

Literature Review:

Research and evaluation of school centralization and structural change¹ The case of Norway

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The assignment

In connection with their work on municipal school plan number 4, the Southern-Trøndelag county construction and property service has ordered a research-memo that will gather expertise from research and reports on the impact on local communities during high school closures and/or consolidations. Since there is currently little expertise in this area, this memo will include knowledge from research and reports on elementary schools, as the consequences for the local community are thought to be somewhat similar to that of high schools. This assignment also includes a discussion and summary of the significance of schools in relation to the attractiveness of local communities.

The different meanings and definitions of the term rural requires a more extensive academic discussion. This is outside the scope of this memo; however, it is mentioned in part of the literature that is reviewed (for example, in the special issue of the International Journal of Educational Research, 2009). An important point here is those different types of locations and local communities, and the different degrees of urban and rural, are all-important factors when analysing the significance of schools in local communities. Research and evaluation that does not discuss these factors risks making the mistake of not taking into account the important differences between the local social, cultural and economic context. The same sensitivity that is utilized in individual studies and comparisons must also be applied to different national contexts and policies.

Need for research and investigation on school structure and settlement

Many counties have started restructuring processes within their high schools, but there are very few studies done on the consequences of closure and consolidation (Båtevik et al.. 2013).

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According to Egeland and Laustsen (2006), within international journals there are more than 100 references to school closures, but few of these discuss the effects on local communities and instead focus on school management, organization and the like (see also Cedering 2012).

Research on rural schools and local communities in Norway, Sweden, Finland, Scotland, and England is reviewed in a special issue on rural schools and rural society in the *International Journal of Educational Research* (2009). After a review of Norwegian research on the relationship between schools and local communities over the past 30 years, Kvalsund (2009) concludes that the relationship between elementary schools and the local community is under-communicated externally, and research on this subject is very limited. Båtevik et al. (2013) have the same findings in their study of high schools and local communities. In addition, research on the theme of schools and rural communities is somewhat older (1980s and earlier) and therefore newer research on the subject is needed (Kvalsund and Hargreaves 2009).

Båtevik et al. (2013) find no studies on the consequences for local communities coming from structural changes to high schools: "There are few studies that aim directly at the consequences for local communities resulting from structural changes in high schools. In fact, we have not found even one. (...) In the relatively few studies that are concerned with local society, elementary school is the main focal point" (pg. 11). Their review shows that most of the studies in this field are about the consequences for the internal relations of the schools (i.e. satisfaction, quality of teaching and learning) and studies about those students who have limited resources and fall behind. There are some economic analyses. They focus on how much can be saved by closing schools, and a few studies focus on the power relations in the actual debate around school closures. In the relatively few studies where local society is in focus, it is still the students, teachers and the schools who have the main role. Local society is described as an important element for students and teaching, it functions as a safe boundary and source of knowledge. Schools are rarely shown to play an important role in local society (see Åber-Bengtsson 2009, Hargreaves et al. 2009) "Not even in Norway, where we are notoriously concerned with everything that can affect those who live in the outer districts, are there very many studies of what closing or establishing/strengthening schools means in this context (Båtevik et al. 2013: 11).

Despite the lack of knowledge on consequences, Solstad (2009) shows that through the new income systems for counties (1986), whereby the counties themselves decide how much support to grant the schools, the centralization of schools has increased. Even though it was recommended not to close schools for economic reasons, the most common reason for school closure was just that, finances (sometimes covered with pedagogical arguments) (op. cit.).

This basis for this memo is to gather knowledge from research and other reports on the significance for *local society* during high school closure and/or consolidation. As mentioned, there is little knowledge on this subject; however, there is some transferability from studies on the closure of elementary schools. National policies and recommendations have been to refrain

from closing elementary and junior high schools for financial reasons. However, budget considerations are the most common reason for school closures. The centralization of schools has increased over the past decades. Larger schools are being closed or consolidated (Solstad 2009). The local opposition of school closures is often strong. This is explained by the fact that the local school is seen as a good and safe learning environment. At the same time it also plays an important role for the whole locality. There are fears of negative consequences for the local community if a school is closed; for example, younger families might no longer be recruited to the area. There can be contradictions between competing locations, and there are social and health repercussions that come with longer distances to schools (Solstad 2014).

Rune Kvalsund, from Volda University College and Karl Jan Solstad from Norland Research Institute represent two of the most central researchers within the theme of rural schools and local society in Norway. Together with Møre-Research in Volda, they represent those research environments who have done the most within this field here in Norway.

These researchers have participated in two larger school research projects; The Sparsely Populated Project (Solstad 1978) and The School Localization Project (Møreforskning Volda 1989-92). The School Localization Project found, among other things, that being a small school in itself did not mean that it was an expensive school (Løvik 1992). School closure did not immediately lead to relocation, but rather poor immigration and use of the local society over time (Hagen 1992). Moreover it was found that parents had more contact with small schools than large schools (Kvalsund 1991b, Myklebust 1991b). Kvalsund (2009) sums up more recent comparative research between large and small schools in urban and rural areas. He says that the comparisons show that the quality of education in small rural schools meets central requirements for schools (see Arnesen 2003, Skålnes et al. 1999, Solstad and Thelin 2006) like, social and cultural learning, parent-school contact, and use of local resources in learning and identity building (Kvalsund 2004). Kvalsund also points to multiple Norwegian studies which indicate that schools with standardized programmes and urban content both motivate and qualify the students to move away from local communities in sparsely populated areas, and that the centralization of schools ignores local society as something that has social and cultural meaning. Because of school closure and longer distances, transport to schools can reduce students overall well-being (see Solstad 1973). The Sparsely Populated Project showed no systematic differences between large and small schools when it came to results, but students with daily transport to school were in worse physical form than those who did not have transport. (Solstad and Thelin 2006). Others have found that the costs that are potentially saved by closing schools are actually outweighed by the increased costs of transportation and construction activity in the new receiving schools (Sjølie 2002). Again others have shown that globalization today can reduce the significance of local communities in general, for example when the connectedness to- and importance of localities loses its significance towards ones sense of belonging. These things can also be a factor in discussions on schools and local society.

There is however, little doubt that schools mean something to local communities, as Rønning et al. (2003) show through their descriptions of schools as service centers for citizens, as social arenas, and as carriers of culture. Therefore, even though smaller schools are more expensive than larger ones (Rønning et al. 2003), the wider significance of schools for local society should be taken into account.

Place Attractiveness – A complex term that requires a holistic analysis

DAMVAD and the Center for Rural Research have studied the county authority's effort to develop an attractive local community. Here, projects are analysed that have aimed to develop attractive regions for people and businesses. The main efforts of the county authority within the theme of 'attractiveness', seem to be centered on developing and facilitating local/regional culture and sports initiatives (DAMVAD 2015ab). There are, on the other hand, wide ranges of activities that can make places attractive. Attractiveness is a complex term based on individual needs, wants, affiliations and history. However, schools are mentioned less explicitly when location attractiveness is the focus of local research or local and regional development plans, but school availability is most definitely a factor here, as we can see from research on school and local communities.

Measures to increase local attractiveness can be aimed at appealing to businesses or visitors that create employment or immigration, or they can contribute to increasing the local attractiveness independent of the local labour market and its development. Telemark Research (Vareide et al. 2013ab) separates between three types of location attractiveness: business attractiveness, visitor attractiveness and residence attractiveness. This research highlights kindergartens, culture events, private services, access to nature, leisure activities and the aesthetic look of the city-center to all be important factors when determining local attractiveness. In theory, this is something that can be influenced locally. However, there are a number of structural factors outside a local community's control that also affect the inflow to communities (DAMVAD 2015).

School, attractiveness and population development

Newer studies on movement motivation in Norway and the Nordic countries show that moving is generally determined by social and environmental factors (Lundholm, Sørliet et al. 2012). However, elementary schools and high schools are not among the most important factors for moving to or from a certain place (Båtevik et al. 2013, Sørliet et al. 2012). In the academic literature (on elementary schools), it seems that school closure is actually a case when society is being depopulated, and not the other way around. Båtevik et al. mention that this literature gives too much emphasis to moving motives for the general population. This is due to the fact that parents with school aged children seldom move –and rather adapt to the local situation.

On behalf of Stange Municipality, Telemark Research has reviewed a report of the school structure in the municipality (Lie et al. 2014). Here, they reviewed the consequences of changed school structure in regards to settlement and attractiveness. This study also mentions that within the academic literature, there is a lack of support for the claim that rural communities die out if schools are closed. However, it is difficult to say what exactly affects local communities and increased settlement over longer periods of time. "If the population is reduced after school closure, it is difficult to prove that it is caused by the closure or if it was the result of something else that would have happened anyway" (op. cit. 88-89). Lie et al. refer to Peterson et al. (2001) who state that in rural communities where schools are shut down and there is a longer distance to travel to the nearest school, a stagnation of population will often follow. In these types of communities, relocation and little immigration are common traits that can lead to an increasingly older population and eventually depopulation. Nevertheless, Petersen et al. notes that these developments rarely come about from school closure, but rather due to issues concerning the labour market, business development, the composition of the population, and so on. When school closure follows these other local or regional changes, an already decreasing population growth is intensified. The informants of Lie et al. (2014) were worried for what might happen with the settlement if the school was shut down; they thought that people would move away and that no new people would move there – even though there is no research that supports this claim. However, Lie et al. also mentions "On the other hand, we do not find research that states that school closure does not cause negative consequences over time" (pg. 89), and shows that this depends on the distance to the new school. Increased costs for transportation will depend on whether or not there was already an existing transport system in place, and student well-being will depend on the age of the student (older students are generally more positive to a larger school environment than younger ones). Stange municipality notes that potential in-movers often call to find out more about schools and kindergartens, asking about the level of results in individual schools, and even visiting the schools beforehand – something which shows that schools and kindergartens are important when considering where to settle (pg. 91). Thus, it is possible to assume that these types of strategic choices will also vary if the settler is a newcomer, or someone who is returning to the location because of previous connections there.

Båtevik and his colleagues conducted a simple mapping of the restructuring and closure of high schools at the county-level (Troms and Oppland counties). They found that there were very few schools that closed during these processes. There were many examples of mergers and adjustments to different tracks or subjects, but no systematic effect-studies or assessments of the consequences for the local communities. Researchers are of the opinion that this happens because it is difficult to say exactly what kind of effect the school has on moving and settlement patterns. "(...) it is nearly impossible to report on what kinds of influence the school has on moving and settlement patterns because it is such a small part of the local community, and also just one of many factors that influence movement and settlement" (Hagen 1992 in Båtevik et al. 2013: 11). Båtevik et al. have a paragraph about locality attractiveness and population

development which is useful for this memo (pg. 11-14), and the consequences for the social relations in local society (pg. 15-16). Earlier literature about school, attractiveness and population development is summed up as follows: A Norwegian study from 1992 found no support for the claim that parents with children in elementary schools wanted to move from rural areas because of school closure (Haugen 1992). A Danish study concluded that school closure did not lead to a reduction in the population. Rather it was a reduction in the population that led to school closures (Egelund and Lausten 2006). In addition, American and English studies of school closures found that most schools were shut down because of declining population and student-numbers. Båtevik and his colleagues ask an interesting question: *Will this argument hold for high schools in Norway?*

Within the literature on international migration, school is one of the most important factors for determining family location. However, in Norway school does not have the same importance as a motivation for moving. Båtevik and his colleagues explain that the schools in Norway are dispersed and have no substantial difference in quality from region to region. Moreover, high school is something that is in demand only for a shorter period of one's life. In addition, there are a number of other things than high school that affect people's settlement choices.

It is important to pinpoint that studies on the motivations for moving are comprehensive studies that say something about macro-level trends. The fact that the school structure is dispersed is a general feature in Norway. Still, it can be important to identify consequences for different local communities that have incidences of school closure or consolidation. Båtevik and his colleagues also mention that the overall trends that are mentioned above do not mean that high schools are *not* an important localization factor. Those that are moving with children, or those who think long-term, will see high school as an important factor when deciding on where to live. Likewise, high schools are places of employment that require high competence. Their existence is important for other businesses and public sector recruitment.

Sogn and Fjordane county authority commissioned Båtevik et al. (2013) to study two local communities that has lost high schools. These studies also failed to show population reduction in those municipalities that has experienced school closure (at least in the short term). It is important to point out, however, that in both cases the schools were at a relatively short distance away from the new schools. In the neighbouring municipalities however, the students had to travel longer distances to their new school, and in these places, the development was poorer.² Researchers assume based on knowledge of regional processes that the long-term consequences of a high school being shut down can be that fewer people will settle in that area (and thereby reducing tax income, municipality level funding, supply of competence, degrading of public services and the social environment, and poorer recruitment to other sectors). This happens due to the fact that high schools are high competence working places that people are willing to move to.

² The authors do not mention what exactly was worse off.

The study by Båtevik et al. (2013) shows that by closing down high schools, certain aspects of the local culture and traditions will be lost. This became visible in the one case where the closed school represented the native Sami language and culture. Even though experience from this case is not directly transferable to other cases, it is possible that something similar can happen in other places. The consequences for the local environment are many (especially for those with special needs), as youth will often be forced to move into dormitories. The outer most regions will most defiantly notice the closures – as Båtevik and his colleagues demonstrate. They also see the problems that can come about from a lack of due process; distrust in politicians, local democracy and engagement can be reduced, and students can be discouraged from participating in various extracurricular activities because of that extended working day, travel time and moving into dormitories. Moreover, there is a larger chance that students will drop out after moving away from home, and businesses risk losing both profits and a labour with fewer youth in the region. Students will no longer be in the area, or shop in the stores, and are no longer candidates for jobs (full-time, part-time, or temporary work). In some cases, companies can lose apprenticeships because of school closures. Båtevik et al. go on to mention that the regional identity can be weakened; one's time in high school is an important factor in forming identity, and the location of the school can therefore be a place where one chooses to live in the future. At the same time, a good selection of schools with an acceptable distance to travel to school can make it more attractive to live in rural areas. All of these factors will vary depending on where in the region the school is located. Merging of schools can imply better provision of education within a reasonable distance – and strengthen that particular region in relation to other, larger regions (op. cit.).

There are many who have summarized earlier research and evaluation on elementary school in small communities (Solstad and Thelin 2006, Solstad 2009). Solstad and Thelin have also reviewed studies with a focus on high school training (pg. 108-118). They find it reasonable to propose that the drop-out rate is higher amongst those students who do not live at home, and the drop-out rate is largest in the first year, and larger for boys than it is for girls. “In Norway it is normal that dropping-out, lagging behind in school, and lower grades are all more normal for those students who live in dorms or have longer distances to travel to school”, however, a good overview of what this entails does not currently exist (Solstad and Thelin 2006, pg. 161).

School Size

Iversen (2012) completed a feasibility study of the altered school structure in high schools in Northern- Trøndelag county. The reason for the study was a falling number of students in the county, and a need to save money. The report was limited to the economic consequences. It discusses if different models can have different profits or losses, it pinpoints that changes would have both pedagogical and societal consequences (but these were not studied). The report also discusses the relevant literature and states that this has unclear conclusions (potential negative effects of school and class size increase with age, in some cases there is a positive effect of school and class size in high school, education availability in nearby areas has a positive effect

on graduation, and increased travel distance increases the chance of dropping out from high school). Iversen studied specifically Leksvik, Verdal and Levanger high schools, and the specialty schools of Inderøy, Mære and Meråker. The report gives some general assumptions on the potential for efficiency in these schools based on the existing literature: To best utilize the potential for economic efficiency, one must avoid large investment costs, and make simple adjustments with the available infrastructure. New school buildings bring along large costs, but they can have benefits as well. It is especially important to take into account that each issue will vary between the different places and schools.

The center for economic research (SØF) has made two reports for the Northern-Trøndelag county authority (Bonesrønning and Nyhus 2009, Iversen and Pettersen 2011). The center estimates effective use of resources in relation to school size, and finds that between 500 – 600 students is the optimal number (schools over and under this size have higher costs).

Lagestad (2014) from the University College of Northern-Trøndelag asks however, if larger schools is actually better. He refers to the increasing trend of smaller schools being shut down and replaced by fewer, larger schools. Solstad (2009) shows also that more and more larger schools are being closed. Lagestad has data from students in high schools in Norland county, and finds that the absence rate was generally lower in small schools with under 200 students (and especially lower in gym class). Lagestad shows that research on the significance of school size has been lacking over the past 40 years (in the 1960s and 1970s, there were studies about the learning environment in sparsely populated areas that showed that this was just as true in small schools as it was in the large ones). However, according to Lagestad the research on this topic has been remarkable in the USA: “This research shows that small high schools are seen as more advantageous than larger ones when it comes to a number of different issues. The advantages of small schools stand out in the following areas: lower dropout rates, more students complete school, student participation and motivation for learning, more involvement of the parents, less problems with discipline and violence at school, better well-being and more social capital amongst the students, better interaction between the teachers, and better results from the students. Based on this research, school-reforms have been put in place where replacing larger schools with smaller ones has been an important factor, something which has been followed through as well.” Lagestad mentions that even though schools in Norway are not necessarily comparable with those in the USA, it is a paradox that the trend in Norway is going in the opposite direction. He also notes, “One may argue in favor of larger schools from an economic perspective or to create a better academic environment for the teachers. These arguments have little to do with the perspective of the students however. Research from physical education classes shows that the importance of seeing things from the students viewpoint, and has shown the significance of a learning environment that secures interaction and safety”.

A publication from Sollien (undated) that is on the website of the Norwegian Directorate of Education and Training studies the correlation between school size and quality, and reviews the

national and international research on this issue. It is not a review with an explicit focus on rural communities, but it is relevant because of what it qualifies as small and large school. In an international context, schools with up to 300 students at the elementary level are classified as small. In Norway, schools with 90 or fewer students are labeled small. Sollien notes that there is little empirical research from Norway on the significance of school size, but she points to three examples. A study from Nordahl (2007) found that students in junior high (based from one municipality) that came from rural elementary schools had less self-control and were not as good at expressing their own opinions and actions, overall their teachers found them to have less social competence than students from larger elementary schools. Research from Nordland Research (Solstad 2009) and the University College of Volda (Kvalsund 2004) found however, that smaller schools are important social arenas in rural areas, and can create learning activities that are well anchored in the local population, culture and environment. This is an important point if regional political goals are focused on having an active and viable rural society in the future. Sollien points out that much of the international research is American, and concludes that the optimal school size is between 600 and 900 students. Research also discusses the optimal school size based on the students age (with younger students, smaller schools are optimal), and there are different connections between school size and results, independent of the factors one chooses to judge quality upon. A quote from Sollien (pg. 3) illustrates this: "Thus, researchers and policy analysts who are most concerned with "community" (Sergiovanni, 1994) will tend to recommend the smallest schools for nearly everyone; those concerned with outcomes will advise small schools, but only for a portion of the population; and those most concerned with inputs will recommend schools that are larger than those recommended by other researchers" (Howley, Strange, Bickel 2000)".

Sollien mentions a British review of the connections between school size and quality in secondary schools (junior high and high schools) where the findings are as follows:

- The larger the school, the better the academic results and presence in the school the students will have.
- But, it is common that the students will feel less connected to the larger school
- Relatively few studies investigate the connection between school size and teachers views of the school environment. But, in those studies that exist, there is a tendency for teachers to feel less satisfied with the learning environment in the larger schools when compared to the smaller ones.
- It is difficult to see systematic correlation between school size and the social competence of students.
- In larger schools the costs per student are reduced.

Summarizing, Sollien writes (pg. 7) "There is some evidence supporting the notion that small rural school give more possibilities for increased interaction between schools and the local community, and to integrate that community in the school learning activities. However, the Norwegian research in this area has generally been about school with fewer than 50 students.

Kvalsund (2009) calls for more research that is systematic, comparative, well founded and independent; at the same time he notes that there is never simply one solution to social problems. He also points to newer research that takes into account the different possibilities for schools and local communities to help politicians make better, culturally relevant decisions about school and rural society (op. cit.)

Nordic Studies

According to Svendsen (2013), earlier Danish studies recommend closing small schools. This was based on the positive aspects of scale advantages combined with declining population. However, there is no systematic calculation of the economic advantages that come with school closure. Svendsen also notes that the negative consequences are less visible, even though Danish real estate agents report that school closures lead to a fall in real estate prices and resettlement elsewhere. Closure of these important local gathering places increases the risk of making local communities less attractive as living places. The Danish rural society's study ³(2011) also points to a general opposition to closing schools in smaller communities. The opposition was evenly distributed amongst respondents from cities and rural areas. Svendsen looks at how many elementary schools that closed between 1993-2012 and why, and what effect it had on the municipal costs for elementary schools and other socio-economic costs that could be *thought* to stem from this. More schools are closed are in rural areas, but a large number of closures from 20XX-2012 were actually most common in urban municipalities, and not in the typical 'rural-municipalities. Closures have led to larger schools, but also noticeably more *private schools*. Svendsen finds that costs to other schools, including private schools, have increased with 165.5%. Scale advantages do not reap their benefits until the 13th year of operation. The creation of private schools assumes to give fewer benefits connected to scale advantages. Svendsen finds that the costs have increased the most in the municipalities where they have closed the most schools, namely in rural-municipalities.

Some costs have gone to expanding the remaining schools. Other explanations for why funds have not been saved, are thought to be the creation of private schools, more personnel and teaching time, better IT facilities and so on. The benefits of centralization are said to be economic savings over time, more networks for children, more extracurricular activities, more independence amongst children, empty school buildings have new potential, and a larger collegium of teachers. The costs of centralization are: a bad reputation when the school is closed, more travel, traffic and transport time, physical decay in the community, more private schools, loss of local enthusiasts and trust in politicians (especially when things are not done properly), new settlers in areas with few schools and fall in house prices might attract social

³ Related to the Center for Rural Research's Rural Society Study form 2011 and 2013

clients, loss of social cohesion and meeting places, new municipal costs (school transport and building of centralized schools), fewer tourist attractions and fewer rural communities to visit.

The costs associated with centralization remain difficult to measure. They have consequences for the local population, for the municipality and for the country's social economy. These consequences should be studied in every individual case.

Petersen et al. (2001) have reviewed the school structure in Skaun based on the economic, social and pedagogical factors. The economic advantages of closing schools were mainly connected to salary costs, while the capital and transport costs will increase. The conclusion was a changed school structure should only happen if the economical gains were so large that they outweighed the potential weakening of welfare and teaching level in the local communities. Freistad et al. (2004) concludes that Notodden's running costs have been reduced with a new school structure, but the saved funds are put into the capital costs of building the new schools.

Kollin and Eriksen (2010) have reviewed Nordic studies on the meaning of school structure. They summarized their literature review is as follows:

- There are economic gains to be made by closing or merging schools with fewer than 200 students.
- Larger schools seem to increase the academic level, but school size has only a limited significance for the students' academic results.
- School closure does not cause decline in rural society.

Sørensen (2015) analyses which factors that affect population development in rural Denmark. Physical capital (like closeness to schools, shops etc.) was not found to have a significant connection with population growth.

A newer publication by Egelund and Lausten (2015) looks at the consequences of school closure on rural societies in the period between 1990 and 1999 in Denmark. The study does say it explicitly, but the data material is thought to be about elementary schools. The study shows that school closure in itself does not have the destructive effect on local communities that one may fear. The main problem for local communities, according to Egelund and Lausten, is the lack of population and human capital, and in outlying areas, the closure of school is seen as a sign of the community beginning to die out, rather than a consequence of it (op. cit.). They mention also the importance of municipality reform for rural communities, but do not go into further detail about this. Egelund and Lausten identify different types of local communities and how these respond to the school closure process, from those that are viable to those that are dying out, in addition to island based communities. As mentioned, they find no clear signs that school closure in itself leads to population decline, on the contrary they find that if local communities are viable and have the right human capital, they will manage to replace the school with a private one or another institution that the community needs more. In island societies schools have another, larger significance and therefore they are help open for longer periods of time. In an earlier publication from the same study, Egelund and Lausten (2006) find

that different types of rural communities can determine how school closures are received. In vigorous communities there are often loud protests, and in other ones society is already dying out and the school closure process is not so dramatic. Egelund and Lausten find nothing that indicates that school closure leads to further population decline or less settlement. However, those who live in vigorous communities will often have the impression that their town will die out if the school is shut down. All of the Danish schools were closed due to a reduction in the number of students.

Amcoff has conducted a quantitative study of school closures in rural areas in Sweden to see if this affects moving patterns. There was a general consensus that school closure reduced movement to towns, and increases movement out of them as well, but in Amcoff's studies, this was not the case (at least in the short term). The number of students who lived in the rural communities was reduced due to the general urbanization processes and fewer children being born, not because of schools being shut down. There is also an impression that small schools are less economically effective than larger schools, but the arguments about lower quality and finances in smaller schools are not widely accepted. After school closures, the number of those who move away increases after 6-8 years, according to Amcoff, but this number is also dependent on the distance to the nearest town. The study does not show how inhabitants end up changing their opinions of the local community, something that can affect the future of that community.

Cedering (2012) has studied schools and the local society in one of Sweden's smallest municipalities, Ydre; a traditional rural community with a large decline in population. She started by studying how the closure of rural schools affected the everyday life and view of society for families with small children, and in that way she places emphasis on the way school closures affect individuals and local society. Over the course of the study, two of four schools in the municipality were closed because of reduced student numbers. The municipality calculated that they should be able to save four million kroner per year from these closures, but by the end of Cedering's study, they could not confirm any savings. The municipality feared that parents would move to neighbouring areas where they were actually working already, this was used as an argument to close one school as opposed to another. In Cedering's study, the parents were worried that if the school disappeared then shops would soon disappear as well, and fewer would want to move into that area, which would have an effect of consumption. Moreover, schools are important for a community to be viewed as an attractive place to live and move to, and less tax income would go to the municipality because of fewer people moving in. The locals who worked with agriculture were not so concerned with moving away as they were with a weaker local ownership due to the increased travel distance to schools. Cedering also finds that the local communities that lost schools also lost a connection between those who lived there and the community itself, certain social contact points were removed and people didn't meet in the same way they did before, or they found other meeting places. Cedering finds support for the same findings of Witten et al. (2007), which states that there are many students who have been affected by the changes that come from school closure. In addition to the social implications, there is also a change in traffic patterns, which means environmental, security

changes as well as increased costs for families due to more driving. No matter how local citizens feel about school closures, it is established that there will be less of connection to local society, its history and culture – and over time, this can change people’s feelings for their community. Even still, and in spite of opposition, the new situation that comes with a larger school can also be good, safe and stimulating for the students, just as Cedering also reports. Her research concludes that rural schools are very important for local communities, economically and socially, something which politicians should pay attention to. A problem can also be that planners may not have insight into how much school closure can affect individual lives. Unsurprisingly, an important finding from Cedering’s research is that how communities enact and motivate the closure decision has an impact on how this will be received by those who live in the area. This corresponds to Båtevik et al. (2013) findings that show how a lack of due process can weaken trust in politicians and local engagement. An important point for Cedering is that there is a need for studies on how children experience the effects of school closure.

American research – some more examples

Kannapel and Deyoung (1999) have reviewed literature on rural schools and rural education over the past 25 years in America. They claim that after one hundred years of centralization, consolidation and professionalization of rural schools, new problems in the form of un-personal schools, extra bureaucracy, and less parental engagement have emerged. Kannapel and Deyoung’s review an analysis that shows the ‘problem with rural schools’ is that they attempt to streamline the schools through different centralization processes and reform have taken away from their uniqueness, and have not led to better quality in education. They also claim that if rural schools should remain and be improved, reforms should build upon already existing strengths, especially their strong ties to the local community.

Nitta, Holley and Wrobel (2010) have completed a study on school consolidation in four high schools in Arkansas over the period of 2003- 2006. They looked at the effect it had on both students and teachers, (those who moved a new school and those who were in the school receiving the new students) and found four important things:

- Students have an easier time adapting to new surroundings, while the teachers struggled to develop new relationships.
- Almost all experienced the positive sides of consolidation (more subjects to choose from, social diversification, more interaction, and better professional development)
- Those who had to move had more challenges
- Overall, the consolidation was most difficult for the teachers who had to move.

Another study from eight high school districts in North Dakota show that both the areas where the schools were closed, and the new recipient schools, experienced that the academic quality and the social environment were strengthened. On the other hand, participation in society, consumption and overall quality of life was reduced in those places where the school was closed (Lie et al. pg. 89)

Lyson (2002) asks in an article in the journal *Rural Education* what school means for communities with 500 to 2500 inhabitants. With help from public statistics for rural areas in New York, he found that social and economic welfare is higher in those local communities that had a school. Schools are especially critical for welfare in the smallest societies that had fewer resources, institutions and meeting places. He also points out that the money saved through consolidation is actually lost through lower tax income, lower real estate value and losses for local businesses. Lyson finds that the value of housing markets and local infrastructure is higher in smaller communities that have schools than those that do not. The structure of the workforce is also significantly different in smaller communities with and without schools; there is more employment within typical middle class jobs, and more income equality in places with schools. In larger rural places with and without schools, the differences are more visible. This may be due the fact that there are alternative institutions and meeting places than the schools.

In conclusion, it should be mentioned that within the research on this topic there are many questions that are not adequately answered, especially in relation to high schools, teaching plans, and local society. See Solstad and Thelin (2009 pg. 141) for a further elaboration of the following topics: How well do schools follow demands, recommendations and possibilities in teaching plans when it comes to teaching materials and issues of local and national relations? What are economic analyses based on, and what are the total costs for the different solutions? Small schools will always be more expensive to operate than larger schools, but is centralization the best solution?

Conclusions from national and international research on school structure and school closure

- School structure and travel distance are notable topics within the national and international research on school structure.
- It is difficult to measure the effects of school closures, and more research on the consequences for local society is needed.
- It is difficult to identify the causal relationships between school size and quality.
- Much of the research on school size and class size focuses on elementary schools. There may be a positive effect between school size and student results for the oldest students, while smaller schools are better for the younger. Weak students and those with difficult social backgrounds may do worse in schools that are larger, or have larger classes.
- Small school are not always more expensive than larger schools, this must be judged in each individual case and context.

- Research on rural schools has, first and foremost, focused on the finances and organization of the school, and not on the significance of the school for the local community. There are very few empirical studies on the effects of changes in school structure.
- Often, the process of closure or consolidation of school starts because of reducing population, this leads to changes being made in the tax-financed public service (fewer students in oversized buildings means higher costs per student). School buildings can be rented out, sold, remain empty or be torn down (the last two alternatives cost more and should be part of the basis for making decisions based on feasibility studies). The economy and falling student number is often the motivation, and the economy can be set against local interests.
- School closure can have negative effects like less attractiveness, which can lead to less movement into an area and more movement out. Closure has additional costs that should be taken into account when calculating the total expenses; for example, school transport, additional building, and more personnel in the new school. Other economic effects that can come from closure are less investment in local communities where schools have been shut down; when choosing an economic establishment, one often chooses a community where there are schools.
- Closure affects more than the students and their learning space. The school is a resource for the local community; a memorial, related to history, strengthens a sense of ownership, and the school is infused with local culture and activities from the community. The school is more than a place for teaching, it is an informational channel telling how families are doing and what is happening in the community, it is a building for activities outside of school hours, a place for social networks and socialization in the immediate area. Schools contribute to processes that create identity, and the indirect effects of school closure are fewer local linkages. Small schools are important social arenas in smaller communities – many local activities are connected with the schools; learning activities that are anchored in the local population, nature and industries. The direct effects of school closure touch the economy, infrastructure and personnel cutbacks. The indirect effects are less social integration, which can lead to negative health implications (for example isolation, commuting, longer travel distance, and less active participation in local society and organizational life).

Specifically for high schools:

- Closeness to ones place of study has a positive effect on completion, longer traveling times has a negative effect.
- School availability does not rank high on surveys about the motivations for moving. This can be a result of that fact that Norway's school availability is spread out and has similar qualities (no general differences in quality that those who are moving need to take into account). Many other things that school and ones time at school also affect ones choice of living place.
- High school is something that is only desired for a shorter period in one's life, but having a high school in the area is important for those who are moving with children. Commuting takes from the free time that students have.
- Schools are a larger factor for employment. High schools attract part of the labour force that may not have moved there if it was not for that job.
- Business and the public sector may have problems recruiting competent personnel when the youth in the area cannot go to high school (a long-term consequence). Businesses want the schools to adapt to their own needs (for example programmes for young entrepreneurs or other trainee positions can connect local youth to the business environment). – this increased recruiting and these solutions can cost less than salary expenses for businesses.
- The consolidated school can become strengthened and better, while the areas with closed schools can experience a decline (experience from North Dakota). Youth who travel to the new schools make use of the services available at the school (and thereby strengthen them). Centralization can be negative for local communities, it it can lead to a better situation in the region as a whole (more selection etc.). Consolidation can be seen as negative in an area when compared to more commuting to ever larger regions. The regional center will win in all areas, while those on the periphery will lose during school closures.
- School closures create noise in local political processes. Those who are positive towards consolidations argue that the academic quality in larger schools is higher, while those who are against it argue that the consequences for the local community should be taken into account – this is also a debate within a larger discourse on central vs. periphery.
- Research is needed in this field, there is little Norwegian and international literature on the consequences for local society that come from consolidations of high schools.

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