



The Potential of Student Drawings to Investigate New Learning Contexts

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Abstract

This article presents student drawings as a data source for exploring new learning settings from the students' perspective. All drawings stem from the same assignment: students were asked to sketch themselves while learning in class. This task served as a prompt for reflecting on their relationship with the school environment. Methodologically, the analysis is based on the assumption that students can articulate and process critical or crisis-related elements through the act of drawing. Analyzing the drawings thus allows for the identification of both the potentials and the pitfalls of a given learning context and provides deeper insight into the specific learning situation. The study employs a qualitative-reconstructive research approach aimed at uncovering latent structures of meaning within protocols of spatially and temporally situated social practice. The methodological approach is outlined with respect to image analysis and illustrated through a selected case.

Keywords: *Research on teaching and learning, qualitative research, drawings, objective hermeneutics, student-centred*

1. Researching Lessons from the Student's Perspective

In the German [1] and international school context [2], there is an increasing trend towards the individualization of teaching and learning environments. Individualized instruction and individualized learning are conceptualized as responses to student heterogeneity—particularly with regard to interindividual differences in learning prerequisites, behavioral patterns, developmental stages, competencies, and cultural backgrounds [3].

Meeting these requirements necessitates comprehensive adjustments to structural framework conditions. These must be aligned both with the evolving learning settings and with the (learning) needs of students [4]. Schmidt and Tang [5] emphasize the potential of digitalization in shaping individualized learning contexts. The sustainable integration of digital elements into teaching is being actively promoted through educational policy within the European school context [6]. However, school systems tend to act reactively, which highlights the need for targeted adaptations [5].

Eickelmann [7, p. 55] concludes that the potential of digitally supported learning lies in the connection of diverse learning environments. Learning and instruction are no longer confined to the traditional school context but can instead be conceptualized in individualized ways. This applies to future mainstream education, in which phases of face-to-face instruction may be combined with distance learning or blended learning approaches. However, new learning opportunities also emerge for student groups who, due to a crisis situation (e.g., caused by displacement or illness), are unable to participate in regular classroom instruction.

Individualized instructional offerings are closely linked to the diverse needs of students [1]. In the development of new learning scenarios, the student perspective offers particular added value and can be regarded as a key starting point for instructional development [8]. At the same time, this perspective has so far received limited attention. Initial findings from the students' point of view, however, suggest that individualized, digitally supported learning contexts are perceived as more motivating than traditional classroom settings [9].

This article addresses this gap by illustrating the potential contribution of student drawings to the exploration of new, complex learning settings. Unlike in a student interview, drawings allow students to express experiences or emotions that they may not yet be able to articulate verbally—or of which they may only be partially aware [10, p. 11]. To illustrate the potential of the data, a case study from pandemic-related distance learning is used as an example, in which a student drew her individualized, digitally supported learning setting. The focus is on the student's self-positioning, which is initiated in the confrontation with the learning context and the people involved in it. The case is understood as a protocol of a subjective process of perception and selection [11], in which learning experiences are processed within specific structural conditions—such as institutional norms, value orientations, and



didactic frameworks. The aim is to develop an empirically grounded, in-depth understanding of this perception by identifying latent tensions and needs through the analysis. The interpretation of the drawing is accompanied by the following questions:

- How are learning demands perceived and interpreted? [12]
- What possibilities for self-positioning emerge for the student? [13]
- What critical elements can be identified in the student's self-perception?
- What potentials and pitfalls can be identified for the learning setting based on the case example?

The following chapter presents the data material in more detail and outlines possible approaches to theoretical field structuring (Chapter 2). Subsequently, the method of objective hermeneutics is introduced, and the interpretative procedure is exemplified (Chapter 3). The sketch is then analyzed in detail (Chapter 4), and based on the findings (Chapter 5), implications for instructional development in a specific context are discussed (Chapter 6).

2. Introducing the Data and Possible Theoretical Approaches

2.1 The Case Material Student Drawing

The student drawings were collected at German secondary schools. Approximately 180 drawings were obtained from regular classroom settings, supplemented by 80 drawings from special learning and instructional contexts. Data was collected at an international school, in a specialized program for gifted students, at schools with a strong focus on individualized instructional approaches, as well as in the context of pandemic-related distance learning. By always using the same drawing prompt - "Draw yourself learning in class" - the pupils are given the impulse to locate themselves in the social reality of the classroom. In doing so, they engage with the aspects and individuals that are significant to their personal interpretation of learning (e.g., because they are recurring, prototypical, liked or disliked) and reflect on the relational positioning they perceive with regard to these elements. The focus is thus on both a form of school-related identity construction and the identification of critical or crisis-related experiences [14, p. 7], [15, p. 16], [16]. Even the (often latent) selection of what to include in the drawing is shaped by experiences, moments, and elements that are irritating, preoccupying, and—in varying degrees—crisis-laden.

The data material is highly heterogeneous, and accordingly, the potential thematic and disciplinary focal points for analysis are diverse. The drawings reveal, for example, problems of understanding, attitudes, dispositions, and motivational aspects within specific teaching and learning settings. In addition, they reflect perceived forms of address by individuals involved in the instructional process, as well as varying needs for social belonging, support, or stimulation.

2.2 Conceptualizing the Self–World Relationship in the Context of Student Drawings

The structural framing of the self–world relationship must be further specified when analyzing a student drawing, depending on the research interest. The following reconstruction serves to illustrate the analytical potential of the data material in an exemplary manner, without pursuing a theory-driven empirical investigation of the individual case. Accordingly, no systematic theoretical grounding is provided. Instead, three theoretical approaches are outlined that allow for a differentiated consideration of the role of the institution, the didactic design, and the individuals involved.

(1) Bourdieu's theory of habitus [17] describes the deeply internalized patterns of thinking, perceiving, and acting that individuals develop through their social experiences. The habitus is shaped by the social milieu, as external structures are internalized over the course of the socialization process through a process Bourdieu calls "incorporation." It thus influences how people think, behave, and act in different situations. The way in which students draw—and what they choose to depict—is likewise shaped by their habitus. Bourdieu's concept is therefore particularly suitable for analyzing the societal as well as the bodily or embodied dimensions of self–world relations [15]. However, when it comes to student drawings, a limitation lies in the fact that only small segments—and thus fragments—of the habitus tends to be depicted. As a result, the concept has so far proven of limited value in analytical practice, or it requires more targeted forms of data collection.

(2) If the research interest is directed toward the examination of individual, psychological aspects of the self–world relationship, a theoretical approach via the concept of identity may be appropriate. According to Mollenhauer [18, p. 159], identity refers to the "unity of the manifold." In this view, identity is understood as a problem, since any unifying relationship of the self to itself can only be achieved at



the cost of significantly simplifying the diversity of its world relations. Identity is thus inherently unstable, as experiences may become relevant that have not yet been integrated into the individual's self-concept. Identity is therefore not an essential characteristic of a person, but rather the necessarily unstable result of a continuous process involving the synthesis and integration of difference [15]. To address identity in research, then, means to examine processes of identity development or constitution. With regard to the analysis of student drawings, identity-related approaches are particularly well-suited for exploring how the self (in a fragmentary and condensed form) is constituted in relation to the school environment. This form of analysis is especially promising when specific age or developmental stages are considered.

(3) The concept of "subjectivation" [19] also offers a theoretical point of access to the field—this time with a focus on questions of power. Subjectivation describes the ambivalent process by which an individual becomes an autonomous and agentic subject precisely through subjection to power structures. This process is illustrated through the mother–child relationship: the child gains the capacity to act through an act of subjection. However, a prerequisite for this is the denial of their own dependency. Butler's reference to the denial of attachment shows that the subject's self–world relationship necessarily contains moments of opacity and unavailability. Student drawings may offer insights into precisely these moments, as they can reflect latent—and thus unconscious—aspects of power-structured relationships.

3. The Use of Objective Hermeneutics in Interpreting Student Drawings

Objective hermeneutics, as a qualitative reconstructive research method, is well suited for investigating latent layers of meaning [20], [21]. Within German-speaking educational research, the method is well established [22], [23], [24]. Originally developed for the analysis of texts [20], the method can be applied to all types of protocols that represent a spatially and temporally situated snapshot. The interpretive procedure has been specifically adapted for the analysis of children's drawings by Scheid [25] and Münte et al. [16].

The method assumes that every expression contains structural meanings beyond what is consciously intended, which can be uncovered through sequential interpretation. This involves analyzing not only the explicit content, but also the implicit rules of social practice. The methodological procedure is guided by five principles of interpretation [21]: The first principle, *sequentiality*, requires that the interpretation strictly follow the order of events or elements as documented in the protocol. In the case of drawings, however, the student's representational decisions are perceived simultaneously [16]. An obvious chronology, as found in a text, is not present. Nonetheless, the principle of sequentiality can still be applied—for example, by interpreting the image along an imaginary line that guides the analytical gaze through the drawing [26]. The reconstruction then focuses on specific units of meaning that emerge from the interplay of visual elements [27].

The second principle, *literalness*, states that the text must be examined with a level of precision that would appear overly meticulous in everyday interpretive contexts. In image interpretation, this principle entails a close examination of even the smallest details, including erased or redrawn elements that have been erased.

The third principle, *context independence*, demands that knowledge about the context in which the protocol was produced initially be set aside. Only after a context-independent explication of meaning has been conducted [21] may contextual information be methodically reintroduced. In the analysis of student drawings, this means that the fact that the image depicts a student drawing themselves must first be deliberately bracketed out. Only in the course of the analysis is it to be reflected upon what it might mean when a person portrays themselves in a specific way.

The fourth principle, *extensiveness of analysis*, requires that the reconstruction of structural logic encompass the entirety of the object [21]. In the context of image analysis, this means that all "expressive relations—such as formal and color-related connections, homologies, oppositions, symmetries, etc."—must be systematically examined [10, p. 202]. The interpretive process in objective hermeneutics proceeds through so-called readings, in which multiple interpretations or meanings are proposed for a given text or image sequence. These involve telling hypothetical stories in which the analyzed detail might appear and gain significance. The fifth principle, *economy*, stipulates that only those readings and stories be considered that are clearly compatible with the text or image. Stories that appear unlikely are not pursued further in the analysis.

For the interpretation of student drawings, it is also essential that structural regularities perceived in certain objects can be detached from their original context and reassigned a new "function" in the process of meaning-making when applied to depicted elements [28, p. 287]. It is precisely this



retribution of a structural regularity that must be examined and reconstructed in terms of its significance.

The interpretive process should be preceded by a detailed description, which serves as the basis for segmentation and sequential analysis. However, for pragmatic reasons, the following chapter—focused on the interpretation of a student drawing—concentrates solely on the level of meaning and omits descriptive elements.

4. Analysis of a Student Drawing from a Digitally Supported Learning Setting

The following student drawing was selected for analysis (see Fig. 1). The drawing has been reduced in size for this publication; the original was created on a standard European A4 sheet. It was created by a female student in the 12th grade at a secondary school (Gymnasium) in Rhineland-Palatinate. In the drawing, she portrayed herself learning during distance education in the context of the COVID-19 pandemic.

Figure 1: Student Drawing



A sequential presentation of the interpretation cannot be provided at this point, as it would exceed the scope of this article. Instead, the central findings are presented, with an emphasis on ensuring that the results are conveyed as transparently and comprehensibly as possible.

The sketch meets the formal criteria of visual composition. The perspective guides the viewer's gaze into the image from the lower left. The shaded lines and stroke quality are reminiscent of fashion sketches or exercises from a drawing manual. This suggests that the person who created the drawing already possesses some drawing experience and a certain level of maturity.

In the sequential analysis, a table, a stool, and a window with a curtain were identified as space-defining elements of the scene. The stool and the curtain share a sweeping line design that suggests a certain dynamism and flexibility of the objects. Both are furnishings typically associated with private spaces—such as a hotel room, bedroom, or children's room. In contrast, a voluminous curtain would be rather uncommon in a public office setting. The workspace situated within the private setting thus appears improvised.

Particularly striking is the tight framing of the composition: the depicted furnishings appear as a single, cohesive object. No further drawings marks are visible outside this frame, making the scene resemble an isolated excerpt from a private space. The window and the desk blend seamlessly into one another, indicating a conceptual connection between the formally arranged workspace and the window. This gives rise to several possible interpretations: the curtain and the window create a distinction between the private interior and the public exterior. The curtain assumes a regulatory



function by controlling visibility from the outside. An additional reading of the shape of the window and curtain—repeatedly discussed in internal interpretive workshops—suggests an association with a theater stage. According to this interpretation, the scene could be understood as a staged performance intended for a public audience. What both interpretations share is a latent tension between the private and the public sphere, which necessitates deliberate and regulated intervention.

The person who created the drawing has placed herself at the center of the scene. The figure appears slim and feminine and is depicted from behind. Although the depiction offers certain clues about her identity, she remains anonymous to the viewer. The silhouette, along with the slightly inward-angled arms at the shoulders, suggests formal clothing—a kind of business attire. The figure is seated with an upright posture; the body is neither slouched nor leaning. The closely held legs convey a sense of social decorum. Formal attire and a consciously upright, active posture are typically associated with professional contexts and the adult world. The figure appears to be engaged in a social action in which she is highly visible. She is depicted as confident and articulate. The person is thus staging herself as competent in carrying out specific tasks within a professional environment.

In addition to the furnishings, four further objects were identified. On the right side of the desk lies a notepad. Taking notes or keeping written records is a firmly established ritual in professional settings. The written documentation of thoughts or conversation content conveys a sense of commitment and reinforces the formal character of the scene. The activity appears serious, suggesting the need for a structured process.

Moreover, a total of three different digital devices are depicted. A simple rectangle with a dot at the bottom symbolizes a smartphone. At the center of the desk is a laptop, and to the left of it, a tablet. The depiction of these devices indirectly points to the digital sphere and the associated scope for action. Notably, the same symbol appears on all three screens. The analysis reconstructed this as an indication of an identical use process taking place simultaneously on all three devices.

At the top edge of the laptop frame, a small dot is depicted with lines radiating outward. This symbolizes an active camera transmitting the image of the figure into a digital space. Small stick figures can be seen on the screens of the devices, indicating a video call as the depicted activity. The fact that this interaction appears to be managed across three devices suggests that the participants are not located within a shared digital environment, but rather that the content of the interaction must be brought together from different sources. The interaction thus appears as a complex act requiring the coordination of multiple communication channels. In this context, the depicted space takes on the character of a control center, in which the figure is surrounded by digitally communication. At first glance, the sketch gives the impression that the figure occupies the center of the composition. Upon closer inspection, however, it is the laptop that forms the iconographic center [29] and is staged with particular emphasis. The action is thus staged just as deliberately as the figure itself.

5. Understanding the Self in the Learning Environment and Its Analytical Potential

The drawing points to the possibility of renegotiating privacy within digitally supported learning settings. Traditionally, school and classroom are spaces of social encounter and exchange, offering a wide range of opportunities for personal expression. In digitally supported lessons, these opportunities for expression are expanded to include the conscious staging of private areas of life vis-à-vis teachers and classmates. In the case study, the tension between public and private, between visibility and anonymity is a recurring theme. Insights into the private living space seem to require protection and regulation, access must be limited or deliberately staged. The reconstruction thus points to critical aspects of the learning setting: opening up the private sphere can - beyond the case study - be experienced as challenging or even crisis-ridden in certain situations.

In the reconstruction, it is particularly noticeable that the student did not interpret the painting assignment to depict learning in the sense of a technical content-related discussion - references to school learning content are completely absent. Instead, the depicted action refers to certain skills - medial, social and technical - which become visible as implicit requirements in the learning setting. The testing and execution of these skills seems to influence the student's self-interpretation: It opens up the opportunity for her to experience herself as competent in a job-oriented role ascription. Building on this, existing self-perceptions can be revised or redesigned. The sketch can therefore be interpreted as an expression of a self-concept in the process of transitioning into the adult world. A digitally supported learning setting promotes this process by enabling the practice of job-related skills in a much more intensive and complex way. Coordination and moderation not only concern interaction in the physical space, but also encompass the digital learning worlds of all participants, which must be linked and synchronized with one another.



The sketch lacks not only any reference to subject content but also any indication of a school context—such as characteristic objects or symbols, typical hierarchies, specific roles, educational design elements, or linguistic markers. At no point in the interpretation could a school-based framework be reconstructed; instead, a professional context remained as a possible reading. This indicates that the cultural and social practices of school education do not appear to be present in the learning situation depicted. Nonetheless, normative orientations become apparent: the scene points to expectations of focused, socially embedded, and structured work. The posture of the figure also underlines the seriousness of the activity and indicates the acknowledgment of these implicit norms. The learning setting thus appears as a transformed learning space, where changing normative expectations are linked with new opportunities for action and self-positioning.

Especially within the framework of interpreting the sketch as a theatrical performance, it is notable that the staging includes the student herself in a performative act. She takes on the role of a professionally competent person but simultaneously distances herself from this role, as it is clearly staged rather than authentic. On a latent level, a tension arises that is not necessarily negative: on the one hand, the performance offers the opportunity to experience oneself as competent in vocational tasks; on the other, it necessitates the portrayal of a profile that exceeds the student's current status—an image of the self that must still be grown into.

6. Potentials, Implications, and Limitations of Researching Student Drawings

The objective hermeneutic analysis of the drawings reveals subjectively interpreted and experienced potentials as well as pitfalls within a learning situation, reconstructs their structural conditions, and thus contributes to a case-specific understanding. It thereby provides a solid foundation for the design and optimization of educational settings.

The drawing was collected in the context of pandemic-related school closures. Nevertheless, the findings provide valuable insights for the design of digital learning scenarios within regular school settings. The empirical results can be used to optimize learning environments in which students work on projects across different learning locations. In addition, the findings are also relevant for the development of digitally supported educational programs for young people in crisis situations—especially for those who are unable to participate in regular classroom instruction.

It is particularly noteworthy that the reconstruction highlights the aspects of the learning situation that are perceived as significant by the student [30]. The interpretive potential of the student drawing thus points to key elements of a reciprocally understood teaching practice, in which learners can actively participate in shaping learning situations [31, p. 190].

Unfortunately, no further information is available regarding the specific didactic design of the depicted learning setting. Based on the sketch, only general framework conditions can be reconstructed—such as the private learning environment and the digitally mediated connection, which suggests a high degree of social interactivity. In this context, digitality appears to function as a bridge between different learning locations. For the purposes of this article, this framing is sufficient, as it allows for initial insights into the self–world relationship within digitally supported learning settings. If specific didactic information is available for a learning situation, it can be purposefully integrated as contextual knowledge (see Chapter 4), thereby enabling more differentiated findings. Comparative case analyses also prove to be constructive—or indeed necessary—for gaining a deeper understanding of specific learning situations.

It must be noted as a limitation that, despite the outlined potentials, many questions remain open in the drawings and cannot be clearly answered within the framework of the reconstruction. For example, the case study analysis was unable to determine which media-related or technical prior experiences the student already possessed—an aspect that appears to be fundamental to learning success in the depicted setting.

The role and significance of the viewer were also not sufficiently addressed in the reconstruction. The sketch was created within the context of a scientific study; the student addresses the researchers as recipients. At the same time, the drawing contains a form of feedback directed toward the school and its teachers. Future analyses could specifically explore the dimension of address in student drawings by examining how students perceive themselves as being addressed within a given learning setting [32]—and how they, in turn, re-address the individuals involved in the teaching process, including at a latent level.

In joint interpretation sessions, digital equipment features were repeatedly interpreted as symbols of culturally objectified forms of capital [33]. However, the evidence in the present analysis remains inconclusive in this regard, suggesting that future studies should also give targeted consideration to



the material starting conditions of learners. Although the data material is therefore to be regarded as highly promising, further targeted, in-depth, and complementary analyses are needed to approach specific learning settings in a well-founded empirical-hermeneutic manner.

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