




Demands and design principles of a “heterodox” didactics for promoting critical thinking in higher education

Annette Ostendorf¹ · Michael Thoma¹ 

Accepted: 9 August 2021 / Published online: 27 August 2021

© The Author(s) 2021

Abstract

Following on from the already wide-ranging academic discussion about fostering critical thinking in students as an important component of a university’s educational mission, this paper takes a particular look at didactic principles for fostering this critical thinking. We begin with a reception of Abrami et al.’s (2015) comprehensive meta-study of higher education interventions that are successful in promoting critical thinking. It becomes apparent that an understanding of criticism, which we refer to as “conventional” has been used throughout. However, there are alternative designs of an understanding of critique and critical thinking. We therefore subsequently explain an understanding of critique that is oriented toward poststructuralist thought and is referred to as “deconstructive”. Didactic principles that can be called “heterodox” are presented, which are suitable to promote a critical thinking ability in the light of the poststructuralist-inspired concept of critique. These principles are not only theoretically negotiated, but also vividly explained by means of a concrete intervention in university teaching. The article concludes with reflections on the connection of “conventional” and “heterodox” didactic principles for the promotion of critical thinking and gives impulses for the further development of university teaching-learning arrangements.

Keywords Critical thinking · Critical literacy · Higher education · Poststructuralism · “Heterodox” teaching

✉ Michael Thoma
michael.thoma@uibk.ac.at

Annette Ostendorf
annette.ostendorf@uibk.ac.at

¹ Universität Innsbruck, Universitätsstraße 15, A-6020 Innsbruck, Austria

Introduction

The internet age can be characterized by an “inflated production of social stocks of knowledge” (Müller & Stravrovadis, 2007, p. 10). To assess and evaluate the flood of information and knowledge, individuals must increasingly rely on themselves and their critical judgment. However, it is precisely this critical thinking ability that seems to be increasingly insufficiently developed, despite repeated demands coming from various sides. This is also the case in higher education (Davies & Barnett, 2015).

Following from this demand, it is necessary to draw attention to the intense research on the development of critical thinking that has been conducted for many decades, particularly in the higher education sector (Chad et al., 2015; Culver et al., 2019; Davies & Barnett, 2015; Wang et al., 2011). Davies and Barnett (2015, p. 6) distinguish three rival perspectives regarding CT in higher education: a philosophical one oriented toward logic, language, and metacognition; a pedagogical one that takes a perspective focused on the individual and interested in the development of a critico-social attitude; and a socially active perspective that includes aspects of critical pedagogy and critical citizenship, which is more concerned with the transformation of society. We capture aspects from each of these three rival perspectives but see our contribution primarily in the educational tradition with a special focus on didactic principles for designing teaching-learning arrangements in higher education.

A widely renowned meta-study by Abrami et al. (2015) comprehensively evaluated the existing research landscape on promoting critical thinking and described the effect sizes of the corresponding teaching interventions. In our paper, some of the interventions described as particularly effective are taken up, and their didactic principles are captured. They are all based on what we refer to in our paper as a “conventional” understanding of critique, which centers on promoting reflective thinking and rational decision-making skills. Ennis (2018, p. 166) sees this as the mainstream of the debate. “Each is a different way of cutting the same conceptual pie, which I hold to be the mainstream concept of critical thinking.” We seek to distinguish ourselves here by identifying an alternative poststructuralist understanding.

In doing so, we differentiate between more “conventional” and deconstructive understandings of critique, which require correspondingly different forms of intervention to promote CT. For the latter, a didactic implementation seems to be rather challenging. Abrami et al. (2015, p. 278) state precisely concerning the practical implementation of teaching-learning units starting from a deconstructive understanding of critique: “It is difficult to say exactly how an approach like this would translate into CT teaching practice, but at any rate, a deconstructionist approach would imply a style of CT that would depart dramatically from most of the studies synthesized in this meta-analysis.”

Taking this up, we aim to show how critical thinking can be promoted in a very concrete way in teaching arrangements based on a poststructuralist understanding of critique. In this respect, our paper is primarily a conceptual contribution to the didactics of university teaching.

Furthermore, this is not only discussed theoretically but also substantiated by presenting a concrete university intervention as an example. In particular, specific didactic principles of interventions are outlined, which are called “heterodox” because they exceed “conventional” patterns of interpretation and promoting critical thinking.

In this context, our research questions are the following:

Against the background of a poststructuralist understanding of critique, which “heterodox” didactic principles for promoting critical thinking can be described for university teaching, and how do they relate to “conventional” didactic designs?

Didactic principles include teaching strategies as well as the implementation through teaching methods and teaching media. In didactic designs, we assume an interdependent relationship between goals, content, methods, and media. However, their translation and adaptability to *specific* contexts cannot be addressed here. Thus, it is a matter of rather general didactic principles that must be interpreted according to the specific situation in universities’ teaching practice.

The promotion of critical thinking in the context of a “conventional” understanding of critique

In a democracy-based knowledge society, the concept of *Bildung* as a reflective ability to judge and act addresses the question of the promotion of critical thinking, which has been the focus of research efforts in education since John Dewey, especially since the publication of his work *How We Think* (Dewey, 1910/1951). Critical thinking is often linked to problem solving or creative thinking—prominent, for example, in the OECD, which considers critical thinking to be a twenty-first century skill (see Anaiadou & Claro, 2009) and also in the economic context as a requirement for employees (see Bandyopadhyay & Szostek, 2019). The scientific discussion about the construct of critical thinking and its importance for didactics has been summarized in a comprehensive meta-study by Abrami et al. (2015), which is considered highly relevant (e.g., Hetmanek et al., 2018; Rafolt et al., 2019). From a pedagogical perspective, the central result is the pleasing observation that critical thinking can be *taught* in principle.

In a meta-analysis of 341 scientific (empirical) contributions to critical thinking (published between 1930 and 2009) and a didactic promotion aimed at this, positive strengths of the effects of instruction could be demonstrated: “At the most general level, this analysis clearly reveals that a variety of CT skills (both generic and content specific) and dispositions can develop in students through instruction at all educational levels and across all disciplinary areas using a number of effective strategies” (Abrami et al., 2015, p. 301f.). The effects were particularly strong for teaching-learning arrangements that featured a combination of classroom discussions, authentic experiences, and examples, as well as mentoring. Mentoring has proven to be a catalyst with few effects on its own, but that has a strong supportive effect when combined with discussions and authentic instruction. This combination was particularly evident in three high-impact interventions by Yang et al. (2008), Arrufat (1997), and Pellegrino (2007) (Abrami et al., 2015, p. 302f.). The following didactic principles of design are of special importance in the three interventions:

- The need for *guiding and framing* students’ activities: The promotion of critical thinking requires guidance in the educational process. This can take various forms, such as interventions by teachers in the form of discussions on online learning platforms or counseling, but also by assigning tasks. The promotion of critical thinking skills requires scaffolding in the sense of Vygotsky (1978). Learners need support in the promotion of critical thinking, and their zone of proximal development needs to be opened up through

guidance. Self-organized learning is only successful here in a guided learning environment.

- Experiential orientation: All three examples are based on enabling *authentic experience*, either by working on a problem or simulating quasi-actions (case studies, role plays).
- The emphasis on *active participation in a group setting* is also apparent. Activity-based teaching methods are used (roleplays, case studies).
- A *research-discovery attitude* of the students seems to be beneficial (Pellegrino, 2007).

The meta-study findings and the conclusions drawn from the three very effective interventions already show some principles of design for teaching-learning arrangements to promote critical thinking.

However, the study by Abrami et al. (2015) is not the only meta-study dealing with this topic. Publications on critical thinking in higher education were also examined in other meta-studies (e.g., Lorencová et al., 2019; Niu et al., 2013; Pithers & Soden, 2000). Lorencová et al. (2019) examined 39 articles in more detail concerning teaching methods. They were able to summarize the following aspects that were described as helpful in promoting critical thinking (see Lorencová et al., 2019): explicit instruction and guidance, the importance of guiding questions and techniques, active participation and collaboration of learners, clarity of goals, and longer duration of the intervention.

However, all of these quite successful interventions are based on a *certain* kind of interpretation of critique and thus on a specific conception of critical thinking.

What does critical in critical thinking mean?

The “conventional” version in the mainstream

In the scientific discourse, the definition of critical thinking is often based on a Delphi study with 46 experts conducted in the USA some 30 years ago (Facione, 1990). The Delphi study was commissioned by the American Philosophical Association (APA). The study by Abrami et al. (2015) also uses it to identify the scientific papers to be included in the meta-study. It is also the basis for the particularly effective didactic interventions mentioned above. Critical thinking is defined as follows:

“We understand critical thinking to be purposeful, self-regulatory judgement which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgement is based.” (Facione, 1990, p. 3)

This definition shows that critical thinking is primarily seen as an individualistic cognitive act. The aim is to achieve higher levels in the cognitive taxonomy developed by Anderson et al. (2001). Considering the core skills identified in the Delphi study, a very differentiated interpretation of critical thinking as a skill emerges (Fig. 1).

What also seems interesting is how the ideal critical thinker is described, since this reveals a specific interpretation of the concept of critique: “The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgements, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in

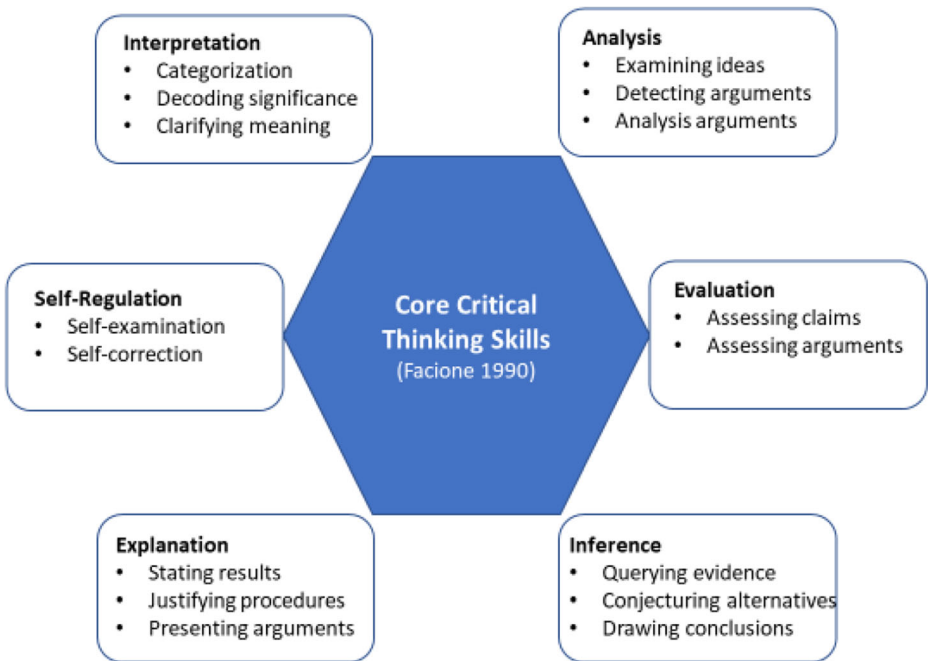


Fig. 1 Core critical thinking skills (drawing on Facione, 1990, p. 12)

inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit.” (Facione, 1990, p. 3)

The ideal critical thinker is open, flexible, and reflexive, but also faithful in the sense of trustful of reason, reliable in their perception, and focused on results. Reflective decision-making and orientation toward scientific epistemology seem to be predominant. Furthermore, critical thinking is interpreted as an autonomous individualistic act that is not (co)determined by the socio-cultural context. Critical thinking in an interpretation described here as “conventional” is furthermore based on a certain conception of truth, which is oriented toward a metaphysical-correspondence-theoretical understanding. Such an understanding is based on factual truths that can be discovered and judged in their truthfulness through criteria. In this respect, the concept of truth includes certainties. It is about identifying problems and their basic assumptions; analyzing, understanding, and drawing conclusions; and discerning the logic, reasoning, and assessment.

In the “conventional” interpretation of the concept of critique, the modus in which knowledge about knowledge is generated, a skeptical attitude toward the production and dissemination of knowledge, and a reflection on the powerful effects that unfold the criteria by which the truth is distinguished from the false are more or less completely faded out.

When we refer to the contributions that primarily focus on this as “conventional”, we are well aware that the spectrum of interpretations is also diverse here (see also Bailin et al., 1999; Moore, 2013). Nonetheless, Ennis (2018, p. 166) notes a large overlap in the interpretation of what has been discussed as the concept of CT over the past 30 years, namely all focus on reasonable reflective thinking and decision-making.

A poststructuralist counterpart on the notion of critique

Abrami et al. (2015) emphasize in a self-critical manner that their study only refers to publications that can be assigned to the context of critical thinking (Facione, 1990) in the sense of the APA definition. The authors mention that there are also critical voices in this regard, for example, concerning the integration of affective competencies or more fundamentally related to the underlying concept of critique. While the former concerns a rather unobjectionable, curable problem of the encompassing inclusion of aspects, the remarks on the concept of critique are substantial and fundamental. Abrami et al. (2015) refer to a publication by Biesta and Stams (2001), in which, among other things, *two approaches* to criticality are discussed, namely “critical dogmatism” (to which the meta-study attributes itself) and “Derridean deconstruction”, which can be attributed to poststructuralism.

Basically, it can be said that poststructuralism does not represent a self-contained and consistently stringent theoretical complex but functions as a label to which different concepts, especially those of French philosophers, can be attributed. Thus, deconstruction (Derrida), discourse analysis (Foucault), or the concept of the rhizome (Deleuze) are conceptual tools that, despite their differences, are ultimately based on similar premises.

Poststructuralist thinking distances itself from an interpretation of language as a system of conveying sense. Rather, language is seen as a “network of signifiers referring to each other” (Quadflieg, 2008, p. 105), which *generates* meaning and sense in the interplay of the differential relationship of signs. This rejects the notion of a correspondence between words and things. Rather, the *productivity* of linguistic signs and thus ultimately their reality-constituting effect is addressed.

According to Biesta and Stams, critical dogmatism has to deal with the scientific theoretical problem of the final justification of selection and, thus, with a totalization reproach, since no external selection criterion can be justified. They emphasize that “thinkers who hold this position reflectively actually stop at this point and make a deliberate choice to hold to their criteria ‘dogmatically’ since no further justification is possible” (Abrami et al., 2015, p. 278).

Under the Core CT Skills of the APA in the category of “interpretation”, there is the ability of “decoding significance” in the sense of “to detect, attend to, and describe the informational content, affective purport, directive functions, intentions, motives, purposes, social significance, values, views, rules, procedures, criteria, or inferential relationships expressed in convention-based communication systems, such as in language, social behaviors, drawings, numbers, graphs, tables, charts, signs and symbols.” (Facione, 1990, p. 14) Looking at the illustrative example given here, it is noticeable that decoding refers to the act of communication and the authors’ intention and that a close correlation of sign and meaning is assumed. To concretize these core skills, an example is given:

“To detect and describe a person’s purpose in asking a given question; to appreciate the significance of a particular facial expression or gesture used in a given social situation; to discern the use of irony or rhetorical questions in debate; to interpret the data displayed or presented using a particular form of instrumentation.” (Facione, 1990, p. 14)

It becomes clear that the focus of critical dogmatism is very much on clarifying the intention of the author(s). This does not correspond to a poststructuralist understanding of language, which—as described above—distances itself from the interpretation of language as a system for conveying sense and regards it as a “network of signifiers referring to each other” (Quadflieg, 2008, p. 105).

We understand Derrida's deconstruction, to which Biesta and Stams (2001) refer as an alternative approach to criticality, as a "poststructuralist position of analysis" (Diaz-Bone, 2015, p. 83). As such, it does not correspond to a specific methodology¹ but is rather a "sense-destructing" treatment of the text, which "seeks to show alternative interpretations as well as openness to interpretations that result from differences and difference effects" (Diaz-Bone, 2015, p. 83). Deconstruction thus aims primarily at making visible the invisible, the excluded, and makes precisely the activity of the "open up" (Derrida, 1987, p. 261) the foundation and reference point of critique. Such a poststructuralist-oriented criticality, however, receives little attention in the majority of these studies.

Our own—poststructuralist-oriented—understanding of critique is characterized by Derrida (1976) and the discourse-theoretical assumptions of Foucault (1989a, 1989b, 1978). In our view, such a poststructuralist-informed understanding of critique can be outlined in the following points:

- Critique does not refer to the category of "truth" in the sense of a "being true in knowledge" (Foucault, 1989b, 3). Rather, it addresses the mechanisms and effects according to which "the true" is distinguished from "the false" (Foucault, 1978, p. 53).
- Critique does not strive for a transition to sovereign superiority because it is itself aware of its entanglement in power relations and its potential appropriation. This takes into account the notion that the exercise of criticism also takes place in a (social) power-knowledge complex.
- The practice of critique primarily addresses the performativity of language/signs. Critical thinking is based on the assumption that things could be different and can be changed. A central question in the exercise of critique is thus directed at what a text does in what way and with what effects?
- The realization, the exercise of such a critique, is to be understood as *practical* work—as the practice of critique. As such, it does not stand on a solid ground above the things it observes and judges with prefabricated categories, with a fixed gaze from above. As a permanent work, it turns to things in a doubting, questioning manner. It crosses, thwarts, dissects, and thereby constantly readjusts its gaze and ultimately has to question itself and thus permanently puts itself at risk.
- Such a critique is carried out by an attitude that could be described as productive mistrust. This attitude leads to the questioning of evidence, of the seemingly naturally given, rational, or normal things to "take away the deceptive familiarity of things" (Veyne, 2010, p. 119) and to gain distance from them.

The understanding of critique that has just been unfolded can thus be classified according to Barnett's (2015) systematization on level 4 (transformative critique), whereby Barnett emphasizes that comprehensive *Bildung* must address the development of the whole person at all levels and domains of criticality. Criticality goes beyond critical thinking and "(...) holds out a sense that higher education can become (more) a process of radical development than merely a cognitive process." (Davies & Barnett, 2015, p. 17)

According to our understanding, a deconstructive form of critique particularly takes an aspect into account that is not very explicitly referred to in "conventional" understandings of

¹ Deconstruction is not a method (see also Biesta & Stams, 2001) that can be applied but rather an attitude. In this respect, the term "method" is only used in this paper concerning possible applications in teaching methods.

critical thinking. Research on the development of critical thinking abilities has shown that the ways individuals perceive and conceptualize “the nature of knowledge” and “the nature of knowing” (Hofer & Pintrich, 1997, p. 119f.) are central to the “quality” of critical thinking abilities. These aspects are discussed under the label of “epistemological beliefs”. The concept describes “individual representations about knowledge and knowing” (Mason & Bromme, 2010, p. 1). The relevant literature distinguishes in general between low levels of epistemological beliefs—in which knowledge is conceived as certain, absolute, a comparatively static accumulation of facts—and higher levels of epistemological beliefs, in which knowledge is assumed to be uncertain, changeable, and constructed (Hyytinen et al., 2014, p. 4; for a comprehensive review and discussion of epistemological theories and models, see Hofer & Pintrich, 1997). Although the empirical findings in the field of epistemological beliefs are not consistent, especially with regard to the question of domain specificity (Bromme, 2005) or the confounding of age and educational level (Schommer, 1998), there is consensus that the development of higher levels of epistemological beliefs is significantly related with the improvement of critical thinking (e.g., King & Kitchener, 2004; Kuhn & Weinstock, 2002).

It is precisely the promotion of “knowledge about knowledge” (and thus the development of higher levels of epistemological belief) that is a more explicit aim of our didactic approach.

In the following, we will describe how our deconstructive understanding of critique can be translated into a didactic arrangement. For this purpose, we refer—in a first step—to the concept of critical literacy, which serves us as a bridging concept for the didactic translation of our understanding of critique into a didactic design.

Critical literacy as a bridging concept for developing didactic designs to promote criticality in a poststructuralist sense

As mentioned in the “Introduction” section, the translation of a poststructuralist deconstructive understanding of critique into concrete teaching-learning arrangements is estimated to be very difficult (Abrami et al., 2015, p. 278). A conceivable alternative to describe the aim of criticality is an approach that can be regarded as an “umbrella term”, which is subsumed under the label of critical literacy. From our point of view, the reference to this concept seems to be fruitful, because critical literacy is connectable to our poststructuralist approach, and it allows a “translation” of our (more or less abstract) deconstructive understanding of critique into (concrete) didactic arrangements. As will be described in the following, the concept of critical literacy offers a specification of the understanding of critique based on comparatively more tangible categories. It conceptualizes criticality not only as purely cognitive acts, but as a competence (in the sense of an ability to act critically) and, in this way, also takes into account the socio-economic context in which criticality develops. Moreover, critical literacy is strongly focused on working with texts and the stocks of knowledge that can be found therein to promote “a stance toward texts, discourses, and social practices.” (Rogers & Mosley Wetzel, 2014, p. 7)

The academic discussion about critical literacy as “a perspective for teaching and learning” (Vasquez, 2017, p. 3) covers a wide range of different educational processes—ranging from early childhood education to the field of schooling and adult education (for a short overview of work in critical literacy education, see f.e. Rogers & Mosley Wetzel, 2014; Vasquez, 2017). Work on critical literacy can also be found in the field of higher education, with a focus on

studies in teacher education (Mosley, 2010; Rogers, 2014) and research on university courses, where English is taught as a second or foreign language (for an overview, see Fajarado, 2015).

Also, the theoretical frameworks of the concept are comparatively heterogeneous. Following a—somewhat abbreviated—description, two main theoretical references can be identified, each of which guides the (scientific) debate as well as the concrete design of the construct to varying degrees (Luke, 2012; Marsh et al., 2005). A significant influence stems from the social critique of Paolo Freire’s Marxist-influenced critical pedagogy, but there are also works with theoretical references from poststructuralist philosophies.

Regardless of the theoretical orientation, critical literacy aims at “understanding the relationship between texts, meaning-making and power to undertake transformative social action that contributes to the achievement of a more equitable social order.” (Janks & Vasquez, 2011, p. 1) Central to this is a comparatively broad understanding of text that goes beyond traditional connotations (in the sense of analogous written material) and is extended, for example, to digitally published texts of various genres, but also to oral text or graphic text.

The concept of critical literacy seems particularly suitable for giving orientation to the contemporary subject of the present given the omnipresence of text in a digital society and thus the permanently multiplying opportunities and necessities for experiences of information, knowledge, and truth. This orientation mainly involves addressing “knowledge about knowledge” and, through this, stimulating a critical and reflective examination of social stocks of knowledge. The promotion of “knowledge about knowledge” is precisely the overarching aim of our deconstructivist approach, which ultimately aims at further development of epistemological beliefs and, via this, can contribute to an increased criticality.

In a summary review based on an analysis of the critical literacy literature (definitions that appeared in the research and professional literature over 30 years), Lewison et al. (2002) undertake a synthesis of four strongly interrelated dimensions that appear to shape the construct. In all four dimensions, inscriptions of a deconstructive, poststructuralist attitude become apparent, albeit in different forms. The facets presented below can be interpreted as indicators for specific dispositions of a critical literate individual:

- Disrupting the commonplace
- Interrogating multiple viewpoints
- Focusing on sociopolitical issues
- Taking action and promoting social justice.

Disrupting the commonplace can be interpreted as a form of interrupting established patterns of thought and perception. This requires an attitude of openness for something new and unfamiliar, an attitude that stimulates interest in looking behind something and also allows a productive dealing with irritations. Disrupting the commonplace addresses the construction character of any kind of text (and knowledge) and aims at a form of deconstruction (Janks, 2000).

Interrogating multiple viewpoints is directly related to the questioning of textual experiences. In this context, the importance of insight into one’s dependence on perspective is emphasized.

Focusing on sociopolitical issues and *disrupting the commonplace* both address the assumed inescapable intertwining of power and language and its productive, “world-ordering” effects. However, this facet of critical literacy emphasizes the aspect that knowledge also acts as a mechanism for social structuring (Lessenich, 2010).

Critical literacy focuses not only on the interaction with text to achieve critical judgment in dealing with and related to information, knowledge, and truths conveyed by textual material. Critical literacy ultimately aims at *taking action* and *promoting social justice*. This addresses a capacity for action driven by a critical-constructive mistrust in dealing with knowledge, the insight of its powerful construction, and sensitivity to the reality-structuring effects of knowledge.

Understanding critical literacy along these four dimensions has served as a basis for developing a concrete approach to the promotion of critical thinking in a deconstructive sense, which is outlined below.

The promotion of critical literacy in an intervention in the didactics of higher education

For a higher education course in a Master's program, a concept was developed that explicitly aims to enable students—some of them later to become teachers at vocational schools—to deal with text material while practicing a deconstructive attitude. The goal was to foster critical patterns of thought and modes of action in dealing with textbook knowledge of business administration lessons.

Textbooks were used as objects of examination because they strongly dominate business administration teaching in the related context. These books are considered a hidden curriculum, and their use is part of the school's "normality", which is rarely questioned. A critical examination of these issues is hardly part of the didactic education at the universities nor is there enough time for this in the first practical phases as student teachers or young teachers. Pellegrino (2007, p. 1) portrays a similar picture of the teaching of history: "The idea of teaching students to reflect upon their own thinking is typically not part of teachers' repertoire." Most high school teachers continue to teach from a single secondary source, the textbook." Thus, this is not a specific characteristic of teaching business administration but a rather general problem of pedagogical work.

In the study, each student was advised to examine a textbook thoroughly. The students had to work together in groups. The analysis required precise multiple readings and coding, similar to the approach used for qualitative content analysis. The students were confronted with the textbook as a teaching and learning medium—which they already got to know intensively in several earlier contexts—in a way that was at first quite irritating for them. The irritation was caused on the one hand by the novel procedure of meticulously detailed work on the textbook and, on the other hand, by the unusual ways of observing the text (e.g., how is "normality" negotiated in the books?). The course also offered a lecture on textbook research, research methods, and the basics of poststructuralist thinking (especially an introduction to discourse analysis).

The aim was that these prospective teachers should develop a knowledge of textbook knowledge through a critical examination of the books in a discourse-analytical design. Thus, their critical thinking should be promoted to be able to make reflective didactic decisions about the teaching content later on, in the tradition of Klafki (1985). Figure 2 shows the steps of the procedures (see also Thoma (2017) for more details). The groups were given intensive advice from two teachers in special group sessions.

The critical thinking generated in our university course in dealing with textbook knowledge should not just remain on the surface; rather, it should be sustainable. The effectiveness of the

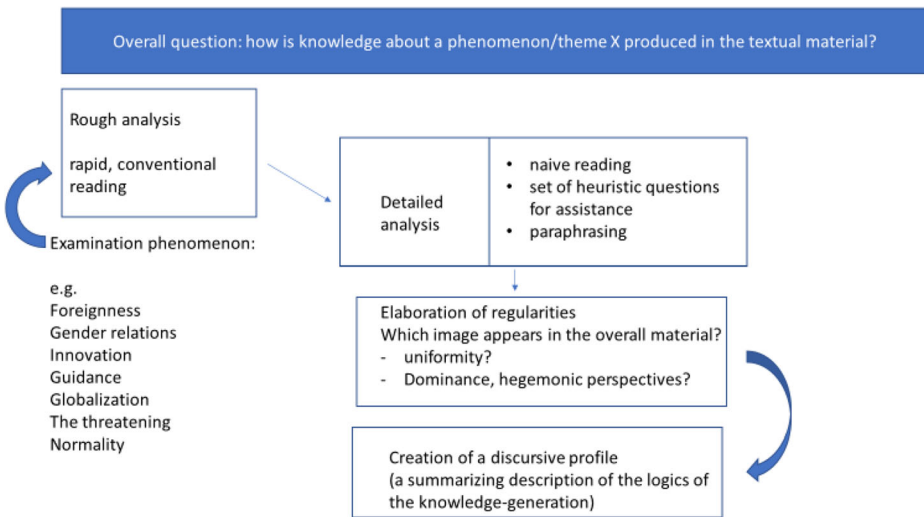


Fig. 2 Phases of discourse analysis

didactic intervention was evaluated (see Thoma & Ostendorf, 2018). In a longitudinal quantitative-empirical pre-post-testing and a qualitative interview study after the first practical phase of the students in schools, the development of a critical-reflective attitude toward textual knowledge that encompasses all four dimensions of critical literacy could be demonstrated. The sustainability of the intervention was also confirmed in the interview study. At this point, however, the focus is not on the reception of the evaluation findings but rather on explanations of the didactic principles as they were applied in the didactic design of the course and their connection to the promotion of critical thinking based on a deconstructive concept of critique. Without presenting the concrete details of the individual steps too broadly (Thoma & Ostendorf, 2018), some design principles that lie *behind* the concrete form of the developed course setting will be described more precisely.

For illustrative purposes, reference is also made to some original statements from the abovementioned evaluation study interviews.

Principles of teaching and learning of a “heterodox” didactics

Some principles have proven helpful in the design of teaching-learning arrangements aimed at promoting critical thinking. This is not a matter of recipe-based knowledge, but rather open principles, which must be interpreted in the contingent teaching-learning situations for the respective setting and translated into concrete methodical formats.

The presented teaching and learning arrangement has been linked to the context of textbook research and didactic selection of content. The aim was to enable students to make a reflective selection of content for business administration lessons with a critical distance. Nevertheless, a rather generic character can be stated in the sense that it was in principle about the way knowledge was dealt with. This reflects the classic twofold process of categorical didactics (Klafki, 1985). In the concrete work on a content-wise bound example, general, transferable practices are gained.

In this sense, the principles presented below are of a general nature—they lie *behind* the didactic arrangement presented here as a concrete example—and are thus potentially transferable to other teaching-learning contexts in other (text-based) domains. We assume, however, that recontextualizations, adaptations to domain-specific settings, have to be made in the process of transfer. These translations probably show up in the manner in which the texts to be worked on (in the broadest sense) are selected and assembled for student analysis. Besides, also the research questions the students work on will have to be selected on a discipline-specific matter.

This reflects our assumption that the promotion of critical thinking is context-bound and can be particularly promoted through concrete engagement with subject-specific knowledge. We reject the “generalists” assumptions that critical thinking (as a set of skills) can be taught and learned on its own—without concrete connection to specific content (cf. Moore, 2011).

The didactic principles described below are called “heterodox”. Thus, it should be emphasized that these are intervention principles for the promotion of critical thinking and are based on a “heterodox” interpretation of critique. There are very few concrete examples described in the educational literature. Some can be found in the didactics of language teaching (Mellor & Patterson, 2004), which promote alternative readings of texts and thematize or make the constructedness of text and interpretation tangible (e.g., by encouraging students to generate their narratives on literary texts). The didactic intervention presented here also focuses on working with texts. However, this is based on the specific understanding of text and language described above.

Deconstruction of knowledge

Firstly, the individual’s ability and willingness to ask questions to a text or to transform given information into questions are relevant for opening up the performativity of text. Which assumptions, attributions, and categorizations does the text contain? What does the text exclude? In which manner does a specific order arise in the text? In which way does a specific meaning arise in the text? Such textual work has the potential to provide insights into the constructed nature of knowledge. This is not exclusively about an analysis of special knowledge or knowledge experienced as particularly spectacular, but above all, about a deconstructive analysis of knowledge experienced as normal in everyday life. Here, poststructuralist influences are particularly evident in the design of higher education interventions. Language is interpreted as a reference system. It stands “for a fundamental structure of meaning, in which all social facts must already be embedded in order to be able to appear at all” (Quadflieg, 2008, p. 105).

Following this, two movements of thought are initiated in the didactic design. On the one hand, it is about the discovery of the unsaid (i.e., mechanisms of inclusion and exclusion in the texts), and on the other hand, it is about the identification of reference contexts that show certain meanings in their discursive embedding. The targeted, conscientious examination of other perspectives—“whose voices are heard and whose are missing?” (Luke & Freebody, 1997)—and thus what Klafki (1985, p. 217) labels as “perspectival disruption”, supports the insight that textually negotiated things are always more complex and diverse than they appear to be. Such an investigation not only broadens the view of something different but also sensitizes one to a reflexive judgment of contradictory or conflicting positions and perspectives.

The didactic figure of interruption

In our understanding, disrupting the commonplace is an essential element of a reflected ability to judge, since it seems to be able to disrupt supposed natural necessities and raises the awareness that things do not necessarily have to be the way they are but could always be different. Such recognition of contingency broadens the horizon of argumentation, justification, and evaluation.

Initially, the intervention described above was also about interrupting entrenched patterns of thought that manifested themselves among the students and led in part to the stylization of textbooks as “bibles”. We wanted to provoke an interruption. This has been achieved particularly through the meticulous, accurate, and multiple reading of the texts based on a set of heuristic questions, which provided a kind of guidance (detailed analysis). This, and the discussion in accompanying counseling meetings with the groups, led to deeper “a-ha” effects, which constituted an interruption with normality.

Here is an excerpt from the original interview data (after a long school internship) in response to the question of what has fundamentally changed as a result of the course:

“For me, it was as if the textbook was like the Bible. So it was really—there was nothing that was not right. And if it was not right, then it was a disaster (...) And this is what I would like to show the students when I am actually a teacher; that it is not something written down and completely valid in general, but that there is already a basis somewhere on which it has been written. And that at least this can be checked and counter-checked.” (Case 2)

The attitude that schoolbook texts are the ultimate “truth” was interrupted. But for some students, this interruption went beyond the context of the textbooks:

“Because even if I read a book in private now, I notice much more. So I pay much more attention as well. I didn’t do that before, but since the course, I have to say without lies that I have a much more critical view of the books and what I read.” (Case 8)

An interruption of the commonplace or everyday normality becomes apparent.

According to Biesta (2010), this moment of interruption is of particular importance for processes of subjectivation and thus for the development of the personality. A pedagogy of interruption is a “pedagogy that aims to keep the possibility of interruptions of the ‘normal’ order open” (Biesta, 2010, p. 91). It aims at subjectivation in the sense of a non-normative “coming into presence” of unique individuals. Although it is emphasized that appropriately designed educational interventions do not automatically actively generate this, it can nevertheless be assumed that there are conditions that hinder this: “This will happen when we prevent our students from any encounter with otherness and difference, any encounter that might interrupt their ‘normal’ ways of being and might provoke a responsive and responsible response” (Biesta, 2010, p. 90). In this respect, this close reading of textbooks and the corresponding critical examination of the unquestioned are certainly in the tradition of Biesta’s concept of a pedagogy of interruption.

Changing one’s viewpoint

The moment of changing one’s viewpoint is closely related to the disruption of familiar ways of thinking and thus to the didactic figure of an interruption. However, it goes somewhat beyond that. It is not the interruption of the familiar and normal that is the focus here but the re-adjustment of knowledge in the sense that the excluded is given a voice. Knowledge not only describes a social reality that precedes it but also generates—for example, through

classifications, categorizations, or typifications—the possibilities of experiencing this reality (Keller, 2007). A close reading in the context of Derrida makes the marginalized and the entanglement in power relations visible: “In terms of reading, deconstruction productively reveals seemingly neutral meanings as inscribed in violent hierarchy. Marginalized meanings become visible only to be themselves disturbed. Furthermore, any meaning is born of historical and political contexts that operate through positions and frameworks embedded in networks of power.” (Corson, 2020, p. 242)

It became important to identify mechanisms of inclusion and exclusion, especially in the creation of the “discursive profile”. The discursive power relations were also addressed here. By creating the discursive profile, the students were led to find alternative narratives to make the possibility of being differently experienceable. This procedure aims to critically question socio-structural power relations and thus addresses a democratic-political ability to judge.

Opening and the endurance of the undecidable

An important element of the didactic design for promoting critical thinking was to make students aware that criticism can also be non-normative. This is a difficult endeavor for both students and teachers in teaching-learning situations themselves characterized by hierarchical relationships. It is about having to endure undecidability, which sets one’s reflective engagement and reasoned decision as to the only way out.

This endurance of undecidability was also a challenge in the intervention setting. Intensive group guidance by the teachers was necessary to ensure that students did not rashly accept pragmatic solutions that would only allow a critical engagement on the surface. The process of opening up to what was initially an unfamiliar way of thinking and reading had to be supported in the counseling.

The relation of “conventional” and “heterodox” didactic principles to promote critical thinking

We would be unfaithful to Derrida’s way of thinking if we were to install mechanisms of exclusion. In this respect, we would like to conclude by revisiting the findings on the promotion of critical thinking in “conventional” settings. A meta-study (Abrami et al., 2015) showed that the following three principles, especially in their combination, are of particular importance here: dialogical communication, authentic instruction, and guiding and support. A deeper look at particularly effective arrangements revealed additional aspects: the principle of instructive framing, authentic experience, active participation in a group setting, or a (simulated) research attitude. Similarly, other approaches such as that of Ennis (2018) are pointing in this direction.

All these didactic principles, which could be described as “conventional” since they are part of the standard repertoire of any experience- or activity-based didactics, were also essential in the example presented for the promotion of critical literacy. On the one hand, groups worked together in a mode of project work. But there were also accompanying group counselings by the teachers, and the scheme for rough and detailed analysis formed a central frame of the teaching-learning setting.

The whole arrangement showed very clearly the necessity of active scaffolding, as described in Vygotsky’s learning theory (1978). However, in terms of the basic tenor and the

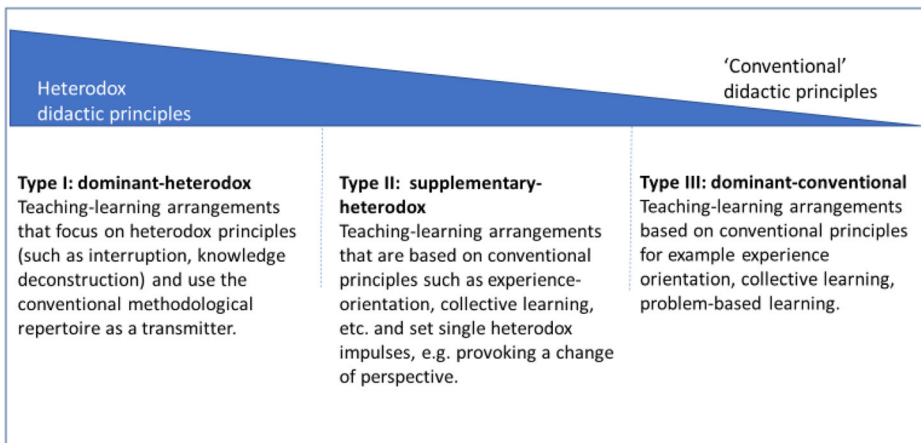


Fig. 3 Types of “heterodox” and “conventional” didactic principles

overall concept of the teaching-learning arrangement, the claims of deconstructive text work, the provocation of interruptions in thinking about supposedly normal things, the identification of inclusion and exclusion mechanisms, and the refusal to fall back on simple solutions were *dominant*. The presented didactic intervention can thus be classified as *dominant heterodox* in a classification along with the combination of “heterodox” and “conventional” didactic principles (Fig. 3).

However, other mixed forms are also conceivable, such as the supplementary “heterodox” type, which follows the model of “conventional” experience- and activity-based didactics even more closely and sets individual “heterodox” methodical impulses, such as provoking a change of perspective.

Conclusion

In our paper, we described a deconstructive understanding of critique based on poststructuralist philosophies. Such an understanding aims at the promotion of knowledge about knowledge and thus addresses the basic poststructuralist assumption of the performativity of language. We have shown that it is possible to translate our deconstructive understanding of critique into didactic arrangements in the context of higher education. The principles labeled as “heterodox” (which lie *behind* the didactic intervention described) can be regarded as a framework for designing teaching-learning arrangements in different contexts in higher education. However, this requires a situational “translation” of these principles in concrete learning situations and a disciplinary contextual connection. It also has become clear that concrete didactic orchestration may overlap with more “conventional” forms of course design—as they are established, for example, in activity-based forms of teaching.

We are aware that the creation of teaching-learning arrangements based on “heterodox” principles is very demanding. Teachers have to engage (to some extent) in poststructuralist thinking to develop and implement appropriate course designs and also to mentor and guide students in these learning processes.

At this point, the question remains unanswered to what extent the transferability of our “heterodox” principles to domains (e.g., the natural sciences) succeeds, where less text-based

teaching and learning can be assumed. It can also be expected that further research in this area would result in the elaboration of further principles. The principles discussed here are therefore not intended to be an exhaustive list.

Finally, we would like to point out that critical thinking in the deconstructive sense presented here has the potential to open up a space of reflection in which something that is “other” can emerge. The opening of such a space of reflection seems very promising for the shaping of economy and society—especially in the post-Corona age.

Funding Open access funding provided by University of Innsbruck and Medical University of Innsbruck.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Abrami, P. C., Bernard, R. M., Borokhovski, E., Waddington, D. I., Wade, C. A., & Persson, T. (2015). Strategies for teaching students to think critically: A meta-analysis. *Review of Educational Research*, 85(2), 275–314. <https://doi.org/10.3102/0034654314551063>.
- Anaiadou K, & Claro M (2009). *21st Century Skills and Competences for New Millennium Learners in OECD Countries*. OECD Education Working Papers, No. 41.
- Anderson, L. W., Krathwohl, D. R., & Bloom, B. S. (2001). *A taxonomy for learning, teaching and assessing: A revision of Bloom's taxonomy of educational objectives*. Longman.
- Arrufat O (1997). The role of exploration and critical decision making and problem solving in making life choices (doctoral thesis). <https://digitalcommons.fiu.edu/cgi/viewcontent.cgi?article=2450&context=etd>. (Accessed 29 May 2020).
- Bandyopadhyay, S., & Szostek, J. (2019). Thinking critically about critical thinking: Assessing critical thinking of business students using multiple measures. *Journal of Education for Business*, 94(4), 259–270. <https://doi.org/10.1080/08832323.2018.1524355>.
- Barnett, R. (2015). A curriculum for critical being. In M. Davies & R. Barnett (Eds.), *The Palgrave Handbook of Critical Thinking in Higher Education* (pp. 63–76). Palgrave.
- Bailin, S., Case, R., Coombs, J., & Daniels, L. (1999). Conceptualizing critical thinking. *Journal of Curriculum Studies*, 31(3), 285–302. <https://doi.org/10.1080/002202799183133>.
- Biesta, G. J. (2010). Good Education in an Age of Measurement. In *Ethics, Politics, Democracy*. Paradigm Publisher.
- Biesta, G. J., & Stams, G. J. (2001). Critical thinking and the question of critique: Some lessons from deconstruction. *Studies in Philosophy and Education*, 20, 57–74.
- Bromme, R. (2005). Thinking and knowing about knowledge. In M. Hoffmann, J. Lenhard & F. Seeger (Eds.), *Activity and Sign – Grounding Mathematics Education*, 191–201.
- Chad, N., Salisbury, M., & Pascarella, E. (2015). Student perceptions of effective instruction and the development of critical thinking: A replication and extension. *Higher Education*, 69, 823–838. <https://doi.org/10.1007/s10734-014-9807-0>.
- Corson, J. (2020). Reading Derrida close reading Lemov close reading close reading. *Educational Philosophy and Theory*, 52(3), 240–250. <https://doi.org/10.1080/00131857.2019.1631156>.
- Culver, K. C., Braxton, J., & Pascarella, E. (2019). Does teaching rigorously really enhance undergraduates' intellectual development? The relationship of academic rigor with critical thinking skills and lifelong learning motivations. *Higher Education*, 78, 611–627. <https://doi.org/10.1007/s10734-019-00361-z>.

- Davies, M., & Barnett, R. (2015). Introduction. In M. Davies & R. Barnett (Eds.), *The Palgrave Handbook of Critical Thinking in Higher Education* (pp. 1–25). Palgrave.
- Derrida, J. (1987). Some questions and responses. In N. Fabb, D. Attridge, A. Durant, & C. MacCabe (Eds.), *The Linguistics of Writing. Arguments between Language and Literature*. Manchester University Press.
- Derrida, J. (1976). *Of Grammatology*. Johns Hopkins University Press.
- Dewey, J. (1910/1951). *How we think*. (Wie wir denken. Eine Untersuchung über die Beziehung des reflektiven Denkens zum Prozeß der Erziehung.) Morgarten Verlag, Conzett & Huber.
- Diaz-Bone, R. (2015). Dekonstruktion. In R. Diaz-Bone & C. Weischer (Eds.), *Methoden-Lexikon für die Sozialwissenschaften* (p. 83). Springer VS.
- Ennis, R. H. (2018). Critical thinking across the curriculum: A vision. *Topoi*, 37, 165–184.
- Facione, P. A. (1990). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction. Research findings and recommendations*. American Philosophical Association <https://philarchive.org/archive/FACCTA>. (Accessed 28 May 2020).
- Fajardo, M. (2015). A review of critical literacy beliefs and practices of English language learners and teachers. *University of Sydney papers in TESOL*, 10, 29–56.
- Foucault, M. (1989a). *Archaeology of knowledge*. Routledge.
- Foucault, M. (1989b). *Der Gebrauch der Liste. Sexualität und Wahrheit. Erster Band*.
- Foucault, M. (1978). *Dispositive der Macht. Über Sexualität, Wissen und Wahrheit*. Merve.
- Hetmanek, A., Knogler, M., CHU Research Group (2018). Kritisches Denken als Unterrichtsziel: Von der Definition zur Förderung. Kurzforschung 18. https://www.clearinghouse.edu.tum.de/wp-content/uploads/2018/11/CHU_KR18_Abrami_Kritisches-Denken_mit-Anhang.pdf. (Accessed 15 June 2020).
- Hofer, B., & Pintrich, P. (1997). The development of epistemological theories: Beliefs about knowledge and knowing and their relation to learning. *Review of Educational Research*, 67(1), 88–140.
- Hyytinen, H., Holma, K., Toom, A., Shavelson, R., & Lindblom-Ylänne, S. (2014). The complex relationship between students' critical thinking and epistemological beliefs in the context of problem solving. *Frontline Learning Research*, 6, 1–25. <https://doi.org/10.14786/flr.v2i4.124>.
- Janks, H. (2000). Domination, access, diversity and design: A synthesis model for critical literacy education. *Educational Review*, 52(2), 175–186. <https://doi.org/10.1080/713664035>.
- Janks, H., & Vasquez, V. (Eds.). (2011). *Critical literacy revisited. A special issue of Teaching Practice and Critique*. Waikato U. Press.
- Keller, R. (2007). Methoden sozialwissenschaftlicher Diskursforschung. In R. Schützeichel (Ed.), *Handbuch Wissenssoziologie und Wissensforschung* (pp. 214–224). UVK-Verlag.
- King, P., & Kitchener, K. (2004). Reflective judgement: Theory and research on the development of epistemic assumptions through adulthood. *Educational Psychologist*, 39, 5–18.
- Klafki, W. (1985). *Neue Studien zur Bildungstheorie und Didaktik*. Beltz Verlag.
- Kuhn, D., & Weinstock, M. (2002). What is epistemological thinking and why does it matter? In B. Hofer & P. Pintrich (Eds.), *Personal epistemology: The psychology of beliefs about knowledge and knowing* (pp. 121–144). Lawrence Erlbaum Associates.
- Lessenich, S. (2010). Arbeit, Beschäftigungsverhältnisse, Sozialstaat. In A. Engelhardt & L. Kajetzke (Eds.), *Handbuch Wissensgesellschaft. Theorien, Themen und Probleme* (pp. 207–218). Transcript.
- Lewis, M., Flint, A. S., & Van Sluys, K. (2002). Taking on critical literacy. The Journey of Newcomers and Novices. *Language Arts*, 79(5), 382–392.
- Lorencová, H., Jarošová, E., Avgitidou, S., & Dimitriadou, C. (2019). Critical thinking practices in teacher education programmes: A systematic review. *Studies in Higher Education*, 44(5), 844–859. <https://doi.org/10.1080/03075079.2019.1586331>.
- Luke, A. (2012). Critical literacy: Foundational notes. *Theory Into Practice*, 51(4), 4–11. <https://doi.org/10.1080/00405841.2012.636324>.
- Luke, A., & Freebody, P. (1997). Shaping the social practices of reading. In S. Muspratt, A. Luke, & P. Freebody (Eds.), *Constructing critical literacies: Teaching and learning textual practice* (pp. 185–224). Hampton Press.
- Marsh, J., Larson, J., Vasquez, V. M., & Comber, B. (2005). Critical literacy. In J. Larson & J. Marsh (Eds.), *Making literacy real: Theories and practices for learning and teaching* (pp. 40–67). Sage Publications.
- Mason, L., & Bromme, R. (2010). Situating and relating epistemological beliefs into metacognition: Studies on beliefs about knowledge and knowing. *Metacognition and Learning*, 5(1), 1–6.
- Mellor, B., & Patterson, A. (2004). Poststructuralism in English classrooms: Critical literacy and after. *International Journal of Qualitative Studies in Education*, 17(1), 83–98.
- Moore, T. (2013). Critical thinking: Seven definitions in search of a concept. *Studies in Higher Education*, 38(4), 506–522. <https://doi.org/10.1080/03075079.2011.586995>.
- Moore, T. (2011). Critical thinking and disciplinary thinking: A continuing debate. *Higher Education Research and Development*, 30(3), 261–274. <https://doi.org/10.1080/07294360.2010.501328>.

- Mosley, M. (2010). Becoming a literacy teacher: Approximations in critical literacy teaching. *Teaching Education, 21*(4), 403–426.
- Müller, H.-R., & Stravoravdis, W. (2007). Bildung im Horizont der Wissensgesellschaft. Zur Einführung. In H.-R. Müller & W. Stravoravdis (Eds.), *Bildung im Horizont der Wissensgesellschaft* (pp. 9–16). VS Verlag.
- Niu, L., Behar-Horenstein, L. S., & Garvan, C. W. (2013). Do instructional interventions influence college students' critical thinking skills? A meta-analysis. *Educational Research Review, 9*, 114–128. <https://doi.org/10.1016/j.edurev.2012.12.002>.
- Pellegrino, A. M. (2007). The manifestation of critical thinking and metacognition in secondary American history students through the implementation of lesson plans and activities consistent with historical thinking skills. <https://diginole.lib.fsu.edu/islandora/object/fsu%3A180295/datastream/PDF/view> (Accessed 29 May 2020).
- Pithers, R. T., & Soden, R. (2000). Critical thinking in education: A review. *Educational Research, 42*(3), 237–249. <https://doi.org/10.1080/001318800440579>.
- Quadflieg, D. (2008). Sprache und Diskurs. Von der Struktur zur différance. In S. Moebius, & A. Reckwitz (Eds.), *Poststrukturalistische Sozialwissenschaften* (pp. 93–107).
- Rafolt, S., Kapelari, S., & Kremer, K. (2019). Kritisches Denken im naturwissenschaftlichen Unterricht – Synergiemodell, Problemlage und Desiderata. *Zeitschrift für Didaktik der Naturwissenschaften, 25*(1), 63–75.
- Rogers, R. (2014). Coaching literacy teachers as they design critical literacy practices. *Reading & Writing Quarterly, 30*(3), 241–261. <https://doi.org/10.1080/10573569.2014.909260>.
- Rogers, R., & Mosley Wetzell, M. (2014). *Designing critical literacy education through critical discourse analysis*. Routledge.
- Schommer, M. (1998). The influence of age and education on epistemological beliefs. *British Journal of Educational Psychology, 68*, 551–562.
- Vasquez, V. (2017). Critical Literacy. *Oxford Research Encyclopedias, Education*. <https://doi.org/10.1093/acrefore/9780190264093.013.20>.
- Thoma, M. (2017). Critical analysis of textbooks: Knowledge-generating logics and the emerging image of 'global economic contexts'. *Critical Studies in Education, 58*(1), 19–35. <https://doi.org/10.1080/17508487.2015.1111248>.
- Thoma, M., & Ostendorf, A. (2018). Discourse analysis as a tool for promoting the 'critical literate' VET teacher. *Vocations and Learning, 11*, 245–263. <https://doi.org/10.1007/s12186-017-9188-5>.
- Veyne, P. (2010). *Foucault. Der Philosoph als Samurai*. Reclam.
- Vygotsky, L. S. (1978). *Mind in Society. The Development of Higher Psychological Processes*. Harvard University Press.
- Wang, Y., Chao, C. Y., & Liao, H. C. (2011). Poststructural feminist pedagogy in English instruction of vocational-and-technical education. *Higher Education, 61*, 109–139. <https://doi.org/10.1007/s10734-010-9327-5>.
- Yang, Y., Newby, T., & Bill, R. (2008). Facilitating interactions through structured web-based bulletin boards: A quasi-experimental study on promoting learners' critical thinking skills. *Computers & Education, 50*, 1572–1585. <https://doi.org/10.1016/j.compedu.2007.04.006>.

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.