5 Towards a critical realist ontology for spatial education analysis

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Introduction

Dropout from upper secondary education[1] stands out as one of the main challenges for the Norwegian education system. Politicians, educational authorities, newspaper editors and commentators, as well as 'ordinary people', have cried out about a lost generation of youngsters, who due to lack of educational qualifications will enter adulthood with a serious disadvantage, making them more prone to unemployment and to becoming future passive receivers of social benefits. Numerous measures meant to counteract the high dropout rates have been instigated by educational authorities at different levels, most of them with minor success. Within the research communities, the focus has been on the usual suspects, with explanations related to individual or family characteristics, such as socio-economic status (SES), parents' educational level, gender or ethnicity (see, e.g., Byrhagen, Falch, and Strøm 2006; Lie et al. 2009). The problem of early school leaving is worse in vocational education and training (VET), and there is also a relevant geographical factor, as a main dividing line between those who drop out and those who complete their education, tends to differentiate between students from rural versus students from urban regions. Boys from low SES backgrounds residing in rural areas and attending a VET program are those most prone to drop out of school without completing. Furthermore, other forms of differences in educational achievement between those from rural and urban settings have also been documented throughout the education system, such as in national tests in reading, English and mathematics and in final exams at the end of compulsory schooling.

In this chapter, the main focus is on the spatial factor, and on how explorations of spatial differences in education can be understood through employing insights from critical realism (CR). There are several justifications for this focus. Firstly, there is evidence that place matters in educational outcomes in the sense that rural students are underperforming compared to their urban counterparts, even after controlling for variables such as grade levels and social background (Bæck 2015; Byrhagen et al. 2006; Hargreaves, Kvalsund, & Galton 2009). Research by among others Green and Corbett (2013)

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shows that this is also an international phenomenon. Secondly, despite the existence of research documenting the rural-urban divide when it comes to educational attainment, the focus on this problem in mainstream education research and among educational authorities and policy makers is minor. Location is often disregarded as a valid factor for understanding attainment differences, and the urban setting is presupposed in educational debates and analyses (Bæck 2015; Butler and Hamnett 2007; Hargreaves et al. 2009). Thirdly, the tendency to employ explanations focusing primarily on individual characteristics in research on attainment differences brings with it a danger of over-emphasizing the individual as the primary analytic entity. In consequence, effects that can better be understood at the level of schools, classrooms, local communities, regions or nations are sometimes overlooked or misinterpreted (Bæck 2015). Fourthly, this research field is lacking in theoretical discussions and advances, as is also pointed out by Corbett (2015), who calls for a stronger engagement of the conceptual tools of sociology and contemporary social theory in scholarship on rural education (see also Kvalsund & Hargreaves [2009] on this subject). Through focusing on spatial differences in early school leaving and educational attainment, this chapter addresses all four concerns, but its main contribution is related to the two latter elements. Insights from CR are used to explore and map out a theoretical basis for a spatial analysis of this topic, one that goes beyond the atheoretical and individually centred approaches that have dominated the research field thus far and that takes into consideration the actor-structure interplay in order to understand individual action and how societal structures work as causal factors in this regard. In line with this, in order to investigate why young people's educational behaviour varies according to *where* it takes place, the chapter focuses primarily on the material and structural conditions under which young people act and conduct their choices.

In the next sections, some of the main features of CR will be introduced. This is followed by an outline of generative mechanisms, which serves as the most significant analytical link for understanding spatial differences in education in this chapter. Several generative mechanisms are put forward as especially relevant for the problem at hand.

Critical realism: The empirical, the actual and the real

The starting point for the discussion proposed in this chapter is a desire to understand why young people from different geographical contexts act differently when it comes to dropping out of or completing upper secondary education and why their educational outcomes are significantly different from each other. In other words, the goal is to *explain* something, and what is ultimately sought to be explained is *individual action*. However, it is not individual action per se, or the actors' individual stories about or explanations or interpretations of their own actions that are at the centre of the

analysis proposed here – although these are certainly important. Instead, the aim is to investigate how structures and mechanisms emanating at meso or macro levels, impact upon the choices made at the micro level. For this purpose, CR can be fruitful, as it puts forward a dynamic understanding of how different levels interact with each other, creating upward and downward causation that may induce processes of change or reproduction.

The relationship between structure and agency is fundamental for theoretical understandings of individual action, and a preliminary CR framework for understanding this relationship was presented in Bhaskar's transformational model of social activity (Bhaskar 1998), and later developed in Archer's morphogenetic approach (Archer 1995). Here, the actor is regarded as intentional and active, and therefore as capable of making decisions. At the same time, decisions are made in contexts or settings where structural and institutional conditions must be taken into consideration, arguing that even micro-level analyses need to have a macro-level foundation. The relationship between individual agency/action and the social and material structures contextualizing the individual is, therefore, central for understanding how young people's decision-making processes are related to education when viewed through a CR lens. How are such decision-making processes constituted and how are they affected by space?

A central assumption in CR is that there is a real world out there that impinges upon actors at a number of different levels – and even though we cannot prove or disprove its existence, we behave as if it is real. The levels interact with each other and influence each other, implying the existence of dynamic relationships that can induce change in contexts for action. While acknowledging the existence of a material world, individual action and social structure are seen as emerging from, but not reducible to, the material world. Both the natural and social worlds have an objective reality, but the social world is overlaid with human constructs and conceptions that obscure the underlying mechanisms (Fox 2013). There is a deep structure to the social world that forms the causal mechanisms behind social processes. Structures are seen as a precondition for intentional individual action and must, therefore, exist prior to such action. Societal structures are not created through simultaneous individual behaviour and also cannot be reduced to such behaviour. In this sense, structures, therefore, have independent existence as emergent properties and powers.

According to Bhaskar (1975), the world should not be conflated with our experience of it, and in this sense, it is misleading to speak of the 'empirical world'. As pointed out by Sayer (2000), CR should, therefore, not be confused with empirical realism, or empiricism, which identifies the real with the empirical, that is, with what we can experience – 'as if the world just happened to correspond to the range of our senses and to be identical to what we experience' (Sayer 2000, 11). Instead, a central feature of CR ontology is the distinction between the real, the actual and the empirical – the three levels into which reality is stratified. The first level is the *empirical*,

defined as the domain of experience, that is, events as we experience them, and for a researcher this is the level where objects or events can be measured empirically (Fletcher 2017). In my study, this is the level where the young informants experience being a student in upper secondary education and share their experiences with me as a researcher. As stated by Fletcher (2017), the events at this level are always mediated through the filter of human experience and interpretation.

At the middle level, the *actual*, there is no filter of human experience. Events occur whether or not we experience or interpret them, and these occurrences are often different from what is observed at the empirical level (Danermark et al. 2002 as cited in Fletcher 2017). For my study, this level will consist of educational landscapes and opportunity structures that the young people relate to (more on this later).

Finally, the last level, the real, is the realm of objects, their structures and powers. They can be physical (like minerals) or social (like bureaucracies) (Sayer 2000). These objects have certain structures and causal powers, that is, capacities to behave in particular ways and causal liabilities or passive powers, that is, specific susceptibilities to certain kinds of change. A primary goal of CR is the aspiration to explain social events through reference to these causal mechanisms and the effects they can have throughout the three strata of reality (Fletcher 2017). The real is whatever exists, be it natural or social, regardless of whether it is or is not an empirical object for us, and whether we happen to have an adequate understanding of its nature. Bhaskar (1986, 5) states: 'This layer of reality already exists and is in action even if we are not informed of it and in most cases, it is independent of the scientist and his scientific activities' – it is *intransitive*, in Bhaskar's terminology. According to Sayer (2000), the belief that there is a world existing independently of our knowledge of it is a defining feature of CR.

We may be able to observe the real or the actual, for example, the real as the social structure of an organization, as well as what happens when they act (actual events), but some structures may not be observable. As stated by Sayer (2000), observability may make us more confident about what we think exists, but existence itself is not dependent on it. Critical realists, therefore, cannot rely on a criterion of observability in order to determine what exists. Instead, realists accept a causal criterion (Collier 1994 as referenced in Sayer 2000). Sayer (2000, 12) states: '… a plausible case for the existence of unobservable entities can be made by reference to observable effects which can only be explained as the products of such entities'.

Generative mechanisms

Central for understanding the relationship between structure and agency and how phenomena can be explained in CR is the concept of generative mechanisms – the *modum operandi* of the domain of the real. Bhaskar states that a generative mechanism is 'nothing more than a way of acting of a

thing' (Bhaskar 1975) and 'a causal structure that explains a phenomenon' (Bhaskar 1998). According to Archer (2015), generative mechanisms explain *how* a given correlation works, rather than merely *that* such an association is statistically significant, thereby providing the real basis of causal laws. As already mentioned, the real exists regardless of our knowledge of it; for example, causal laws exist regardless of the presence or absence of statistical associations with outcomes at the level of events (Archer 2015). Generative mechanisms can be understood as the process, or factor, in a system that produces a result and is, therefore, responsible for the action, or reaction or outcome of a natural or social phenomenon (Wight 2015). In this sense, mechanisms provide the explanation for a phenomenon. According to Wight (2015), mechanisms are not statements about experiences (the domain of the empirical) or events (the domain of the actual), but are claims about the way things act in the world independent of their being experienced.

Even though the notion of 'mechanism' can bring with it associations of determinism, this is not how mechanisms are understood in CR. Social systems are considered open systems, that is, systems that allow interactions between the different elements of the system and the system's surroundings, as opposed to closed systems that are completely isolated from their surroundings, for example, laboratory closure in natural science. According to Wight (2015), mechanisms cannot be deterministic since they operate in a social world characterized by contingency and flux and where multiple mechanisms are constantly interacting. He emphasizes that the outcome of a particular process, therefore, cannot be determined a priori by knowing the type of mechanism that is at work, implying that we cannot talk about *laws* relating to these mechanisms. Instead, the outcomes must be understood as *tendencies* generated by mechanisms operative within open systems.

Even though generative mechanisms possess the powers to produce outcomes, powers may still exist unexercised; they can be either activated or remain dormant (Sayer 2000). According to Wight (2015), mechanisms are, therefore, best understood as 'potentialities' that sometimes may need a trigger, or to reach a tipping point, before becoming operative. The implication of this is that the future should be understood as essentially open. Sayer (2000, 12) expresses it in the following way: 'What has happened or been known to have happened does not exhaust what could happen or have happened'. According to Sayer, the nature of the real elements that are present at a given time, constrains and enables what can happen, but does not predetermine what will happen. 'Realist ontology therefore makes it possible to understand how we could be or become many things which currently we are not: the unemployed could become employed, the ignorant could become knowledgeable, and so on' (Sayer 2000, 12). According to Wight (2015), this is crucial for how researchers should approach the question of mechanisms in empirical analyses. 'Given that all social systems are open', he says, 'and that a range of interacting mechanisms will typically constitute them, what

we mean when we identify one mechanism among many, is to imply that this mechanism is important in some way. This requires that explanation via mechanisms must specify the powers and propensities of that particular mechanism and identify the causal tendencies produced by it, as well as specifying when those tendencies might and might not be manifest' (Wight 2015, 61).

We now turn to the empirical problem that is the basis for this chapter, spatial differences in education outcomes, exemplified by early school leaving from upper secondary education. The aim is to discuss how this can be analysed in terms of the CR approach of the real, the actual and the empirical, and how an analysis of geographical education differences can benefit from the open systems-approach inherent in the CR ontology. The main questions in such an analysis are how we can identify, describe and explain the generative mechanisms that produce the observable outcome, students dropping out of school without formal qualifications. How does reality materialize for the students in a way that encourages so many of them to leave school? And, on the other hand, what preconditions need to be in place for the students to stay in school instead of leaving without formal qualifications? How can different levels of influence interact in such a way that change can be induced?

Young students' experiences of the transition to upper secondary education – description of the empirical

The analysis in this chapter is based on a study of upper secondary school students in the northern part of Norway. The rationale for the study was to investigate processes behind early school leaving in upper secondary education in the north of Norway, which is a major problem, especially in many rural places where as few as 30% of the students finish within standardized study time. The main research questions had to do with whether spatial factors were relevant for how students reflected on their educational plans and choices and for their experiences in school. Qualitative interviews – 54 in number – were conducted among students in seven upper secondary schools in a county in Northern Norway. The students were interviewed during their last semester of their first year in upper secondary school. The majority of the students were in VET, and two-thirds of them were girls. Four of the schools were located in what we may call rural settings, while the other three were located in two different towns in the county. While all of the schools recruited students from both rural and urban areas, the student body of the four schools in rural locations consisted primarily of rural students, with just the occasional student from one of the more urban places in the county.

Common for the majority of the students interviewed, irrespective of geographical background, was their upholding of the existing knowledge paradigm, which explained the students' emphasis on education as an

obvious, and in a way inescapable, part of the life phase they found themselves in. Continuing from lower secondary to upper secondary education was considered self-evident, and variations in how the youngsters reflected upon educational choices became more visible only when they were asked to talk about their plans after upper secondary education.

When the students were asked questions about making their way through the education system, the data revealed variations in terms of which factors they addressed, and this was connected to the spatial reality to which they related (see Bæck 2019 for more on this study). During the interviews, three main topics connected to their experiences of being an upper secondary school student stood out as particularly essential for the rural students. These were issues connected to moving away from home, issues connected to estrangement from place and 'costs' related to loss of social networks. These topics concern the domain of experience at the empirical level, that is, the outcomes of the generative mechanisms we aim to reveal through the analysis.

The transition to upper secondary education implies several different transitional experiences for the young. It has to do with the transition between two different parts of the educational system, between lower and upper secondary school, which involves new ways of working and new demands and expectations. Some of the students we interviewed talked about how they experienced the school subjects as more challenging and the teachers' demands higher, compared to what they had experienced in lower secondary school. Spatial transitions are also a part of the picture, as starting upper secondary education entails a geographical move from one physical school building to another, having to get acquainted with new school grounds, halls and corridors. Transitioning to a new school also means moving to new social environments and getting to know new classmates, new teachers and being integrated into new school classes.

During the interviews, it became clear that some of these transitions provided different challenges for the students depending on whether they resided in rural or urban areas. Since not all municipalities have an upper secondary school and since not all study tracks are represented in all schools, the physical transition of changing schools would often entail a greater spatial movement for the rural than for the urban students. Rural students commuted long distances on a daily basis to go to school or they moved away from home to live in school dormitories, bedsitters or with relatives. Such spatial movement and physical transition would affect the social aspects of transitioning to new school environments. The rural students often started their new school without an established social network of friends to lean on, which was described as challenging. One of the rural students, for example, had moved to town to go to school and didn't know anyone else in the class, so her transition to upper secondary school was hard since she struggled with establishing social relations, which, the student said, also made it difficult for her to relate to the subjects and to be active in class. For many of the rural students, the biggest challenge was related to going from living

at home to living by themselves as 15–16-year olds. Without the immediate support of parents and family, they had to get used to new and higher educational demands and get acquainted with new classmates, while at the same time fending for themselves when it comes to getting up in the morning, shopping, cooking and cleaning, finances etc. Many of the students experienced that they struggled more with the subjects than they had done previously, which could also be the case for the students who lived at home during upper secondary education. However, moving away from home, living by oneself and being exposed to new social situations were described as energy consuming and reduced their motivation for school-work.

For VET students, the years in upper secondary education often entail several moves over a four-year period. The different VET subjects and programs are divided between different schools, and changing tracks means changing schools. Also, the VET-students are dependent on apprenticeship positions in order to complete their education, which also means having to relocate. Adding to this that the average VET-student enters upper secondary education with lower grades from lower secondary education compared to the average student opting for the academic study programs, this group of students is put in a more vulnerable position when it comes to ability to complete their education.

Moving away from home also affected the students in other ways. The rural students would travel home almost every weekend and every school holiday. The new life situation of living in one place and being at home during weekends and holidays would affect their opportunities to take part in social interaction and be included in social networks, both in their home-places and in the new place of residence. The changing social circumstances and the loss of valuable social networks also affected access to part-time employment, in both places. For many of the rural students, securing a part-time job was a necessity in order to finance the bedsitter or the dormitory. Not being able to do so would put a strain on the parents' ability to pay, to the point that some of the rural students talked about giving up upper secondary education and moving back home.

In an analysis rooted in a critical realist approach, we are interested in the explanations behind the situation described above; why did the rural youngsters we interviewed experience more hardship in the transition from lower to upper secondary education, than their urban counterparts, potentially making it harder for them to complete upper secondary education?

Opportunity structures and educational landscapes at the level of the actual

In order to understand the experiences young people in the study expressed during the interviews, the context in which they undertake their deliberations is crucial. The context is made up of occurrences or events at the actual level, and as already stated, these events occur whether we experience

or interpret them or not. Contexts make up structural and cultural conditions for individuals' actions and choices, and essential elements when we discuss young people's educational orientations are the spatial patterning of the educational system and of work opportunities. The term 'opportunity structure' is a way of pinpointing the existence of conditions and barriers that affect students' motivations and choices. As outlined elsewhere (Bæck 2019), different geographical locations constitute different opportunity structures, providing options and barriers that directly and indirectly promote or hinder opportunities for individuals, which may again affect students' motivations and choices. The local presence of particular educational institutions is part of the opportunity structure that forms young people's perceptions of possible and probable educational routes, which may in turn affect individual school choices made and subsequent motivation within school. According to Million et al. (2017), the spatial organization of educational institutions implies shaping places as educational landscapes. They show that spatial proximity of educational institutions has positive effects on the successful outcome of people's educational biographies. Over the years, the spatial organization of educational institutions in Norway has changed dramatically. The spatially dispersed organization of schools that was the preferred approach for many years, where smaller schools would be established as close to the students' homes as possible, has been substituted by spatial concentration of institutions in what may be considered more centrally located settings. Schools in smaller communities have been closed down and the students have been moved to larger schools in municipal centres. This has been taking place at all levels of education. In upper secondary education, it has led to considerable spatial variations when it comes to the structure of available courses and apprenticeships, restricting the opportunities for young people residing in rural communities, creating logistical barriers and making weekly commuting a necessity for many students from the age of 15–16. Also important for the shaping of educational landscapes are factors such as resources allocated to education, differences in access to learning resources and differences in teacher recruitment and retention. These are factors that are crucial for the quality of the education offered and that may also vary according to place. In this way, the organizational structure of upper secondary schooling constitutes a spatially differentiated objective reality for young people. Many rural youngsters relate to an educational system that offers them limited options where they live, making certain educational routes hard to realise and making them more susceptible to dropping out of school (Bæck 2019).

Identification of possible mechanisms

In accordance with a CR ontology, it is at the level of the real that we can identify generative mechanisms that can explain rural students' educational experiences; the challenges related to moving away from home, the danger

of dropping out and the problems with coping with school. The opportunity structures and educational landscapes at the level of the actual can be traced back to three mechanisms that are at play: the centralized education system, the efforts in national education policy made towards decentralization, and international educational trends as they are made visible through local politics and priorities.

The centralized education system

According to Skinningsrud (2012, 2014), who has thoroughly described and analysed the historical emergence of the state education system in Norway, it is highly centralized. This is confirmed by a number of other researchers who claim that the Norwegian education system shows the dominant characteristics of being a centralized education system, for example, through detailed and binding governmental framework plans, rigid administrative regulations, control systems, evaluations and sanctioning systems and also since the education system is governed by one law and one national curriculum (Aasen 1999, 2013; Karseth, Møller, and Aasen 2013; Møller et al. 2013; Skinningsrud 2012, 2014; Telhaug, Mediås, and Aasen 2006).

Archer (2013, 174–176) uses two pairs of characteristics to discuss the difference between centralized versus decentralized education systems: unification plus systematization and differentiation plus specialization. Unification and systematization concern structural features of the education system as a consequence of how education is related to the state. This refers to what extent educational establishments, activities and personnel are developed under a central, national educational framework of administration, including national standardization of educational inputs, processes and outputs and whether the education system is systematized through interconnected elements within a unified whole. When it comes to differentiation and specialization, this relates to the education system's responsiveness to society's components. Differentiation refers to how education is differentiated from other social institutions (Archer 2013, 179), which is the result of the multiplicity of goals imposed on education by various influential parties and pressures of powerful interest groups associated with different social institutions. Specialization refers to the development of internal educational specialization within the education system, that is, an internal differentiation of the system itself, such as specialization in intake, processes and outputs (Archer 2013, 181). How much specialization develops depends partly upon the range, variety and complementarity of the services demanded from it, and partly on the relative power of those voicing the demands.

According to Skinningsrud (2019), the developmental trajectories when it comes to these two pairs of characteristics differ between decentralized and centralized educational systems. While a centralized system shows increased unification and systematization, generated by the structural connection

between education and the state, a decentralized system is characterized by specialization and differentiation, due to the structures connecting education with external interest groups and the incorporated teaching profession. She claims, that increased differentiation means that the system becomes more autonomous in the sense that there is less governmental interference with internal work operations. Skinningsrud characterizes the Norwegian educational system as centralized, and using Norway as an example, Nordkvelle and Nyhus (2017) reinforce the point that in a centralized system, the teaching professions will have limited autonomy when it comes to designing learning environments, changing examinations or curricula etc. Another example from the Norwegian context is parents' position in school. In a decentralized system, parents could be a potential interest group, however, as shown elsewhere (Bæck 2022), in reality parents have limited opportunities to negotiate, demand or influence what goes on in school within Norway's centralized system.

Efforts to decentralize

Efforts to decentralize the Norwegian education system can also be seen as a generative mechanism in this study, in the sense that this has affected the local presence of educational institutions and, thus, the opportunity structures that form young people's perceptions of possible and probable educational routes. Nordkvelle and Nyhus (2017) describe how efforts to decentralize the Norwegian education system, especially after 1970, initially entailed aspects such as involving local schools, politicians and communities in the governance of education, or rooting the curriculum closer to the local environment in order to increase the relevance of the school to local conditions. However, from 1984, a deregulation of budget and other financial arrangements prompted the municipalities to develop their own aims and ideas for how they should develop the local school (Nordkvelle and Nyhus 2017, 224). The new financing model for the municipalities meant that the ministry went from earmarking money for certain missions to transferring a lump sum of money to the municipalities, leaving it up to the municipalities to prioritize between different sectors, According to Nordkvelle and Nyhus (2017), this gave the municipalities a much larger space for their own priorities. However, with a scarcity of public funding, the education sector had to compete with other public administrative and service tasks and sectors for which the municipalities were responsible, and at the local level the authorities were forced to make priorities and balance considerations that had to do with local politics. Solstad and Andrews (2020) point out that prior to the reform, the municipalities had no economic incentive to close down or amalgamate schools since the money came as earmarked grants. After the reform, on the other hand, the closure of a large number of small schools in peripheral (rural) areas (Knutas 2017) led to a widespread centralization of school provision. According to Solstad

and Andrews, the municipalities had the financial motive to save money by closing schools, and they had the power to do so, even if the national policy still was to keep a relatively centralized school structure throughout the country. The same is shown by Nordkvelle and Nyhus (2017) who point out that while the previous arrangement had secured for small schools a solid financing in remote regions, the new system weakened their position significantly. Karlsen (2006, 2014) claim that with the decentralization of responsibilities from state to municipalities, local authorities became left to their own devices to solve disparities between a decreasing population and a shrinking economy. The same tendencies are still ongoing to this day, and in the northernmost county in Norway, the number of schools have decreased significantly since the reform was implemented, making it a significant generative mechanism for young people's educational orientations and experiences, especially in rural areas.

According to Skinningsrud (2014), despite efforts to award more responsibility and autonomy for school contents etc. to the local school, municipal or county level, such decentralization efforts have not led to changes when it comes to power distribution, and real democratization has, therefore, not taken place. Nordkvelle and Nyhus (2017) have also questioned the same lack of transfer of authority in relation to restricting greater decentralization. The role of the state has, thus, remained prominent, with decentralized approaches being dependent upon reduced forms of governmental control. Therefore, processes of centralizing, decentralizing and *recentralizing* have represented the key dynamic for the governance of the educational system for many years.

Neo-liberal education policy

Traditionally, education policies were under the firm control of the nation state (Fulge, Bieber, and Martens 2016). At present, on the other hand, international initiatives are important triggers for reformulation of education policies, shaping national debates and educational landscapes. A third generative mechanism worth mentioning is, therefore, neo-liberal education policy, as described by Pring (2015), with its focus on managerialism, performance indicators, audits, inputs related to outputs, target-settings and efficiency gains. As Pring (2015, 21) puts it, this is an educational system where teachers 'deliver' the goods to the 'consumers' according to agreed 'targets'. The period of decentralization described in the previous paragraph was, according to Telhaug et al. (2006), followed by what they call the era of globalization and neo-liberalism, starting around 1990. The background for this new era was a need for better control systems for the education sector, among other things to get a clearer overview of resource use and quality measures employed. Nordkvelle and Nyhus (2017) point out that increased accountability together with a 'global perspective' on education gradually replaced a national-cultural perspective. They, along with other

researchers, for example, Karlsen (2014), have connected this development to the strong influences emanating from international organizations such as EU, UN, WTO, OECD and, in particular, to the PISA-activities of the OECD. Nordkvelle and Nyhus (2017, 229) state that the traditional values stressing the school's responsibility for the overall education of the students have gradually been displaced by a technical-economic or cognitive-instrumental rationale, where controlling the output through testing and grading plays an important part.

This development affects the opportunity structures and educational landscapes of young people in several ways. It has an effect on the content of the education provided, resulting in a standardization that is particularly relevant for the spatial perspective proposed here. The national core curriculum in Norway allows for taking local circumstances into consideration and for incorporating local contents in the teaching. However, the *incentives* to do so are missing. The school owners, the municipalities, do not have any obligation to develop and implement locally relevant contents, and in already overloaded schedules these are in danger of being deprioritized. Among other things, as a result of the neo-liberal education policy and educational managerialism described above, teachers work days are more than ever filled with numerous tasks in addition to their actual teaching; more and more administrative tasks, assessment work, following up students with special education needs, as well as their parents and so forth. All these tasks compete with more 'voluntary tasks', such as developing and implementing local contents, which often lose out and become deprioritized. In this way, teachers' space for manoeuvring in accordance with local needs may be affected by influence from neo-liberal education policy and the managerialism that follows. There are also other processes pulling in the same direction: the main assessments that are being made of the students, such as the national tests and final exams, are highly standardized. They are nationally provided and identical for all students. As schools spend time preparing the students for the tests, these forms of assessments compete for time that could have been spent on developing and implementing local contents in the teaching. Rural schools that make an effort when it comes to developing and implementing local curricula will not be rewarded for this, as long as it is performance on the centralized tests that are the goal. Such international initiatives may, therefore, have consequences for the spatial aspects of education, leading to a more limited concept of quality in education, where high quality means high PISA-scores.

As mentioned above, the opportunity structures and educational landscapes young people relate to can be traced back to how the education system is set up according to national education policy. As described here, neo-liberal education policy, a centralized education system, but also decentralization reforms affecting the education sector, are generative mechanisms explaining the orientations and actions behind young people's educational trajectories. Together they are responsible for the outcome.

However, as mentioned in the introduction, the powers of generative mechanisms do not necessarily become activated. The generative mechanisms outlined above represent potentialities that may or may not be triggered into becoming operative, and in the next section, we will explore space as a precondition for the activation of these generative mechanisms, in order to explain how the mechanisms may lead to certain outcomes in certain geographical locations and not in others.

Context and space as conditions for activation of potential powers

Above I have sought to identify, describe and explain the generative mechanisms that produce the observable outcome of early school leaving. Figure 5.1 sums up and illustrates the relationship between the different levels of reality and its constituent elements identified in the analysis. The powers and liabilities of the mechanisms have been specified, but we also need to take into consideration conditions that enable or restrict their operation. As stated above, CR upholds that what has been known to happen does not exhaust what could have happened (Sayer 2000), thus the future remains open. There are multiple possible futures, and the actual is only a part of the real world, which also consists of non-actualized possibilities and unexercised powers of the already existing structures and mechanisms (Patomäki 2006). Causal powers inherent in social structures and in social processes are understood as *potential* powers, and as pointed out by Sayer (2000),

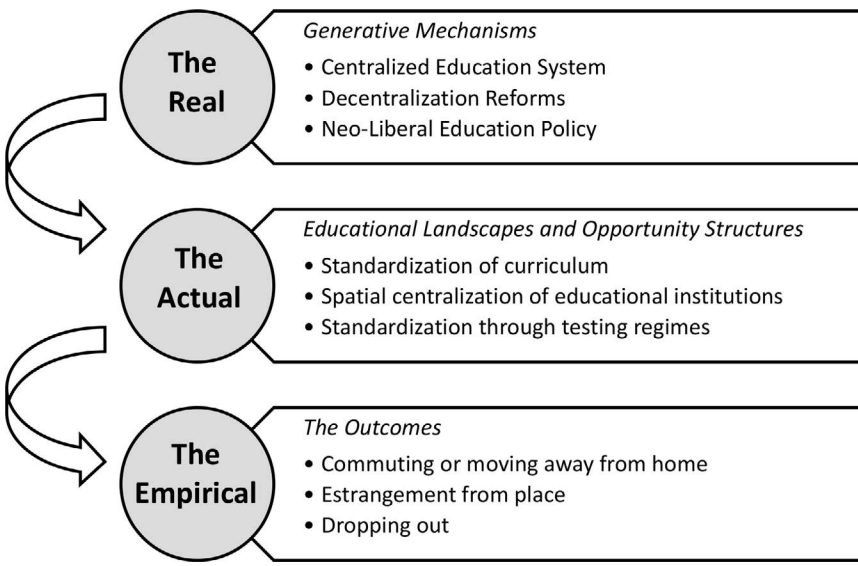

Figure 5.1 Overview of the spatial education analysis.

whether or not they are ever exercised depends on the presence of certain conditions or on actors' interpretations of situations, or of both. If they *are* exercised or activated, the outcome will also depend on different conditions, and the results can be unacknowledged or unintended. Thus, context, where space is concerned, represents a condition for the activation of potential powers and, therefore, as a mediating factor for the outcome of generative mechanisms. With context representing an enabling or constraining condition, the generative mechanisms play out in different ways at the empirical level. Events take place within geo-historical contexts, implying that the mechanisms deriving from the structures present are space and time specific. As pointed out by Sayer (2000), the same mechanism can produce different outcomes according to context, or more precisely, according to its spatio-temporal relations with other elements, having their own causal powers and liabilities, which may trigger, block or modify its action. Sayer emphasizes that given the variety and changeability of the contexts of social life, this absence of regular associations between 'causes' and 'effects' should be expected. The conditional nature of causation intrinsic to CR ontology implies that specifying enabling or restricting conditions under which the mechanisms operate become necessary. A mechanisms-based approach, therefore, has to consider the contexts in which the mechanisms function.

For example, the funding system for the education, described above, that leaves it to the municipalities to prioritize between the different forms of instruction and certification and between different municipal sectors may affect different contexts differently. Economic considerations may force smaller, less prosperous municipalities to initiate spatial concentration of educational institutions through school closures and amalgamations. In small, rural communities with geographically dispersed populations, these are reoccurring themes when economic prioritizations are to be made. At the secondary school level, we can find the same dynamic and a school structure geared towards fewer, bigger and more specialized schools, with the result that students have to attend school far away from their homes and engage in long-distance commuting or move away from home at a very early age. Again, this is especially true for those who reside in smaller, rural communities. A decentralized governance structure, therefore, has in many cases resulted in the increased spatial centralization of educational institutions.

Final remarks

In the analysis presented in this chapter, the primary analytical focus has been at the structural level, showing how the education system is set up to deliver education policy in terms of governance, organization and funding, and the relevance of space when it comes to the outcomes produced. Such outcomes can be, for example, students' educational experiences and orientations, student outcomes, equity and quality, or preparing students for the future. In a CR understanding of geographical education differences,

the domain of the real with the generative mechanisms put forward above is regarded as the causal agent of early school leaving – and not the individual student. Cultural and structural mechanisms condition the actions of agents, and these mechanisms, which are part of the domain of the real, are also always historically and spatially situated and conditioned. Space and context may work as constraining or enabling factors for the generative mechanisms at play, and, as outlined, what happens when these mechanisms are activated is part of the domain of the actual. In this chapter, I have argued that generative mechanisms create spatially specific opportunity structures that produce spatial differences in educational trajectories and outcomes. Then, how agents respond to the constraining or enabling structural and cultural contexts they have 'inherited' (Westaway, Kaiser, and Graven 2019) is part of the domain of the empirical, here shown through students' experiences and reflections when it comes to education. Part of the opportunity structure and agents' interpretations of opportunity structure is the 'learning to leave' paradigm that has been pointed out by Corbett (2007), where the educational system prepares students for life outside the rural communities, effectively de-qualifying them for life within rural communities.

In this chapter, several mechanisms particularly essential to explaining and understanding the spatial differences in young people's educational orientations and experiences have been identified. Space provides context for the operation of generative mechanisms and is as such crucial for understanding their manifestations and outcomes. Through the above analysis, I have specified the powers and propensities of the generative mechanisms and identified the causal tendencies produced by them, as well as detailing when those tendencies might be and might not be manifested and the conditions that enable or restrict their operation. The ontological stance of CR implies that mutual relations between micro and macro levels are emphasized – in both macro and micro oriented analyses. In order to understand spatial inequalities in education, we need to establish knowledge about the structures and mechanisms that are significant for how the education system functions at the macro level and the effect they have on individual actors' educational decisions. These things can play out differently in different settings, and we have to take into account the mutual interaction between individual, intentional actors and relevant societal structures and institutions, as well as material, physical structure and conditions. Analyses based on a critical realist methodology makes it very clear that societal structures and mechanisms are phenomena that are time and space specific. As shown above, generative mechanisms produce opportunity structures and educational landscapes or educational spaces, with centralization, decentralization and standardization, materialized in many forms, as key elements. The emphasis on the conditional nature of causal powers as potential powers is a reminder that all social analyses need to take space and time into consideration, and a CR ontology is a promising foundation for doing so.

Note

1. A comprehensive upper secondary system combines academic education and vocational training, offering students three general academic programmes and nine vocational programmes. After two years of vocational studies, or after completing the four-year vocational studies programme, students can enter university if they complete a supplementary year. Vocational education and training (VET) has a strong tradition in Norway and 50% of the students choose VET. Choice of study program varies somewhat from county to county and in the two northernmost counties, the majority of the students are in VET (52% in Troms and 60% in Finnmark). The completion rates in upper secondary education in Norway are below OECD average, and the biggest challenge facing the system is dropout. For the northernmost counties, the dropout rates are alarmingly high.

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