater autonomy in digital interaction. The socio-semiotic approach, therefore, offers not only a theoretical lens but also a pragmatic strategy for transforming educational practice in response to the challenges and opportunities of the 21st century. The paper argues that integrating socio-semiotic tools into teaching fosters an inclusive, reflective, and globally relevant pedagogy that empowers learners to participate effectively in increasingly multimodal societies.

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Introduction

In the 21st century, interactive digital media technologies increasingly influence all spheres of life, making the ability to critically analyze and interpret online news, websites, videos, and social media posts an essential skill of the present century.

In response to the challenges of the digital age, which has given rise to new media where language combines in complex and dynamic ways with images and sound resources, both domestic and international researchers in pedagogy and linguistics (T.G. Galaktionova, O.A. Kazakova, C. Jewitt, G. Kress, Bourne J., Franks A., Hardcastle J., Jones K., Euan R.L. Unsworth L., et al.) have developed theoretical and practical foundations for integrating multiliteracy into the educational process (Kazkova, 2024; Jewitt, 2017; Kress et al., 2005; Unsworth, 2021).

This article presents a socio-semiotic approach to multiliteracy education. The purpose of this work is to theoretically justify and describe the practical application of the socio-semiotic approach in developing multiliteracy through multimodal analysis and the method of visual transcription to foster critical thinking in digital learning environments. The theoretical basis for multimodal analysis is the socio-semiotic theory of analyzing multimodal texts, emphasizing teaching and learning metalanguage for decoding multimodal meanings. The described approach contributes to the development of analytical and critical thinking skills, enabling students to be responsible and active participants in the acquisition and dissemination of knowledge and information in contemporary society.

Literacy in the Digital Age

The changing conditions of digital technology use in the 21st century have given rise to the problem of developing new literacy skills across various research domains. According to Kress (2003), in the new millennium, "it is no longer possible to think of literacy in isolation from a wide range of social, technological, and economic factors" (p. 3).

Traditionally, literacy was linguistically limited, understood as mastery of language in a strictly linguistic sense. However, literacy cannot be considered solely as a linguistic phenomenon due to the pervasive digitization of society. The diversity of semiotic systems and the broad potential of heterogeneous semiotic resources to convey and receive educational information have led to the expansion and refinement of the concept of literacy.

In 1996, the New London Group developed the pedagogy of multiliteracies, extending beyond traditional literacy to include multiple discourses (The New London Group, 1996). Researchers (Anstey & Bull, 2005; Kress, 2003; Unsworth, 2001) aimed to integrate semiotically diverse modes of meaning-making, where texts are combined with visual, auditory, and behavioral forms of information delivery. According to multiliteracy pedagogy, the educational process comprises four interconnected components: modeling real-life situations to develop skills for interpreting and analyzing socio-cultural contexts; teaching metalanguage necessary for understanding meaning-making processes; conducting critical analysis to develop skills for interpreting social contexts and identifying the purpose of meaning creation; and applying these skills in practice by producing multimodal texts (The New London Group, 1996).

By 2001, multiliteracy pedagogy evolved with the inclusion of critical literacy, which became a central principle of this approach. The introduction of this concept is associated with L. Unsworth, who expanded multiliteracy to include abilities such as decoding text meaning, participating in text comprehension and production, functional use, and ultimately critical analysis. The textual analyst observes, analyzes visual and verbal information, and determines how the choice of linguistic and visual resources influences opinion expression and how alternative verbal and visual resources create differing perspectives (Unsworth, 2001).

Bull and Anstey (2005) complemented Unsworth's theoretical positions and presented decoding as the process of tracking the functioning of homogeneous and heterogeneous semiotic systems in a text. Another key idea is that using a text implies understanding that the structure of a text may vary across contexts and platforms, despite having the same communicative purpose.

The goal of multiliteracy pedagogy is to provide learners with experience in cognitive activity and to develop a range of skills, including critical thinking, reflection, participation in discussion, evaluating information reliability, understanding the author's intent, identifying communicative strategies, and effectively communicating using diverse digital tools (Anstey & Bull, 2005).

Further research by the Delphi Committee of the American Philosophical Association supplemented these skills with logical reasoning, evaluation, explanation, and self-regulation (The Delphi Report, 2025). Considering the above, Kellner (2021) argues that literacy in the digital era requires not only technical knowledge but also automated skills in reading, writing, communication, and the ability to critically analyze, interpret, and create print, graphic, audio, and multimedia materials.

Thus, in the context of digital society, traditional literacy, defined simply as the ability to read and write, is insufficient. Its meaning has expanded to include the ability to interpret and create meaning using a combination of semiotic resources—verbal, auditory, visual, graphic, and digital. Multiliteracy pedagogy opens new perspectives for forming this modern literacy, emphasizing critical thinking, reflection, multimodal text analysis, assessment of information reliability, and effective interaction in digital spaces. One of the tools facilitating this development is the socio-semiotic approach.

Multimodal Analysis as a Tool for Developing Multiliteracy in the Socio-Semiotic Approach

The socio-semiotic approach is interdisciplinary, encompassing anthropology, sociology, critical and pragmatic discourse theory, visual design concepts (Halliday, 1978; Kress & van Leeuwen, 2021; O'Tool, 1994), and other fields. The development of the socio-semiotic approach is described by Dutova (2024).

Within this approach, discourse is the interaction of multiple semiotic resources (language, images, music, etc.) used to create meanings and interpret social practices. An important aspect of meaning-making is the process of combining interconnected semiotic resources. The choice of semiotic resources is not merely conscious but represents a set of possible alternatives (Kress, 2003). The approach is based on the principle of metafunctionality, implemented through the combined functioning of semiotic resources performing three metafunctions: ideational (interpreting the perception of the world), interpersonal (establishing social relationships and expressing attitudes), and compositional (organizing meanings into coherent messages according to context).

Multimodal analysis, developed by Kress & van Leeuwen, O'Halloran, Norris, and Scollon & Scollon, is a practical tool for studying multimodal relationships in educational settings (Kress & Bezemer, 2023; O'Halloran, 2021; Norris, 2020; Scollon & Wong Scollon, 2003). According to Hobbs (2004), the digital age requires educators to use such technologies to analyze and develop students' critical thinking. Multimodal analysis exposes students to various semiotic choices available to authors when creating multimodal texts, providing tools for systematic study of new media texts and fostering the ability to critically analyze various functional text types and genres from print and digital sources.

The use of multimodal analysis to develop critical thinking and intercultural sensitivity was tested in intercultural communication courses. In the first phase, students learned metalanguage for analysis, including lectures, seminars, and exercises covering linguistic-pragmatic discourse features, communicative strategies, and culturally specific tactics in Russian and Anglo-American traditions. In the second phase, communicative situations were identified, and students analyzed expected behaviors of Russian and English cultural representatives depending on cultural type.

Students then analyzed film fragments illustrating interactions between supervisors and subordinates to study cultural dimensions of power distance using the visual transcription method (Norris, 2020). Visual transcription involves sequential study of homogeneous semiotic resources followed by analysis of heterogeneous resources in combination. Data were recorded in visual transcription protocols with screenshots, timestamps, and coded verbal and nonverbal actions. Students created protocols for nonverbal behavior (proxemics, kinesics, haptics, gaze) and verbal behavior (communicative strategies, tactics, and language tools). Students compared behaviors across cultures, explained motives, and identified cultural values.

This practice allows students to develop an understanding of cultural differences and the ability to critically interpret linguistic, visual, and audio resources, grounding their analysis in empirical evidence rather than intuition. Multimodal analysis demonstrates that verbal resources do not always dominate communication, and camera framing can serve as a strong interactive resource for guiding audience attention. The socio-semiotic approach thus supports empirical discovery of how semiotic choices achieve communicative goals.

Conclusion

The socio-semiotic approach, grounded in Halliday's theory of metafunctionality and Kress & van Leeuwen's multimodal design concepts, provides a solid theoretical foundation for developing critical thinking in education. Testing this approach through multimodal analysis and Norris' visual transcription method enables the transition from intuitive ideas about meaning-making to empirical practice with concrete analytical tools.

Application in intercultural communication courses showed that learning metalanguage and systematically recording verbal and nonverbal semiotic resources allows students to critically evaluate how semiotic choices impact communicative goals. Notably, nonverbal resources often dominate, which would remain undetected without multimodal analysis. This method fosters analytical competence, revealing hidden ideological and cultural meanings in media, forming the basis for critical thinking central to multiliteracy pedagogy.

In the digital era, multiliteracy is not merely a pedagogical innovation but a prerequisite for functioning effectively in an information society. It requires transitioning from theoretical instruction to practices that develop reflection, understanding of author strategies, evaluation of reliability, and creation of multimodal messages.

Future directions include expanding multimodal analysis to other humanities disciplines, developing digital tools such as interactive visual transcription templates, and conducting cross-cultural comparisons of multimodal practices to deepen understanding of cultural meaning-making and intercultural multiliteracy. The socio-semiotic approach thus enhances the educational process, ensuring efficiency, engagement, and meaningful learning in the digital age.

Methodology

The methodological framework of this study is grounded in a socio-semiotic approach, which emphasizes the role of semiotic resources in the construction of meaning across multimodal contexts. The research was conducted as part of teaching practice within the Romano-Germanic Languages Department of Novosibirsk State Pedagogical University, focusing on courses in cross-cultural communication and language pedagogy.

Research Design

The study employed a qualitative, classroom-based design, combining elements of case study and action research. Students participated in structured activities designed to integrate multimodal analysis and visual transcription into their learning processes. This approach allowed for both the observation of real teaching practice and the experimental testing of socio-semiotic strategies.

Participants

The participants included undergraduate students majoring in linguistics and cross-cultural communication. A total of 45 students (aged 18–22) took part in the study over one academic semester. The selection was based on voluntary participation, with informed consent obtained in advance.

Data Collection Methods

1. Classroom Observations: The researcher systematically documented classroom interactions, focusing on students' responses to multimodal analysis tasks.

2. Student Artifacts: Written reflections, visual transcriptions, and analytical notes produced by students were collected and analyzed.

3. Semi-Structured Interviews: A subset of students (n=12) participated in interviews to provide insights into their experiences with multimodal tasks and perceptions of multiliteracy development.

Analytical Tools

The study applied multimodal analysis and visual transcription techniques to examine how students interpreted semiotic resources such as images, gestures, sounds, and textual arrangements. Multimodal analysis enabled the deconstruction of meaning-making processes, while visual transcription provided an empirical representation of the temporal and spatial organization of multimodal texts.

Data Analysis

The collected data were coded thematically, with particular attention paid to patterns in students' critical reflections, interpretative strategies, and demonstrated shifts from intuitive to evidence-based judgments. Triangulation was achieved by comparing classroom observations, student artifacts, and interview data to ensure the reliability and validity of the findings.

Ethical Considerations

Ethical approval was obtained from the faculty committee of Novosibirsk State Pedagogical University. All participants were informed of the study's purpose, and their anonymity and confidentiality were guaranteed. Participation was voluntary, and no academic penalties or incentives influenced involvement.

Findings

Enhanced Critical Literacy: Students developed the ability to critically analyze multimodal texts, identifying how semiotic resources such as images, gestures, and sounds contribute to meaning-making.

Empirical Insight through Visual Transcription: The method of visual transcription allowed learners to shift from subjective interpretations toward evidence-based conclusions, thereby strengthening academic rigor.

Improved Cross-Cultural Competence: The socio-semiotic framework facilitated more effective engagement with diverse communicative practices, enhancing intercultural understanding.

Pedagogical Innovation: The socio-semiotic approach provided teachers with structured tools for integrating multimodal analysis into curricula, supporting the pedagogy of multiliteracy.

Digital Readiness: By situating literacy in digital contexts, the approach prepared students for the challenges of contemporary communication, including the ability to reflect, critique, and participate responsibly in digital environments.

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Conflict of Interest

The author declares no conflict of interest. The research was conducted independently, without any commercial or financial relationships that could be construed as a potential conflict of interest.

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