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NEOLIBERAL REFORMS, KNOWLEDGE AND THE SOCIOLOGY OF EDUCATION: WHAT CONCEPT OF KNOWLEDGE IS BEHIND NEOLIBERAL EDUCATION REFORMS, AND WHAT ARE THE ORGANIZATIONAL PRINCIPLES UNDERLYING THIS TYPE OF KNOWLEDGE?

Introduction

Education is changing all over the world, and this change is especially evident in schools. The current neoliberal school reforms, which stress skills and competences, are a sign of fundamental societal changes, the transition to a society where new skills and applied forms of knowledge form the basis for the new knowledge-based economy and functioning of a society[1]. This new societal context, often called knowledge society or information society, has generated new curricula in many countries and inspired new slogans about what sort of education we presumably will need in the future. In many articels and books the claim is made that future education should consider the competence requirements of the new labor market, the 21st century skills. Students in this new and digitalized education should create knowledge themselves, without a clear link to established research-based knowledge[2].

Sociology of education is poorly equipped to meet this new trend because of its primary focus on the external relationship between education and society. At the same time, what Bernstein[3] has called the "internal relation", has largely been ignored by sociology. Several sociological approaches reduce the analysis of education to be equivalent to its

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[1] Lauder, H., et. al (Ed.) (2012). *Educating for the knowledge economy?: critical perspectives*. London: Routledge.
[2] Ananiadou, K., & Claro, M. (2009). 21st Century Skills and Competences for New Millennium Learners in OECD Countries. *OECD Education Working Papers*(41), 0_1-33; Krumsvik, R. J., & Wenger, E. (2009). *Learning in the network society and the digitized school*. New York: Nova Science Publishers; Young, M. F. D. (2008). *Bringing knowledge back in: from social constructivism to social realism in the sociology of education*. London: Routledge.
[3] Bernstein, B. (2001). From pedagogies to knowledges. In A. Morais (Ed.), *Towards a sociology of pedagogy: the contribution of Basil Bernstein to research* (Vol. vol. 23, pp. 363-384). New York: Peter Lang.

external relation, obfuscating the social character of the field of education, which has created its own practices by applying particular forms of knowledge with their underlying principles[4]. Lacking this insight, education, in these sociological analyses tends to be reduced to being a systems of social reproduction, where knowledge is understood in terms of power and particular interests and where the content of school learning is interpreted in terms of its impact on social class, gender, or ethnicity[5].

In his last paper Bernstein[6] called for movement "from pedagogies to knowledges". The field of education is a social field, and I argue in this paper that the particular forms of knowledge of each field should be analyzed regardless their external relations. With his theory of "pedagogical devices" and later "knowledge structures" Bernstein[7] opened the field of education for a new type of sociological analysis, identifying problems that are still relevant. Of special importance is his analysis of knowledge in education. Bernstein's theory has been further developed by social realism[8], and Karl Maton[9] presents knowledge as an independent object of study. Knowledge is not a homogeneous or neutral category in education, and different forms of knowledge create limitations and opportunities for knowledge development, which has further implications for progression or success in a subject or in a program. By relying on Bernstein and Maton's Legitimate Code Theory (LCT), this paper will provide examples of how forms of knowledge in neoliberal education can be analyzed and how these forms of education have social effects and further influence progression and learning.

[4] Maton, K. (2014). *Knowledge and knowers: towards a realist sociology of education*. New York: Routledge.
[5] Moore, R., & Muller, J. (2010). "Voice Discourse" and the Problem of Knowledge and Identity. In K. Maton & R. Moore (Eds.), *Social realism, knowledge and the sociology of education: coalitions of the mind* (pp. 60-80). London: Continuum; Moore, R. (2013). Social Realism and the problem of the problem of knowledge in the sociology of education. *British Journal of Sociology of Education, 34*(3), 333-353. doi:10.1080/01425692.2012.714251
[6] Bernstein, B. (2001). From pedagogies to knowledges. In A. Morais (Ed.), *Towards a sociology of pedagogy: the contribution of Basil Bernstein to research* (Vol. vol. 23, pp. 363-384). New York: Peter Lang.
[7] Bernstein, B. (1990). *Class, codes and control: 4: The structuring of pedagogic discourse*. London: Routledge & Kegan Paul; Bernstein, B. (1996). *Pedagogy, symbolic control and identity: theory, research, critique*. London: Taylor & Francis; Bernstein, B. (1999). Vertical and horizontal discourse: An essay. *British Journal of Sociology of Education., 20 (2)*, 157-173; Bernstein, B. (2000). *Pedagogy, symbolic control and identity: theory, research, critique*. Lanham: Rowman & Littlefield.
[8] Moore, R., & Muller, J. (2010). "Voice Discourse" and the Problem of Knowledge and Identity. In K. Maton & R. Moore (Eds.), *Social realism, knowledge and the sociology of education: coalitions of the mind* (pp. 60-80). London: Continuum.
[9] Maton, K. (2014). *Knowledge and knowers: towards a realist sociology of education*. New York: Routledge.

Bernstein and knowledge in the field of education

With the concepts *pedagogic device* and *knowledge structures*, Basil Bernstein[10] introduces a complex and differentiated analysis of knowledge in the field of education. According to Bernstein[11], education consists of three different social fields called the field of *knowledge production*, the field of *recontextualization*, and the field of *reproduction*. In the field of knowledge production, new knowledge is constructed and positioned; the field of recontextualization is where discourses from the field of production are selected, adapted, and processed in order to be school knowledge; the field of reproduction is where school knowledge is transmitted and acquired. These fields have a unique character with their respective social bases that over time have molded the fields into their institutionalized form. Forms of knowledge vary in the different fields with their own properties and powers that cannot be reduced to social practices but that nevertheless contribute to creating these practices.

In the field of knowledge production, the structuring of knowledge creates particular social practices, and Bernstein[12] here distinguishes between *hierarchical and horizontal knowledge structures*. A crucial difference between these knowledge structures is linked to the question of how new emerging theories are subsumed under and integrated into earlier theories in the field with the development of increasingly abstract and general theories or if new theories are incompatible with established theories[13]. Horizontal knowledge structures belong to the latter category. Horizontal knowledge structures are typically found in the social sciences and in the humanities and are characterized by several parallel theories; here progress means the emergence of a new theory. According to Bernstein[14], sociology is a discipline with a horizontal knowledge structure and with a limited ability to integrate new theories because each theory operates with its own concepts and conceptual definitions, which means that disputes cannot be solved by empirical research. This situation leads to fragmentation or, more precisely, to a particular form of segmentalism, which limits the ability for theory development in the form of cumulative knowledge building. While the natural sciences allow progression with hierarchical integration of knowledge, sociology appears to be marked by ideological fault lines between positions and alternative theories with

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[10] Bernstein, B. (1990). *Class, codes and control: 4: The structuring of pedagogic discourse*. London: Routledge & Kegan Paul; Bernstein, B. (1996). *Pedagogy, symbolic control and identity: theory, research, critique*. London: Taylor & Francis; Bernstein, B. (1999). Vertical and horizontal discourse: An essay. *British Journal of Sociology of Education., 20 (2)*, 157-173; Bernstein, B. (2000). *Pedagogy, symbolic control and identity: theory, research, critique*. Lanham: Rowman & Littlefield.

[11] Bernstein, B. (1990). *Class, codes and control: 4: The structuring of pedagogic discourse*. London: Routledge & Kegan Paul; Bernstein, B. (1996). *Pedagogy, symbolic control and identity: theory, research, critique*. London: Taylor & Francis.

[12] Bernstein, B. (1999). Vertical and horizontal discourse: An essay. *British Journal of Sociology of Education., 20 (2)*, 157-173; Bernstein, B. (2000). *Pedagogy, symbolic control and identity: theory, research, critique*. Lanham: Rowman & Littlefield.

[13] Moore, R., & Maton, K. (2001). Founding the sociology of knowledge: Basil Bernstein, intellectual fields and the epistemic device. In A. Morais (Ed.), *Towards a sociology of pedagogy: the contribution of Basil Bernstein to research* (Vol. vol. 23). New York: Peter Lang.

[14] Bernstein, B. (2000). *Pedagogy, symbolic control and identity: theory, research, critique*. Lanham: Rowman & Littlefield.

ongoing disputes where the most important thing seems to be by whom a particular knowledge claim is made[15]. This means that in the discipline of sociology knowledge is structured by a kind of "knower" culture (who makes a claim is more important than what kind of claim is made). A key question for future sociology is how to find a new path of development with stronger emphasis on cumulative knowledge development[16].

The field of recontextualization and the field of reproduction are directly and indirectly related to the field of knowledge production, but at the same time the concept of recontextualization implies that curricular structure is something different from knowledge structure. Bernstein's[17] analysis was aimed at the development of knowledge structures in the field of knowledge production, and was not directed to curricular structures, pedagogical structures, or knowledge practices in the classroom. Nevertheless, Bernstein's theory, with its concepts and definition of problems, can be adapted for a further analysis of the field of recontextualization and the field of reproduction. This is because school curricula are to some degree build on knowledge from the discipline subjects and because the knowledge practices of subject teachers is informed by social and epistemic relations to knowledge. In this context an earlier remark of Bernstein can be mentioned, insisting that these fields have an ideological dimension, which the neoliberal reforms illustrate perfectly. The authorities can create curricula for schools and teacher education based on their particular aims and motivations. In a more general sense, the new pedagogical currents such as progressivism and constructivism, with their slogans such as "learning by doing" have influenced curricula and teaching practices. During the last decade a number of research contributions have been made that in different ways explore how Bernstein's concepts and perspectives can be adapted to the field of recontextualization and the field of reproduction. Based on Bernstein's concept of knowledge structures, Wheelahan[18] studies how neoliberal reforms with their emphasis on new skills and competences dethrone knowledge in vocational education in Australia. She argues that the neoliberal reforms, which manifest themselves in *Competency Based Training*, exclude the working class and disadvantaged groups from access to vertical knowledge, the type of knowledge that is crucial for the future labor market. In a similar vein, Christie[19] has shown that students who follow the subject of English in the English school, where the knowledge structure in the curriculum is opaque, often experience segmental forms of learning where knowledge cannot be integrated with earlier acquired knowledge. These examples show that knowledge is an object that can be studied

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[15] Maton, K., & Muller, J. (2008). A sociology for the transmission of knowledges In F. Christie & J. R. Martin (Eds.), *Language, knowledge and pedagogy: functional linguistic and sociological perspectives* (pp. 14-33). London;,New York: Continuum.

[16] Moore, R., & Maton, K. (2001). Founding the sociology of knowledge: Basil Bernstein, intellectual fields and the epistemic device. In A. Morais (Ed.), *Towards a sociology of pedagogy: the contribution of Basil Bernstein to research* (Vol. vol. 23). New York: Peter Lang; Maton, K. (2014). *Knowledge and knowers: towards a realist sociology of education*. New York: Routledge.

[17] Bernstein, B. (1999). Vertical and horizontal discourse: An essay. *British Journal of Sociology of Education., 20 (2)*, 157-173; Bernstein, B. (2000). *Pedagogy, symbolic control and identity: theory, research, critique*. Lanham: Rowman & Littlefield.

[18] Wheelahan, L. (2010). *Why knowledge matters in curriculum: a social realist argument*. London: Routledge.

[19] Christie, F., & Martin, J. R. (Eds.). (2008). *Language, knowledge and pedagogy: functional linguistic and sociological perspectives*. London;,New York: Continuum.

in all parts of the system of education, and it shows the necessity to further develop Bernstein's concepts in order to develop new ways to analyze curricula and classroom practices.

Legitimate Code Theory

Maton's Legitimate Code Theory (LCT)[20] further develops, rephrases, and expands Bernstein's theory for example by relying on Bourdieu's field theory and insights from social realism[21]. His LCT-theory focuses on the field of knowledge production but also introduces elements that open up the field of contextualization and the field reproduction for a sociological analysis of the forms of knowledge that are dominant in programs, disciplines, or subjects. This theory encompasses a number of dimensions that are developed for the analysis of the legitimate codes underlying the knowledge practices of the actors. In this paper I will focus on the most frequently used dimensions of the LCT-theory: semantics and specialized codes.

The semantic dimension studies discourses and practices and how these can be illuminated with a set of semantic codes (see figure 4), described as semantic gravity and semantic density. *Semantic gravity* can be described in the following way[22]:

> *The degree to which meaning relates to its context, whether that is social or symbolic. Sematic gravity may be relatively stronger (+) or weaker (-) along a continuum of strengths. The stronger the semantic gravity (SG+), the more closely the meaning is condensed within symbols; the weaker the gravity (SG-, the less dependent meaning is on its context.*

In a similar vein, *semantic density* is described as

> *the degree of condensation of meaning within symbols (terms, concepts, phrases, expressions, gestures, clothing, etc.) Sematic density may be relatively stronger (+) or weaker (-) along a continuum of strengths. The stronger semantic density (SD+), the more meaning is condensed within symbols; the weaker semantic density (SD-, the less meaning is condensed.*

While semantic gravity (SG +,-) describes external relations to knowledge practices, semantic density (SD +,-) describes internal relations of these practices. These two relations can be represented by a horizontal and vertical axis resulting in four principally different code (see figure 4). All practices contain both semantic gravity and semantic density, but the strength of these relations will vary (+,-). Semantic gravity refers to the context-dependence of meaning. This context dependence allows practically infinite gradation of strength,

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[20] Maton, K. (2014). *Knowledge and knowers: towards a realist sociology of education*. New York: Routledge.

[21] Moore, R., & Muller, J. (2010). "Voice Discourse" and the Problem of Knowledge and Identity. In K. Maton & R. Moore (Eds.), *Social realism, knowledge and the sociology of education: coalitions of the mind* (pp. 60-80). London: Continuum.

[22] Maton, K. (2011). Theories and things: The semantics of disiplinarity. In F. Christie & K. Maton (Eds.), *Disciplinarity* (pp. 65-66).

where strong semantic gravity (SG+) refers to meaning that has a high dependence on context (for example on a specific event) while weak semantic gravity refers to more context-independent meaning (for example a theoretical explanation of an event). A concept that condenses many meanings, such as social class, will have a relatively strong semantic density (SD+), while a concept such as classroom will have fewer meanings and thus a weaker density (SD-).

LCT-specialization starts with the assumption that practices, understandings, or knowledge claims are oriented towards something or someone. In order to have progress in education, individual practices must match the underlying code, which is conceptualized as legitimate in the subject or the program. Analytically one can distinguish between epistemic relations (ER), between practices and their object or focus and social relations (SR), and between practices and their subject, author, or agent (who is responsible for particular practices). In the same way, in the realization of knowledge requirements one can differentiate between epistemic relations (ER) to the object of study and social relations (SR) to subjects or authors. The strength of these relations determines what can be seen as a legitimate knowledge and who can be a legitimate knower. As mentioned above, each of these relations can be strong (+) or weak (-), which creates four principally different specialized and legitimizing codes: *Knowledge (ER+, SR-), knower (ER-, SR+), elite (ER+, SR+), and relativist.* These codes can be represented and analyzed with the following model: *Figure 1[23]*.

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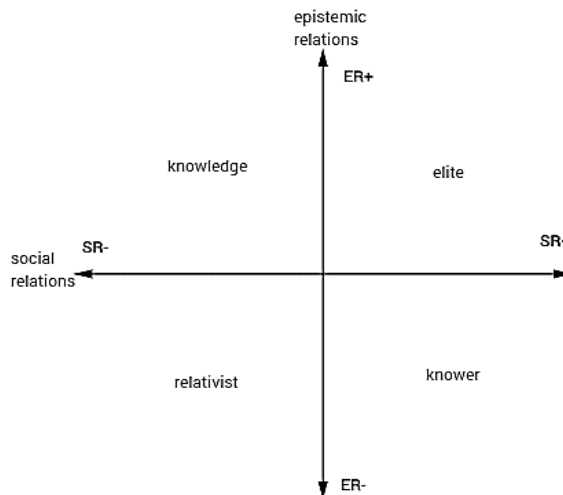
[23] Maton, K., Hood, S., & Shay, S. (2016). *Knowledge-building: educational studies in legitimation code theory*: Routledge, Taylor & Francis Group, p. 12.

Neoliberal reforms and the introduction of technology in school

The neoliberal reforms have different characteristics in different countries, but one common element is the introduction of new technology in school[24]. This development, including the implementation of digital technology in school, is driven by the authorities, often with reference to the emergence of a new society called knowledge or information society, characterized by a new type of labor market[25]. Seen from the perspective of the authorities, the digitalization of school is a measure that aims at adaptation of the school and its students to a new time requiring new digital skills and competences. This section aims at answering the following question: what types of knowledge are favored in these plans, and why do the official plans clash with teachers' knowledge practices in school subjects?

With a starting point in Maton's LCT-theory[26] and the dimension of specialized codes, I will present my own study of official Norwegian plans to digitalize school[27]. In the frame of this paper it is not possible to discuss all aspects of this research, and I will limit myself to providing some examples analyzing the forms of knowledge or the underlying principles that inform the official strategy of digitalization and how this strategy clashes with teachers' knowledge practices in school subjects.

The Norwegian curriculum Knowledge Promotion (LK06) emphasizes the development of digital competence and digital skills in all school subjects. The official program for school digitalization was further developed in two central plans: the *Program for Digital Competence 2004-2008* (Program for digital kompetanse - PED 2004) and *Future, Innovation, and Digitalization – Digitalization Strategy for Primary and Secondary Education from 2017 to 2021* (Framtid, fornyelse og digitalisering. Digitaliseringsstrategi for grunnopplæringen - FFD 2017). A common characteristic for these documents is that they treat knowledge as a neutral category and assume that technology can be integrated into the classroom without any friction. To analyze the two latter plans, a *translation device* was developed that is suitable to analyze data with concepts from the LCT-theory[28].

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[24] Selwyn, N. (2016). *Is technology good for education?* Cambridge: Polity.

[25] Lauder, H., et. al (Ed.) (2012). *Educating for the knowledge economy?: critical perspectives*. London: Routledge; Bratland, E., Siemieniecka, D., & Siemieniecki, B. (2016). *Knowledge, ICT and education: a variety of perspectives*. Torun: Wydawnictwo Adam Marszałek.

[26] Maton, K. (2014). *Knowledge and knowers: towards a realist sociology of education*. New York: Routledge.

[27] Bratland, E. (2018a). Code clash and code match in education: why does the government's digitalization strategy clash with teachers' knowledge practices in school subjects? In (pp. 23-39). Torun: Wydawnictwo Adam Marszalek, 2018.

[28] Chen, R., Maton, K. & Bennett, S.. (2011). Absenting discipline: Constructivist approaches in online learning. In F. Christie, F. Christi, & K. Maton (Eds.), *Disciplinarity: functional linguistic and sociological perspectives*

Table 1: A translation device for specialization codes and political documents

EPISTEMIC RELATIONS (ER)			
Concept		Indicators	Example quotes from empirical data
content knowledge	ER+	Content knowledge is emphasized as determining form of legitimate educational knowledge	Scientific subjects and other areas of knowledge are in continuous transition, and school subjects must be based on updated knowledge (FFD, p. 16)
	ER-	Content knowledge is downplayed as less important in defining legitimate educational knowledge	The digital competence of students is not developed by itself but by daily exposure to different digital media, which creates interest, a low threshold for use, and a good basis for learning (PDK, p. 20)

SOCIAL RELATIONS (ER)			
Concept		Indicators	Example quotes from empirical data
Personal knowledge and experience	SR+	Personal experience and opinions are viewed as legitimate educational knowledge	The learner is seen as an active and creative producer of knowledge and is not just a recipient of information and knowledge from external sources (PDK, p. 25)
	SR-	Personal experience and opinions are downplayed and distinguished from legitimate educational knowledge	To achieve competence in a subject means to be able to acquire and to apply knowledge and skills for being able to master challenges and to solve problems in known and unknown contexts and situations (FFD, p. 17)
Concept		Indicators	Example quotes from empirical data
Societal need for competence	SR+	The competence that is needed for the labor market is seen as legitimate educational knowledge	A changing labor market requires that students are prepared for lifelong learning, to think in new ways and apply what they have learned in new contexts (FFD, p. 16)
	SR-	Competence in the workplace is downplayed and distinguished from legitimate educational knowledge	The use of ICT in some subjects forms part of those subjects both through the competence aims and the methods teachers choose to use (Preface, FFD)

This analysis is based on specialized LCT-codes, distinguishing between epistemic relations (ER) and social relations (SR) to knowledge. Inside each of these dimensions, there are constructed concepts and indicators that are used to categories statements as weak or strong epistemic relations (ER+, ER-) and as social relations (SR+, SR-).

As the selected quotations show, the mentioned plans contain both epistemic and social relations to knowledge; however, an analysis shows that social relations have a stronger position in the plans, compared with epistemic relations, although in different ways. The 2004 plan focuses on the opportunities of technology, where each student can become an active participant in a school setting, supported by a pedagogy emphasizing the interests

and acquired digital competences of young people[29]. This, however, is different in the 2017 plan. Even though this plan is also optimistic with regard to the opportunities for better learning in school, it focuses strongly on new societal needs including a new labor market requiring new forms of competence, skills, and knowledge. The use of technology in teaching is meant to enable students to participate in a "knowledge intensive and specialized labor marked" (FFD, p.16). Social relations are important in both plans, and they legitimize the use of technology in education with new needs following the growth of a new type of labor market where digital skills, creativity, problem-solving, and applied knowledge are central. This means that *social relations (SR+)* have a strong position in the official plans to digitalize school, while *epistemic relations (ER-)* have a far weaker position. The aim of digitalization is not the need to learn specialized knowledge in the school subjects, but rather the need to enable students to participate in social life and in a new workplace environment. This form of legitimizing digital technology privileges practices in education that are characterized by a *knower code*. This situation leads to code clashes and to some degree to code matches between the official strategy for digitalization of school and established forms of knowledge and knowledge practices in the classroom.

Code clashes and code matches in the integration of technology in school subjects

The official plans for a digital school are based on a wide meaning of the concept of competence including skills, attitudes, and applied knowledge, which are treated as being equivalent[30]. Knowledge is described as a descriptive and neutral category, something that can be acquired in all subjects with the help of technology. Norwegian authorities here overlook international research on the integration of technology in school[31], showing that different forms of knowledge in the subjects and knowledge practices in the classroom will determine to which degree technology is implemented in the classroom. School knowledge is not neutral knowledge, and some forms of using ICT tools will match some subject areas better than others do. The integration of technology in school is marked by the subjects' forms of knowledge and by the teachers' knowledge practices, which are affected by the teachers' understanding of how students can best learn the subject.

Howard and Maton show that the integration of technology varies, sometimes considerably, as between the subjects of English and mathematics. Based on the LCT-theory, which is being applied to a large database, collected from teachers in Australia, Howard and Matonargue that the underlying codes of the subjects are crucial for the application and integration of technology in these subjects. In mathematics the practices are formed by

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[29] Skagen, K. (2014). *Digitalisering som statlig avdidaktisering av klasserommet. Norsk pedagogisk tidsskrift*, 98(6), 440-451.

[30] Bratland, E., Siemieniecka, D., & Siemieniecki, B. (2016). *Knowledge, ICT and education: a variety of perspectives*. Torun: Wydawnictwo Adam Marszałek.

[31] Howard, S., & Maton, K. (2011). Theorising Knowledge Practices: A Missing Piece of the Educational Technology Puzzle. *Research in Learning Technology, 19*(3), 191-206. doi:10.1080/21567069.2011.624170; Maton, K., Hood, S., & Shay, S. (2016). *Knowledge-building: educational studies in legitimation code theory*: Routledge, Taylor & Francis Group.

a *knowledge code* that stresses epistemic relations *(ER+)[32]*. The use of technology is geared towards learning specialized mathematical knowledge, where ICT is used to create graphic presentations and illustrations for example by using calculation tables. English, on the other hand, is marked by a *knower code*, where the social relations (SR+) are stronger than the epistemic relations (ER-). It is emphasized in the subject that ICT can support students' learning by practicing how they can express themselves personally. Furthermore, the technology can stimulate reading and writing as well as open up for new creative work methods in the subject. The subjects of mathematics and English have considerably different codes, and these results can be illustrated in the following way:

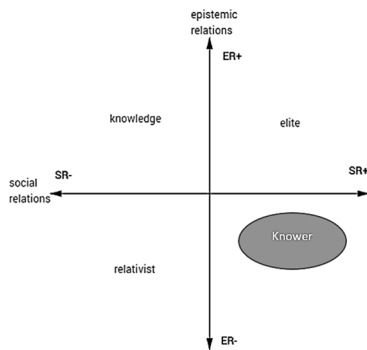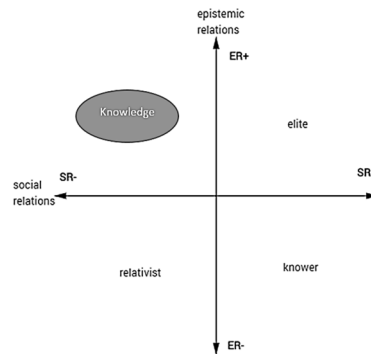Fig. 2. Teachers perceptions of bases of achievement of English   Fig. 3. Teachers perceptions of bases of achievement of mathematics

These figures show that the subjects have different forms of knowledge. The underlying codes of the subjects as well as teachers' knowledge practices play a decisive role for the integration of technology in the subjects. Howard and Maton's[33] analysis shows that the teachers' understanding of their subject and how students can best progress in the subject determine the use of technology in the subject area. Based on an analysis of the underlying relations (SR+,-, ER +,-), Howard and Maton[34] show how the integration of technology is determined by the subject's knower code (SR+, ER-), and the teachers knowledge practices. In the subject of English the practices are driven by a knower code, where students principally are seen as legitimate knowers and where the technology is seen as an option for the students to express themselves. The subject of mathematics is characterized by a knowledge code (ER+, SR-), and the use of technology is much more selective with the aim to learn the specialized knowledge of mathematics.

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[32] Howard, S., & Maton, K. (2011). Theorising Knowledge Practices: A Missing Piece of the Educational Technology Puzzle. *Research in Learning Technology, 19*(3), 191-206. doi:10.1080/21567069.2011.624170.
[33] Ibidem.
[34] Ibidem.

Howard and Maton's[35] research is an important contribution showing how the subjects' forms of knowledge and knowledge practices in schools play a decisive role for learning and the use of technology. There are now a number of related studies[36], explaining why the official strategy for digitalization of schools has had little success. This strategy does not take into account the different forms of knowledge in the subjects but assumes a general social need for digital skills and competences. I argue that the social conditions that are emphasized by the official strategy of digitalization is based on a *knower code* (SR+, ER-)[37], which clashes in part with the practices and forms of knowledge that exist in the school subjects.

Forms of knowledge in the neoliberal education reforms

The neoliberal education reform ultimately legitimizes itself by referring to the emergence of a new society, called the knowledge society, with a new and knowledge-driven labor market[38]. In the neoliberal reforms, education is not a goal in itself, instead the point of education is to take care of the needs that are supposed to arise with the emergence of a new society, creating jobs that require new forms of competence, skills, and applied knowledge[39]. Even though the concept of knowledge is frequently used in the neoliberal discourse, the analysis above shows that these reforms are based on social forms of knowledge with weak epistemic relations.

In the the field of recontextualization[40], the neoliberal reforms lead to new curricula, that may differ between countries, but still have the common denominator that they assume the emergence of new social requirements that are best met by forms of competence, skills, and applied knowledge. In my own analysis of the Norwegian curriculum Knowledge Promotion (LK06), I discuss how the plan replaces knowledge aims in the subjects with a broad sense of competence, which does not distinguish between skills, norms, attitudes, and knowledge[41]. Based on Bernstein's concept of knowledge structures, Wheelahan[42] conducted an extensive analysis of the neoliberal changes of vocational education in Australia. As mentioned, these reforms emphasize "Competency Based Training" (CBT), a transition

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[35] Maton, K. (2011). Theories and things: The semantics of disiplinarity. In F. Christie & K. Maton (Eds.), *Disciplinarity* (pp. 62-84).

[36] Maton, K., Hood, S., & Shay, S. (2016). *Knowledge-building: educational studies in legitimation code theory*: Routledge, Taylor & Francis Group; Bratland, E. (2018b). Tecnology and education: Why do students still need access to specialized knowledge? In E. Baron-Polańczyk (Ed.), *ICT in educatinal design* (Vol. 12, pp. 37-49): Zialona Gora University Press.

[37] Bratland, E. (2018a). Code clash and code match in education: why does the government's digitalization strategy clash with teachers' knowledge practices in school subjects? In (pp. 23-39). Torun: Wydawnictwo Adam Marszalek, 2018.

[38] Lauder, H., et. al (Ed.) (2012). *Educating for the knowledge economy?: critical perspectives*. London: Routledge.

[39] Bratland, E., Siemieniecka, D., & Siemieniecki, B. (2016). *Knowledge, ICT and education: a variety of perspectives*. Torun: Wydawnictwo Adam Marszałek.

[40] Bernstein, B. (1990). *Class, codes and control: 4: The structuring of pedagogic discourse*. London: Routledge & Kegan Paul; Bernstein, B. (1996). *Pedagogy, symbolic control and identity: theory, research, critique*. London: Taylor & Francis.

[41] Bratland, E., Siemieniecka, D., & Siemieniecki, B. (2016). *Knowledge, ICT and education: a variety of perspectives*. Torun: Wydawnictwo Adam Marszałek.

[42] Wheelahan, L. (2010). *Why knowledge matters in curriculum: a social realist argument*. London: Routledge.

that Wheelahan[43] characterizes as dethronement of knowledge in education, which in particular affects disadvantaged groups.

To explain the effects of the neoliberal reforms it is necessary to create a new theoretical approach suitable for a classification of the type of knowledge and the skills that are favored in the neoliberal reforms. With a starting point in Bernstein and Maton's theories, Shay developed a model suitable for the analysis of the forms of knowledge found in curricula for professional and vocational programs. The figure below, based on my own adaptation of Shay's model[44], illustrates the four principally different forms of knowledge which can be expressed in curricula for professional and vocational education programs.

Figure 4: Forms of knowledge in curricula[45].
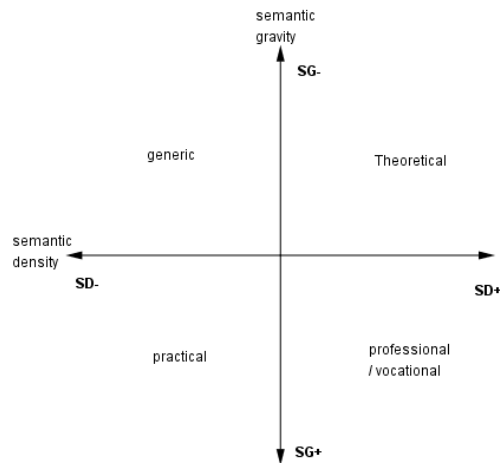
This figure goes beyond the old discussion about the relation between theoretical and practical knowledge in vocational education, where it is often claimed that practical knowledge should be prioritized. By introducing the terms generic and professional / vocational knowledge, it becomes possible to analyze the contemporary neoliberal reforms and curricula, as well as the effects on the field for recontextualization and the field for reproduction. Vocational knowledge, as it is described by Wheelahan[46], is a result of the recon-

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[43] Wheelahan, L. (2010). *Why knowledge matters in curriculum: a social realist argument*. London: Routledge, p.87.

[44] Bratland, E. (2017). Professional knowledge in education: What kind of organizational principles are behind the knowledge practices, and what are the conditions for developing this knowledge? *Prolemy Profesjonlogii*, pp. 167-177.

[45] Shay, S. (2013). Conceptualizing curriculum differentiation in higher education: a sociology of knowledge point of view. *British Journal of Sociology of Education, 34*(4), p.572.

[46] Wheelahan, L. (2010). *Why knowledge matters in curriculum: a social realist argument*. London: Routledge.

textualization of knowledge, formed by education and the curriculum regulating the program. Shay's model[47], which is a further development of Maton's LCT-theory, is an innovative conceptual framework based on an analysis of knowledge and qualification requirements in several curricula. Shay distinguishes between four curricular modalities: theoretical, practical, generic, and professional / vocational. Professional and vocational education will require one or several of these qualifications, which has consequences for the knowledge practices in education. Shay's concepts illuminate the principles that underlie different concepts of knowledge in vocational education:

- Theoretical knowledge (SG-, SD+), where basic achievements are characterized by relative context-independence and highly complex meanings
- Practical knowledge (SG+, SD-), where legitimacy is linked to more context-dependent practices with simpler meanings
- Generic knowledge (SG-, SD-), where meaning of legitimate practices is relatively context-independent, with relatively simple meanings
- Professional / vocational knowledge (SG+, SD+), where legitimacy is related to context-dependent practices that condense abstract and variable meanings

This overview shows how different forms of knowledge are regulated by different semantic codes. The debate about vocational education is marked by a dichotomy between practice and theory, but Shay's model shows, furthermore there is a distinction between generic and theoretical knowledge that is overlooked in the public debate. The model shows that the opposition between practical and theoretical knowledge is a false choice for vocational education. The semantic codes show that vocational education is not only regulated by practical forms of knowledge, but that it also contains abstract and highly condensed meanings. Vocational education is characterized by relatively strong semantic gravity and high semantic density. The underlying codes create clear distinctions between practical, generic, and theoretical forms of knowledge. Even though practical knowledge has the capacity to develop systematic principal knowledge, it cannot be converted to theoretical knowledge[48]. Similarly, generic knowledge cannot be converted into vocational knowledge.

Shaye's model provides the opportunity to deepen Wheelahan's[49] analysis of the neoliberal reforms of vocational education in Australia. Wheelahan's analysis encompasses the curriculum and the field of reproduction and shows how the competence-driven reform (CBT) stresses practical, informal, adapted, and contextual forms of knowledge. This reform privileges "the workplace as the site of learning and knowledge production at the expense of disciplinary knowledge"[50]. The aim of neoliberal reforms is to adapt education to society,

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[47] Shay, S. (2013). Conceptualizing curriculum differentiation in higher education: a sociology of knowledge point of view. *British Journal of Sociology of Education, 34*(4), 563-582. doi:10.1080/01425692.2012.722285
[48] Gamble, J. (2004). Retrieving the general from the particular: The structure of craft knowledge. In A. Morais, B. Davies, & J. Muller (Eds.), *Reading Bernstein, researching Bernstein* (pp. 189-203). London: Routledge-Falmer.
[49] Wheelahan, L. (2010). *Why knowledge matters in curriculum: a social realist argument.* London: Routledge.
[50] Wheelahan, L. (2010). *Why knowledge matters in curriculum: a social realist argument.* London: Routledge, p. 136

meaning that the differences between knowledge that is needed at work and in education are reduced to a minimum. The ideal is a form of generic knowledge, which is supposed to function independently of a particular context. Generic knowledge, translated into the curricula as new skills and competences, is a context-independent form of knowledge that is based on simple opinions. Wheelahan[51] points out that the current neoliberal reforms with their strong emphasis on generic forms of knowledge create several problems for student in vocational education. To function in the workplace, craftsmen must be able to combine theoretical and practical knowledge in several contexts. To be able to solve problems in such contexts, it is crucial that students in vocational education have access to specialized knowledge, which is a prerequisite for "the confident embedding of theoretically informed action in practice"[52]. When the knowledge base in vocational education is reduced to a generic form of knowledge, this has clearly negative effects, also in terms of reduced opportunities for good professional practice. When theoretical knowledge is pushed out of education, it primarily affects social groups such as young working class adults who will not have access to specialized knowledge[53]. More generally, the neoliberal reforms severely limit the students' opportunities to progress in education by participating in processes with cumulative knowledge building[54]. Instead, it is highly likely that these students will experience segmental forms of learning and knowledge building where the result consists of fragmented and local forms of knowledge, making it difficult for students to transfer this knowledge to new contexts.

Conclusion

This paper begins with a description of how the neoliberal reforms with their focus on the present labor market, including demands for new forms of skills and competences are changing education all over the world. The paper points out that the sociology of education is poorly equipped to engage with this development because it has been over-focusing on the external relations between education and society. In line with Bernstein[55], the paper argues that education is a separate social field with its own forms of practices and knowledge. With a starting point in Maton's[56] LCT-theory (specialization and semantics) and with examples from Norway and Australia, the paper demonstrates how knowledge and knowledge practices can be studied in education as what Bernstein[57] calls the field of recontextualization and the field of reproduction. The paper seeks to uncover what concept of knowledge

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[51] Wheelahan, L. (2010). *Why knowledge matters in curriculum: a social realist argument*. London: Routledge.

[52] Clarke, L., & Winch, C. (2004). Apprenticeship and Applied Theoretical Knowledge. *Educational Philosophy and Theory, 36*(5), 509-521. doi:10.1111/j.1469-5812.2004.087_1.x p.511.

[53] Wheelahan, L. (2010). *Why knowledge matters in curriculum: a social realist argument*. London: Routledge.

[54] Maton, K. (2014). *Knowledge and knowers: towards a realist sociology of education*. New York: Routledge.

[55] Bernstein, B. (2000). *Pedagogy, symbolic control and identity: theory, research, critique*. Lanham: Rowman & Littlefield; Bernstein, B. (2001). From pedagogies to knowledges. In A. Morais (Ed.), *Towards a sociology of pedagogy: the contribution of Basil Bernstein to research* (Vol. vol. 23, pp. 363-384). New York: Peter Lang.

[56] Ibidem, p. 136.

[57] Bernstein, B. (1990). *Class, codes and control: 4: The structuring of pedagogic discourse*. London: Routledge & Kegan Paul; Bernstein, B. (1996). *Pedagogy, symbolic control and identity: theory, research, critique*. London: Taylor & Francis.

characterizes the neoliberal education reforms, and what its further effects are. Using concepts from Maton's theory, the paper analyses the digitalization of education and how the strategy of the Norwegian authorities clashes with the knowledge practices of subject teachers at school. In the next step, the paper provides an analysis of Wheelahan[58] by illuminating the semantic codes that mark vocational education in Australia. The common denominator for the neoliberal reforms is that they privilege the new labor market and assume that education has the function to satisfy its requirements for new skills and competences. In Norway these reforms have been introduced as a knowledge reform even though the reform Knowledge Promotion (LK06) in reality tones down specialized knowledge in education[59]. An analysis shows that the official strategy for digitalization of the Norwegian school was not developed based on the subjects' specialized knowledge but on the idea to serve social needs stressing social forms of knowledge based on a *knower code* (SR+, ER-). On the other hand, an analysis of the forms of knowledge in vocational education in Australia shows that it is marked by the need for practical and adapted forms of knowledge and qualifications, defined as compatibility with the new labor market. This neoliberal reform, described by Wheelahan[60] as *Competency Based Training*, is marked by a specific form *of generic knowledge* (SG-, SD-). Generic knowledge is a form of knowledge that is context-independent based on singular of opinions and without connection to the forms of theoretical knowledge that the students will need in their vocational education. The neoliberal reforms are characterized by the fact that they tone down theoretical knowledge and privilege social and generic forms of knowledge in education. This turn, where the students do not receive access to specialized knowledge in education creates unfortunate effects and results and produces programs that hardly live up to the idea of a knowledge society.

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[58] Wheelahan, L. (2010). *Why knowledge matters in curriculum: a social realist argument*. London: Routledge.
[59] Bratland, E., Siemieniecka, D., & Siemieniecki, B. (2016). *Knowledge, ICT and education: a variety of perspectives*. Torun: Wydawnictwo Adam Marszałek.
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Erik Bratland

Neoliberal reforms, knowledge and the sociology of education: What concept of knowledge is behind neoliberal education reforms, and what are the organizational principles underlying this type of knowledge?

The current neoliberal reforms have given school a new content, with strong emphasis on skills and competencies, which the knowledge society allegedly requires. The sociology of education is poorly equipped to meet this development. To examine the content of neoliberal education reforms and their further effects, the paper calls for, in line with Bernstein, a new theory of knowledge in education. This paper is based on social realism and Maton's Legitimate Code Theory, claiming that the forms knowledge takes will be crucial for students' opportunities to build cumulative and context-exceeding knowledge inside and outside education. Providing examples from neoliberal education reforms in Norway and Australia, this paper demonstrates how specialized knowledge is being pushed out of education.

Keywords: neoliberal education reforms, knowledge, sociology of education, Legitimate Code Theory, LCT-specialization, LCT-semantics.

Reformy neoliberalne, wiedza i socjologia edukacji. Jakie pojęcie wiedzy kryje się za reformami edukacji neoliberalnej i jakie są zasady organizacyjne leżące u podstaw tego rodzaju wiedzy?

Obecne reformy neoliberalne nadały szkole nową treść, kładąc silny nacisk na umiejętności i kompetencje, których wymaga społeczeństwo wiedzy. Socjologia edukacji jest słabo przygotowana, aby sprostać tym zmianom. Aby zbadać treść neoliberalnych reform edukacji i ich dalsze skutki, w artykule przytoczono teorie Bernsteina jako nową teorię wiedzy w edukacji. Artykuł przedstawia również aspekty realizmu społecznego i Uzasadnioną Teorię Kodu Matona, według których, formy jakie przybiera wiedza, będą miały kluczowe znaczenie dla możliwości budowania przez uczniów skumulowanej i przekraczającej kontekst wiedzy w ramach edukacji i poza nią. W artykule podano przykłady neoliberalnych reform edukacji w Norwegii i Australii, wskazując w jaki sposób specjalistyczna wiedza jest wypychana z edukacji.

Słowa kluczowe: neoliberalne reformy edukacji, wiedza, socjologia edukacji, uzasadniona teoria kodu, specjalizacja LCT, semantyka LCT.

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