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Title: Home school at the edge of chaos during the lockdown : Social workers' perspectives

Year: 2023

Version: Published version

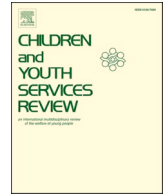
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Please cite the original version:

Tiitinen, L., Harrikari, T., Koivula, S., Romakkaniemi, M., & Fiorentino, V. (2023). Home school at the edge of chaos during the lockdown : Social workers' perspectives. *Children and Youth Services Review*, 155, Article 107250. <https://doi.org/10.1016/j.chilyouth.2023.107250>



Home school at the edge of chaos during the lockdown: Social workers' perspectives

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ARTICLE INFO

Keywords:

Home school
COVID-19
Complexity
Social capital

ABSTRACT

As a response to prevent the spread of COVID-19, during the spring of 2020, home schooling replaced classroom education. From the social worker's perspective, this paper explores how home school was organised among the social work client families and what types of resources were needed and launched to control the complexity of home schooling during the first wave of COVID-19 pandemic. The conceptual frameworks applied to theorise the self-organisation of home school and how resources were mobilised are complexity theory and social capital theory. The empirical analysis is based on digital diaries written by 33 Finnish social workers and analysed using a thematic qualitative content analysis.

The findings demonstrate the intertwined combination of social (social environment and communication), human (cultural, psychological and pedagogical) and physical (technological, spatial and biological) capital needed for the successful self-organising of home schooling. These capitals cannot predict the emergence of successful home schooling, nor can they function as a resource alone because self-organisation requires interactions between all essential dimensions. The results provide a deeper understanding for social work professionals regarding schooling and organising multidimensional support for children and their families.

1. Introduction

In the spring of 2020, the COVID-19 pandemic spread around the world. Combating the pandemic required swift actions from not only nation states, but also from all types of authorities. Like many other countries, Finland opted for a lockdown strategy and closed schools during the lockdown. The school closure continued for two months, from 18 March to 14 May 2020. Home schooling replaced classroom education, and school operations were based on distance teaching, on-line learning and self-studying. The transformation from classrooms to home schooling happened quickly. Studies have conceptualised the change as 'emergency remote education', highlighting how it differed from 'planned distance education' or 'online learning' (Beattie et al., 2021; Díaz, 2021; Trust & Whalen, 2021).

The transition 'to emergency remote education' required quick

adaptation from schools, children and their families. Most parents had little time to arrange schooling settings at home and to get prepared to support their child's education (Lee et al., 2021). Suddenly, students were expected to direct and regulate learning on their own. Especially for children at the elementary school level and those with special needs, the success of home schooling depended on their family's capacity to facilitate learning and provide support (Beattie et al., 2021). As a complex educational system, school is organised through countless formal and informal dimensions, such as schedules, peers and educational support, which may not be perceived at our everyday consciousness. The transition from classrooms to home school during the pandemic made many of these dimensions visible because they were lacking and had to be self-organised at home. School closures turned into a disruptive process with great challenges; however, it also provided unique opportunities to explore the essential dimensions of home school

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and its self-organisation.

In the current study, home school is conceptualised as a metaphor for a spatial and social arrangement where children and their parents—or other everyday carers—were placed into emergency remote education during the beginning of the pandemic. Adaptation to unfamiliar roles and schooling settings was challenging in many families (Häkkiä et al., 2020; Koskela et al., 2020; Lee et al., 2021; Pozas et al., 2021; Spinelli et al., 2020). In this situation specifically, social work professionals have been the frontline workers who have witnessed the struggles of the children and families, as well as the effects of home schooling, during the pandemic. However, empirical studies on social workers' perspectives on home schooling are lacking. In the present article, we search for answers to two questions from the social workers' viewpoints. First, how was home school organised in these families? Second, what types of resources were utilised in the families to control the complexity of home schooling during the first wave of COVID-19 pandemic. The conceptual frameworks applied to theorise self-organisation of home schooling and mobilising resources are complexity theory and social capital theory (Coleman, 1988; 1990). The data consist of 33 diaries, where social workers wrote about their observations and experiences during the spring of 2020. The diaries were analysed using a thematic qualitative content analysis.

2. Exploring home schooling during the COVID-19 pandemic

The context of the current study is Finland, specifically during the spring of 2020, a time when education was based on distance learning and online teaching at home schools. In addition to school closures, the Finnish government recommended keeping physical distance, remote working and families to take care of their children at home. At the same time, as students' needs for support increased, social and health care services, such as mental and school health services, were either completely closed, operated within a limited capacity or shifted online (FINEEC, 2020; Savilahti et al., 2021). Despite the closure, the Finnish school system succeeded rather well through the spring of 2020: schools shifted to the use of digital platforms in a flexible way and developed operating methods for teaching (FINEEC, 2020; OECD, 2020). Digitally and academically speaking, the country is well equipped for online learning because it is one of the most advanced digital economies in the EU in terms of digital skills, digital connectivity and internet user activity (European Commission, 2020). In general, the adult population is highly educated and hence, academically well equipped to support the home schooling of their children (Statistics Finland, 2020).

Shifting from school settings to home schooling on a short notice was a remarkable challenge for the children and their families. Most of the Finnish students were satisfied with home schooling (OECD, 2020; FINEEC, 2020; Save the Children, 2020). Nevertheless, many faced difficulties in studying and well-being because of home schooling (FINEEC, 2020; Koskela et al., 2020; Salmela-Aro et al., 2021; Save the Children, 2020). Home schooling was a confusing and novel concept for Finnish families; it affected many areas of life, such as the use of shared family space, daily routines and schedules, as well as positioning as the parent (Häkkiä et al., 2020; Koskela et al., 2020.) Finnish studies have suggested that the main challenges at home schooling have been variations in support received from the students' parents, functioning of the IT equipment needed in distant learning and students' self-directiveness for learning. The students experienced problems with patience, distractions, a lack of dedicated working space, increased workload or too difficult tasks and insufficient educational support (FINEEC, 2020; OECD, 2020; Save the Children, 2020).

Globally speaking, studies on home schooling during the lockdown have highlighted the negative impacts on children's health, social well-being and learning motivation. The harmful effects include symptoms of anxiety, stress, depression, a decrease in physical activity and an increase in screen time and digital gaming, as well as the irregularity of everyday rhythms, including sleeping and eating). Moreover, an

increase in the alcohol use, the risk of family violence and child maltreatment has been addressed in several studies (Brown et al., 2020; Griffith, 2020; Kauhanen et al., 2022; Lee et al., 2021; Mælan et al., 2021; Usher et al., 2020; in Finnish context see Lavonen & Salmela-Aro 2022; Ng et al., 2021; Save the Children 2020). Not all families, however, experienced the negative effects of home schooling, instead seeing some positive effects, such as increased leisure time with family. During home schooling, students experienced fewer disturbances, increased flexibility, creative learning, less anxiety because of decreased contact with peers and decreased exam pressure (Bubb & Jones, 2020; FINEEC, 2020; OECD, 2020; Thorell et al., 2021). Nevertheless, parents have found distance education functioned poorly, with insufficient support from schools and limited contact with teachers. They felt, among other things, that the primary responsibility for managing schooling was shifted to them. They faced difficulties in embracing the contents of the curriculum, the lack of pedagogical and technical skills and a lack of understanding regarding the new learning environment. The imposed teaching roles for which parents were not trained left some unable to cope with the expectations and demands of the educational institutions. (Bol, 2020; Brown et al., 2020; Chartier et al., 2021; Pozas et al., 2021; Thorell et al., 2021; in Finnish context see Häkkiä et al., 2020; Koskela et al., 2020; Sorkkila & Aunola 2022.).

Finally, studies have suggested that home schooling had the most negative impact on students with special needs and support, difficulties in mental health and language minority and migrant backgrounds (Bones et al., 2020; FINEEC, 2020; Kauhanen et al., 2022; Mælan et al., 2021; Nusser, 2021; OECD, 2020; Save the Children, 2020; Thorell et al., 2021). Home schooling may have a greater harmful effect on low-achieving students with low self-efficacy (Mælan et al., 2021). The home-schooling setting may have exacerbated the existing digital inequalities because not all children have access to an internet connection and the digital devices needed for successful online education (Bones et al., 2020; Díaz, 2021; FINEEC, 2020).

3. Theoretical models

3.1. Conceptualising the resources required for home schooling: physical, human and social capital

The challenges related to the transition to home schooling has raised the question of what kind of resources and their mobilisation are needed for the successful operation of home schooling. One of the most adopted frameworks in educational and family research for conceptualising 'resources' is social capital theory (e.g., Bourdieu, 1986; Coleman, 1988). In his work theorising the family background of a child, Coleman divided resources adopted from the family into three components: physical capital, human capital and social capital. Within the family, all forms of capital can facilitate productive activity and be used for supporting a child's academic achievements.

Coleman suggested that *physical capital* is 'being embodied in observable material form' (Coleman, 1988, pp. S100–101). He claimed that physical capital is 'ordinally a private good, and property rights make it possible for the person who invests in physical capital to capture the benefits it produces' (Coleman, 1990, pp. 315–316). Physical capital is a wholly tangible form of capital that can be used for producing products. As such, it can provide material resources that can help a student, such as having a fixed place for studying at home, appropriate nutrition and well-functioning technical devices (Coleman, 1988; 1990, pp. 304, 315–316). *Human capital*, in turn, is embodied in the skills and knowledge acquired by a person. Education is one form of human capital that can be invested in to acquire other capital, for example, through higher-paying jobs, higher professional status or improved communication skills. Within a family, human capital provides the potential for a cognitive environment for the child that aids learning (Coleman, 1988; 1990, pp. 304, 316).

The concept of social capital may be the most developed and best-

known innovation of resource theorising. According to Coleman, social capital is ‘the structure of relations between and among actors’ (1990, p. 302; 1988) that engage people in the social interactions, relationships and networks that are beneficiary for them. Three forms of social capital have been identified: obligations and expectations, information-flow capability and norms accompanied by effective sanctions. In a community, like in a school or family, norms direct energy for accepted activities by sanctioning and rewarding (Coleman, 1990). Coleman (1988) suggested that social capital can be used for achieving other capital, and it is essential for the creation of human capital for the next generation; he highlighted that human capital would be relevant to a child’s educational growth only if social capital is mobilised and utilised in upbringing and education. Social capital within the family can offer a child access to the adult’s human capital, but this depends on the physical presence of, and attention permitted by an adult to the child in the family. Hence, social capital that has value for a child’s educational development can also be found outside the family. External social capital can be derived from the community and can consist of the social relationships that exist in the family or relations with the social institutions (Coleman, 1988).

3.2. Modelling the home-schooling process and environment: The complexity theory

Social capital theory can conceptualise what individual and collective resources are needed for a functioning home school, but it does not allow for conceptualising the systemic formation process of the home school in the family. In conceptualising these systemic principles of formation, we adopt complexity theory, which provides a set of concepts that enable different ways of viewing a research object (Bousquet & Curtis, 2011; Kuhn, 2018; Ward, 1995). From this large set of theories, we utilise the concepts of emergence, nonlinearity and self-organisation.

Byrne (2005, p. 97) defined complexity theory as ‘the interdisciplinary understanding of reality as composed of complex open systems with emergent properties and transformational potential’. One of the key principles is that the world is seen as an entity where things and phenomena are intertwined, and these entities cannot be understood by breaking them down into parts and examining the parts one by one. Thus, the principle of *emergence* suggests that the whole is something more than the sum of its parts (e.g., Kuhn, 2018, p. 77). Moreover, ‘complex systems’ are system parts or subsystems that are connected and that interact with each other in multiple ways (Sanger & Giddings, 2012). Social groups, such as families, are made up of people interacting with one another in multiple and contingent ways to form a complex adaptive system (Stevens & Cox, 2008).

Complex systems operate and adapt, self-organise by themselves, here through internal and external interaction and stimulation (Stevens & Cox, 2008). Self-organisation follows whenever new stimuli are introduced to the system and reaction is required. This is, in terms of complexity, a *bifurcation point*, where the system oscillates between two or more possibilities. Because these types of stimuli are repeated, the system meets continuous bifurcation points, which require reflecting and making choices that could further restrain or enable the available options in the future. In the case of home schooling, the interactions between school and home reaches the bifurcation point, at which some type of reaction is expected from a family or student to organise schooling.

Complexity theory states that the most optimal state of the system is at the *edge of chaos*, or the border between the static and chaotic states of the system. At the edge of chaos, the system maintains creative growth by having the necessary interaction between the parts of the system, combining negative and positive feedback and maintaining a sufficient structure to ensure a degree of continuity and stability (Hudson, 2000; Stevens & Cox, 2008; Ward, 1995). In this case, constant encountering of bifurcation points will lead to self-organisation. If the system, in this case ‘home school, is in too *static a condition*, it would not be prone to

learn, able to receive information for its evolution or capable of adapting. At the other extreme, in a *chaotic phase*, the elements of disordered behaviour, several extensive claims, a lack of necessary resources or insufficient interactions between them cause the family to be unable to bring about the novel emergence of home school (Stevens & Cox, 2008; Ward, 1995).

One of the key elements of complexity theory is the proposition of the nonproportional relation between cause and effect, in other words, *nonlinearity*. Complex systems can adapt, evolve and change the rules of the interaction. Because the behaviour of complex systems is a nonlinear process, these systems are often unpredictable (Stevens & Cox, 2008). Small random changes in one area can lead to large-scale changes in others (Green & McDermott, 2010; Stevens & Cox, 2008). Therefore, the possibilities to predict the emergence of the system or effect of any interventions are limited (Sanger & Giddings, 2012). The stability and order can arise spontaneously as the individual dimensions of a system cooperate and impose constraints on each other to adapt to fulfil the needs (Graham, 2009; Stevens & Cox, 2008). This may surprisingly cause *antichaos* because disordered systems spontaneously emerge in a highly functional order (Graham, 2009).

4. Methodology: data, ethics and methods

The analysis focused on home schooling, a spatial and social arrangement where children and their families were placed for emergency remote education during the first wave of the pandemic. We have analysed the resources adopted and self-organisation mobilised in a unique environment where the principles of ‘glocal’ complex systems, that is, emergence and nonlinearity, become evident. The data utilised consist of 33 diaries written by Finnish social workers during the spring of 2020. In mid-March 2020, the research team posted a diary writing request to a closed Facebook group of social work professionals; they were asked to write diaries about three issues, as follows: What kinds of observations and experiences do you have about the phenomena and challenges that occur in the lives of social work clients during the pandemic? What challenges do social work, and its practices face during a pandemic? What kind of thoughts does the pandemic period evoke in you as a social work professional?

The research ethics followed the national guidelines of the Finnish National Board on Research Integrity (TENK, 2019, pp. 47–67). The gathered background information was limited; only their age, gender, professional title, education, current working title and the main client groups with whom the participant was working were asked. Because the participants wrote their diaries as individuals and licenced social work practitioners, no institutional background information was collected. Most of the employees who described the activities of children and families in their notes worked in child protection, immigration services and schools with a role to support families and students, and help finding solutions to their problems. The authors were informed that they may write at their own pace, but the diaries were requested to be composed until the end of May 2020. Before sending the diaries to the research team at the beginning of June, the participants were informed by a specific letter that sending the diaries to the research team meant giving one’s informed consent. Moreover, the participants were told about their right to withdraw from the study, secure data storing and processing practices, as well as ensuring that no individual agents or units will be identifiable in the forthcoming publications. All identifiable information was anonymised from the data. Finally, 33 diaries were returned to the encrypted project e-mail. In total, 94,139 words were collected.

For the current article, the diary data were analysed using ATLAS.ti data analysis software. At first, all notes about children, youth, students and pupils were searched from the data (379 notes). After removing some irrelevant notes, such as mentions of the author’s own children, the data were coded. Coding was performed by applying a qualitative content analysis (Yin, 2011) to identify and organise notes (mentions

and sentences) that referred to home schooling. In the next coding cycle, the dimensions of home school were coded, seeking answers to the following question: *What is mentioned as a benefit, success, expectation, feature, advantage, disadvantage or shortcoming related to home school?* The dimension was conceptualised as material or immaterial and single part, element or component of the home school that the social workers identified as existing or non-existent. In the data, critical observations of the home schooling were prevalent because the social workers were especially asked to write about the challenges occurring in the lives of their clients during the pandemic. The findings were classified and organised in terms of three forms of capital: social, human and physical. Finally, indications according to the complexity theory were searched from the data. The theory can enable reconceptualisation of the data and make the elements of a self-organisation process of home schooling visible.

5. Results

5.1. Mobilising social capital for home schooling

The social capital identified for home schooling emerged in two dimensions: *social environment* and *communication* which are both essential for reaching a bifurcation point. The basis for the social environment dimension was an adult or person physically or virtually present and able to care, give attention and help the child with their studies. This adult was usually the parent or worker at the child protection unit. The social workers reported about families that were overloaded with the increased school-related obligations and expectations, as well as with the new challenges that came with balancing work and childcare. Access to external resources, such as public childcare or grandparents, was limited because of the claims for physical distancing (also Powell, 2020). According to the social workers, the situation became worst in single parent families, families with several small children or children with special needs:

This single mother who works in the health care sector, doing two shifts, with an 11-year-old child who has big problems with emotional and behavioural regulation. Their family's daily logistics just don't work when grandparents can't help. (D11/20/03/30).

One of the social workers' main concerns was the well-being of the parents because they usually recovered at home and needed some private time without their children. Instead of recovering during school days, they were now assigned extra responsibilities from school (Salin et al., 2020): families were expected to organise not only schooling, but also breaks, playtimes and other activities, especially for primary schoolers during the schooldays. Consequently, the social workers reported high levels of parental stress and the escalating need for child protection services because the families were unable to respond to the multilapping claims during home schooling in social isolation. Simultaneous extensive claims (excessive stimuli) to the family system caused a chaotic phase, preventing any evolving necessary for adaptation:

—violence escalates between both parent and children and between siblings. There are signs of strap usage and tossing/scraping by. The worst brawl originated from when the primary school-aged children did not settle down for their home school assignments. (D2/20/04/29).

The families struggling with various difficulties, such as dysfunctional family dynamics, violence, substance abuse and mental health problems, had inadequate resources to organise advantageous social environments for their child's home schooling. Moreover, home schooling was not only an arrangement implemented at home and between the closest family members, but also the interplay between home and school systems. As such, this required communication between students and teachers.

The social workers constantly advised families to contact teachers about challenges in schooling, and they also contacted schools on behalf

of their clients. The parents' readiness to contact a teacher was affected by one's social and human capital, for example, communication skills and cultural differences in the tendency to give and ask for advice. In particular, the social workers were worried about the students who completely disappeared.

More reports are starting to come that children have not been reached from the school at all. (D17/20/04/9)

During their closure, schools began to report to child protection about their students who were 'lost'. Missing communication is a sign of a closed system that is unable to receive information for its evolution and therefore stay in stagnation.

However, in some cases, self-organised family dynamics led to unpredictable results. For some clients, isolated circumstances aggravated existing problems or created new ones, but for some, home schooling was a positive experience and that helped them flourish in the bubble of isolation (also Chartier et al., 2021):

It was strange to note that parents who had not been able to cope before, despite the support family, day care/school or support person, left all services on break and managed very well. Those students who needed strong support at school and the presence of an adult managed distance learning at home. (D4/20/05/28).

In these types of families, the changes in social circumstances functioned as a launching point for adaptation. As the unexpected antichaos emerged, they were able to mobilise their capitals in a novel way, organising highly functional home schooling.

5.2. Applying human capital in home schooling

Three forms of human capital affecting the home school arrangements were identified in the analysis: cultural, emotional and pedagogical. The cultural dimension was related to family culture, values, emergent linguistic skills and digital competencies. Each family represents their own culture, including values, which affect how they react to events, what they appreciate and how they live their lives. Likewise, each school and teacher have their own cultures and values. The social workers' diary entries manifest how the value differences between families and schools influenced home schooling. Occasionally, the views about home schooling led to conflicts, requiring negotiations between agents:

During the corona, these differences in values seemed to worsen. The school's vision was to ensure that students did not laze themselves at home. (D27/20/04/21)

One of the most common tensions described by the social workers followed from the contradictory opinions about the sources of the challenges in home schooling. In this setting, the social workers positioned themselves in an intermediating position: they helped teachers, students and families evaluate challenges, decrease tensions, solve cultural conflicts and increase mutual understanding (Romakkaniemi et al., 2021). By assisting interaction, they supported achieving a bifurcation point. Negotiations were not always that plain because, for example, joint language did not exist. To understand the instructions given by the school and help the child study, a certain level of linguistic skills was required from the parent. In addition, digital competencies to support the child in using the digital devices, connecting to the internet, acquiring passwords and using the applications was a real advantage for the parent. In particular, small children and students with special needs are obliged to rely on their family's ability to help with technology (Page et al., 2021):

I can't even imagine how it would be possible for adults to support their children in studying if they do not have Finnish language skills, the ability to interpret the teacher's instructions or use the equipment that their child is supposed to be using. (D22/20/03/30)

Home schooling is a real challenge as Wilma passwords [application for communication between school and home] are missing from some clients who cannot/don't have energy to help the child in teaching. (D17/20/03/15)

Every new requirement or information from the school was stimuli affecting the home school system and causing a bifurcation point, which required a reaction. In their diaries, the social workers described many types of reactions, as their clients' mental expressions towards home schooling. The emotions expressed by the children and their parents were fear and anxiety, as well as feeling stressed, exhausted and safe (Thorell et al., 2020). Mental expressions were related to, for instance, a lack of support and difficulty in school assignments. In addition, the social workers noted that the family's ability to maintain daily routines for sleeping, dining and leisure times supported home schooling. During the school closure, some students, especially teenagers, were prone to impulses and were distracted from studying by other activities, such as excessive gaming (see Shenhav et al., 2013; Martarelli et al., 2021). The social workers wrote the following:

A teenager just plays and gets angry if you try to restrict it— (D16/20/04/14)

A message from one of the teens in the middle of the night that he can't cope with. Many have their sleeping rhythms messed up, and there's no schedule for the school day. (D4/20/03/26)

The pedagogic dimension of human capital in conducting home schooling refers to the adoption of academic knowledge and inputs for studying and teaching within the family. Even though the schools had the main educational responsibility, families had to take educational positions to assist in home schooling. This required some understanding from the parents about the current schoolwork and ways of teaching. The social workers reported on their own and the parents' uncertainty about assisting children with school assignments because their conceptions of the school world were outdated:

A social counsellor is expected to act as a mother for the children and home school assistant. There is neither experience and, in fact, understanding of the current school world. (D14/20/04/06)

The adults' experiences of schooling and understanding of studying methods may have originated from their own childhood or foreign culture. Thus, children were located amid conflicting expectations when educational conceptions of home and school collided. In their diaries, the social workers repeatedly reflected on inadequate educational support from school, leading to failed school assignments and overwhelmed parents (Chartier et al., 2021; Page et al., 2021). For many children, self-studying was more complicated than studying in the classroom and they would have needed intensive pedagogic contributions (capitals) from the school.

In cases where the child did not achieve academic expectations, not only families, but also social workers, were obliged to organise additional educational support. They were forced to observe schooling performance, evaluate problems in performance and inform the school of the challenges. Once again, social workers implemented internal and external interaction for reaching a bifurcation point. In this case reasonable adjustment in the studies of children who were unable to attain necessary educational support:

After several students were exhausted because of the school burden, I contacted the school about their issues and demanded adjustments. (D27/20/04/21)

Despite the calls for educational interventions and support, not all the schools were responding to the students' needs. Promoting support required both knowledge of the student's rights and advocacy from parents and social workers. A lack of pedagogical capital was a notable blockade in a nonlinear self-organisation process. Home schooling was about balancing at the edge of chaos between educational support and

demands. According to the social workers, this balance was sometimes spontaneously organised at home schools for the students who had previously experienced school setting as too demanding. The emergence of a home school evolved through constant beneficial choices at various bifurcation points. For some, the successful choices were individually scaled school assignments, a favourable learning environment or dedicated educational support:

Some families also told me that during home schooling, they haven't had to be nervous about the teacher calling and telling them how bad the day has gone or receiving Wilma-message about bad behaviour [Wilma is an application for communication between school and home]. For some children, the school environment is too demanding, and if the home has the resources, the home environment can serve as a better learning environment. (D30/20/Week13)

5.3. Physical capital dimensions of the home school

In addition to social and human capital, the dimension of physical capital played a role in home school. In fact, physical capital, in many respects, appeared as a condition for the mobilisation of the two other forms of capital because here, physical capital refers to the financial resources for providing the necessities and other material resources that can aid the child in academic achievements. Three types of physical capital were distinguished in the analysis: technical, spatial and corporal.

First, the technical dimension of physical capital refers to access to technological supplies and devices required for home schooling. Usually, teaching was organised via online video applications, which required a laptop, smartphone or tablet and high-speed internet connection:

An example from a family with three school-aged children. They have no computers, and the young have tried to attend distance teaching by their mobile phones. The school informed that it is not able to loan any computers. Eventually, I managed school to borrow tablets for them, but it is impossible to download the Teams app to tablets, through which most of the lessons are organised. (D27/20/04/13)

Without access to school lessons and assignments, families were unable to evolve from being a 'home' to being a 'home school'. They stayed in their stable condition because they could not achieve the interaction required for the bifurcation processes. In their diaries, the social workers drew stories about various forms of digital inequality. Families with low income or several children were not able to provide the required up-to-date devices for all their children. Digital inequality was not solely dependent on the economic status of the family, but also geography and location because the high-speed internet connection was not available everywhere. Besides technical equipment, the entries in diaries manifested in how home schooling required spatial and other material resources from families, such as a place to study, a desk, a chair and some other school supplies and how, in this respect, low-income households were poorly equipped. The social workers reported on assisting families in these cases:

A mother applied supplementary social assistance the past week for the vocational school student's desk and chair because of distance studying. (D16/20/05/14)

A fifth-grade child from a poor family sent to me a message that her math notebook is full and there is no other notebook at home. (D27/20/03/19)

The major physical dimension of the home school mentioned in the diaries focused on the children's corporal well-being, nutrition and the daily meal during the school days. Because school canteens were closed, the school meals, usually provided free of charge by the school, had to be organised by the families. In addition to the increase in food expenses caused by meals, families were obliged to prepare meals and remind

their children about mealtimes. Later, during the spring of 2020, all schools started to offer meals to students, with variations in quality, quantity and organisation of distribution. Picking up meals from the school placed families in different positions in terms of geographical location and financial and social resources:

They are financially tight and also need to save on food. At school, the children would get food. It is possible to pick up food from the school, but they have a long trip to go by car and do not have the money to buy fuel. (D13/20/04/05)

The school only gives food to the guardian, but the guardian is not able to pick it up because of a mental problem. (D17/20/04/07)

According to the social workers, picking up meals was not possible for all the families because they had no money for the fuel or could not comply with the other expectations set by the schools, referring here to issues such as timetables or personal requirements. Thus, lack of physical capital was limiting options at the bifurcation points by preventing external interaction and blocking self-organisation of home schooling.

6. Discussion

In the current study, we have analysed home schooling and its conditions in the context of emergency remote education. During the first wave of the COVID-19 pandemic, the schools were closed, and families were expected to organise their children's home schooling. Consequently, two research questions were presented: 1) How was home school organised in families? 2) What types of capital were mobilised for organising home school successfully? These questions were explored through the diary data, where social workers described their perceptions of home schooling from working with their clients and examining the

effects of the school closures on these families.

In the spring of 2020, the emerging viral outbreak was unexpected and required adaptive resources from families. Many educational resources provided earlier by the school were not transferable to the home school. Even though the same types of educational resources required presumably existed at the school, they were context bound and remained at the school. Consequently, the children and their families were pushed towards new stimuli and into a chain of changes where they self-organised and adapted through constant encounters with bifurcation points, requiring reflection and choices to be made that could further restrict or broaden available options in the future (see Fig. 1.). This manifests how environmental conditions, the feedback through various elements of the system as well as changes in other systems forced the home school system to continuously evolve (Hudson, 2000; Stevens & Cox, 2008; Ward 1995).

From the beginning, the families started to mobilise their capitals for home school purposes. However, as the entries in the social workers' diaries have demonstrated, some client families failed because the families' capitals could only function as a pre-existing potentiality for the emergence (see Goldstein, 2018, p. 510). Some families stayed in their stable or stagnant mode and were unable to reach bifurcation points because of insufficient interactions between the home and school systems or between the people within the family system. Therefore, they would not be prone to learn, able to receive information or capable of adapting from being 'a home' to 'a home school'. For some families who met several simultaneous and extensive claims, the lack of necessary capitals or insufficient interactions caused a chaotic phase. In chaos, they were unable to reflect and learn; the choices made at the bifurcation points further limited their options (Stevens & Cox, 2008; Ward, 1995).

The successful emergence of home schooling in the families followed

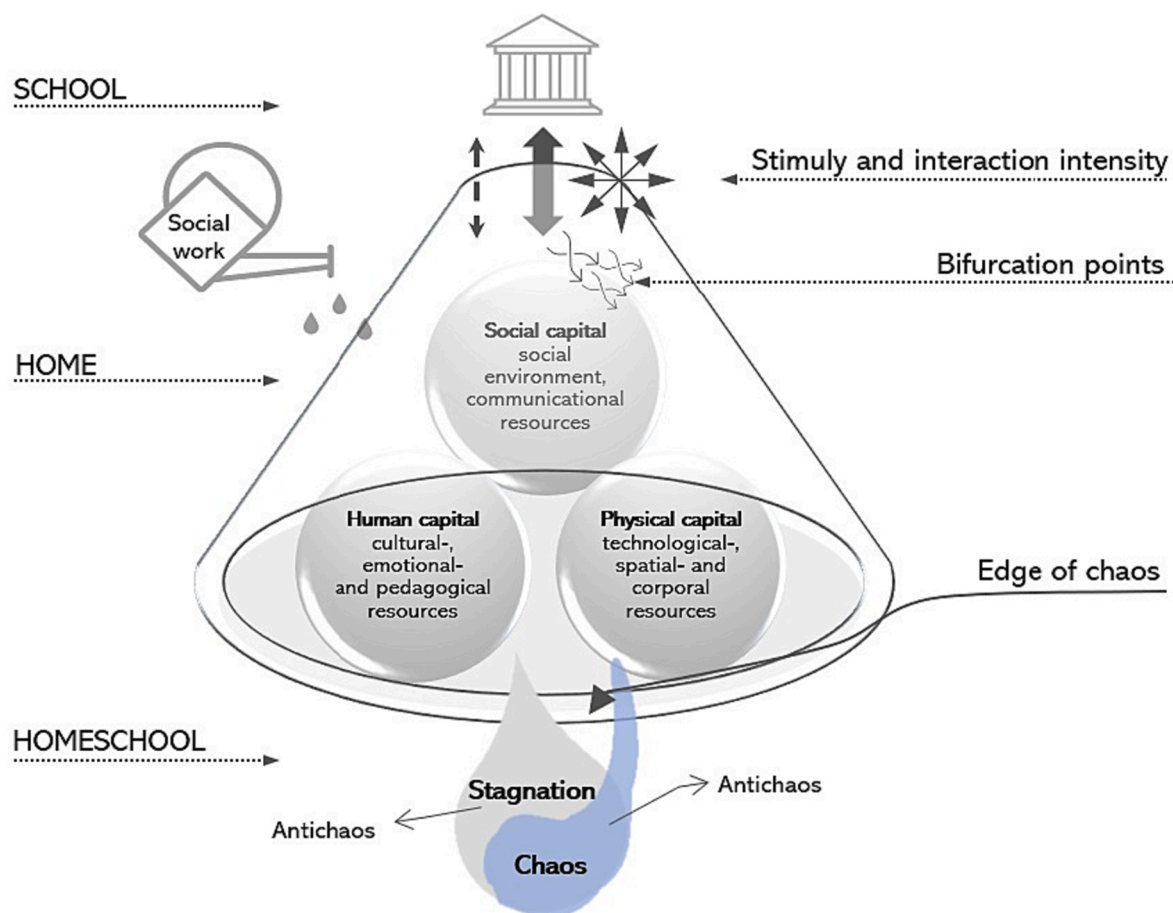


Fig. 1. Self-organisation of home school at the edge of chaos.

from balance between static and chaotic states of the system, here termed the *edge of chaos*. At the edge of chaos, families constantly encountered the bifurcation points, changed their actions spontaneously, mobilised their existing capital and maintained their creative growth by interacting with schools and authorities, as well as following their feedback (see Hudson, 2000; Stevens & Cox, 2008; Ward, 1995). Moreover, the data demonstrated some *nonlinear* processes and developments in the self-organisation of home school because some children succeeded against all odds at functioning better at home than school. These home schools resulted in *antichaos* because they managed to mobilise the most important resources for individual learning (increase in flexibility, decrease in disturbances, demands, stress level, negative contacts at school; see, e.g., Bubb & Jones, 2020; Thorell et al., 2020). Stability and order can arise spontaneously as the individual dimensions of a system cooperate, imposing constraints on each other to adapt new circumstances (Graham, 2009; Stevens & Cox, 2008).

The principle of emergence in adapting capacities demonstrates a sensitive dynamics of home school: in terms of successful functioning, the adequate capitals must all be present, but together, they can form a novel and synergic socio-ecological entity. The analysis shows how home school is formed through multiple intertwined dimensions where *social, human and physical* capitals (Coleman, 1988) are required to move forward from the bifurcation points. All forms of capital—existence or nonexistence—are adequate parts of the evolution of home school. In many respects, the material resources (functioning IT and remote access, suitable study spaces, nutrition) provided the necessities for home school. These factors alone set families in different positions in organising home school, and the selective type of data demonstrates how low-income families especially suffered from digital inequality and a lack of financial resources.

Organising meals during home school days was located at the intersection of material and human capital because both were required. Several other modalities, mainly duties, responsibilities and obligations, were given to the home schoolers and organisers, which led to emotional tensions and value conflicts between home and school. The setting was anything but simple in families because suddenly, four separate systems—work, school, family and leisure—were compressed inside the same four walls during the lockdown, causing confusion in positions and new formations of spatial and temporal practices. Parents were expected to mobilise their *human capital* by organising and controlling their children's daily routines, promoting the school's goals and values, refraining from negative emotions and communicating with teachers and other authorities in an appropriate manner. Schools were responsible for most of the academic inputs and expectations, but home schooling required digital, academic and pedagogic skills from the parents.

Finally, the presence and attention of an adult available and able to help the child with school tasks was one of the most important factors of successful home schooling. The importance of adult presence was related to the child's age and developmental stage: the younger the child was, the greater presence, support and control was needed. In terms of social capital, families were expected to organise a wide variety of academic and non-academic activities, which implied varying internal and external resources to respond to the expectations. It seems that the family's social circumstances and existence of social problems vitally affected successful self-organisation. For example, home schooling required communication between the home and school, and a lack of communication was regarded as unsuccessful home schooling.

7. Conclusion and limitations

The complexity of home school demonstrates that it was not primarily built of the academic resources provided by the schools, such as online teaching and school assignments, and many capitals were not transferable from school to home school. The home school was self-organised at home as a result of the interactions between its

components. The emergence of a successful home school emerged out of the utilisation and interaction of entangled social, human and physical capitals. Because of spontaneous nature or self-organisation, the emergence of home schooling was not predictable. Self-organisation of home school remained chaotic if the family experienced too extensive claims, lacked the necessary capitals or had insufficient interactions between the dimensions. Emergence required all the dimensions important for the individual student at the time, interaction between the dimensions and constant feedback. Social workers role related to homeschooling was to support both internal and external interaction in families, and to promote families to achieve their necessary adaptive capital.

The results of the current study can provide a deeper understanding for social work professionals while they organise multidimensional educational support for children as a part of the social work agenda. Moreover, the results shed light on the development of educational systems when emergency remote education is prepared for in the future. Our empirical analysis, however, certainly has its limitations. First of all, the questions presented for the authors were open and of a general nature. They were not specifically related to the research questions or the theories applied in the current study, which may explain the perspectives and observations chosen by the social workers in their diary notes. Second, the study was implemented in the Finnish context and with qualitative methods, which should be kept in mind when interpreting the findings. There have been fewer viral infections in Finland than in elsewhere in the world, and the social service system ranks high when looking at international standards. However, social workers seem to have faced similar challenges around the globe (Harrikari et al., 2023). Third, qualitative diary data, in turn, can provide an authentic but limited view of everyday social work practice. The experiences of social workers and the episodes they described in their diaries are mediated in nature, focusing only on the first wave of the pandemic. Considering further research, it would be important to analyse families' and especially children's own views for self-organisation and the factors that promote it.

Funding statement

Writing this article is supported by Academy of Finland, The Strategic Research Council grants 335656/2020, 353971/2022 and 335442/2020, and The Ministry of Social Affairs and Health grant VN/25259/2020.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

Acknowledgements

The authors would like to thank the social workers for writing their diaries, the administrators of Finnish social work career network for enabling data collection as well as the colleagues of COVID-19 Social Work Research Forum for supportive debates during 2020-22.

Ethical considerations

The study meets the ethical standards of Finnish National Board on Research Integrity TENK.

References

- Beattie, M., Wilson, C., & Hendry, G. (2021). Learning from lockdown: Examining Scottish primary teachers' experiences of emergency remote teaching. *British Journal of Educational Studies*, 1–18. <https://doi.org/10.1080/00071005.2021.1915958>
- Bol, T. (2020). Inequality in homeschooling during the Corona crisis in the Netherlands. *First results from the LISS Panel*. 10.31235/osf.io/hf32q.
- Bones U., Bates J., Finlay J., Roulston S. & Taggart S. (2020). Experiences of supporting children's home learning during COVID-19. Ulster university experiences of supporting children's home learning during COVID-19. Northern Ireland Parent Surveys UNESCO Centre, School of Education, Ulster University. https://www.ulster.ac.uk/_data/assets/pdf_file/0009/597969/UU-School-survey-Report-web.pdf (Retrieved 11th August 2021).
- Bourdieu, P. (1986). The forms of capital. In Richardson J. (ed.), *Handbook of theory and research for the sociology of education*. 241–258. New York: Greenwood.
- Bousquet, A., & Curtis, S. (2011). Beyond models and metaphors: Complexity theory, systems thinking and international relations. *Cambridge Review of International Affairs*, 24(1), 43–62. <https://doi.org/10.1080/09557571.2011.558054>
- Brown, S. M., Doom, J. R., Lechuga-Peña, S., Wataamura, S. E., & Koppels, T. (2020). Stress and parenting during the global COVID-19 pandemic. *Child Abuse & Neglect*, 110(2), Article 104699. <https://doi.org/10.1016/j.chiabu.2020.104699>
- Bubb, S., & Jones, M. (2020). Learning from the COVID-19 home-schooling experience: Listening to pupils, parents/carers and teachers. *Improving Schools*, 23(3), 209–222. <https://doi.org/10.1177/1365480220958797>
- Byrne, D. (2005). Complexity, configurations and cases. *Theory, Culture and Society*, 22(5), 95–111.
- Chartier, S., Delhalle, M., Baiverlin, A. & Blavier, A. (2021). Parental peritraumatic distress and feelings of parental competence in relation to COVID-19 lockdown measures: What is the impact on children's peritraumatic distress? *European Journal of Trauma & Dissociation*, 5(2), 100191. 10.1016/j.ejtd.2020.100191.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *The American Journal of Sociology* 94 Supplement, 95–120.
- Coleman, J. S. (1990). *Foundations of social theory*. Cambridge: Harvard University Press.
- Díaz, M. J. S. (2021). Emergency remote education, family support and the digital divide in the context of the COVID-19 lockdown. *International Journal of Environmental Research and Public Health*, 18(15), 7956. <https://doi.org/10.3390/ijerph18157956>
- European Commission (2020). Digital Economy and Society Index (DESI). <https://digital-strategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi-2020>. Accessed 22nd July 2021.
- FINEEC – Finnish Education Evaluation Centre (2020). Impacts of the exceptional teaching arrangements on the realization of equality and equity. Results of the national evaluation, 17 June 2020. <https://karvi.fi/en/2020/06/18/impacts-of-the-exceptional-teaching-arrangements-on-equity-challenges-include-distance-learning-skills-and-support-and-guidance-for-learning/>. Accessed 6th August 2021.
- Goldstein, J. F. (2018). Emergence and radical novelty: from theory to methods. In Mitleton-Kelly, E. & Paraskevas, A. & Day, C. (eds.). *Handbook of research methods in complexity science. Theory and applications.*, 507–524. Edward Elgar, Cheltenham UK, Northampton USA.
- Graham, K. (2009). A child and adolescent mental health day program working at the edge of chaos: What complexity science may tell us about team, family and group systems. *The Australian and New Zealand Journal of Family Therapy*, 30(3), 184–195.
- Green, D., & McDermott, F. (2010). Social work from inside and between complex systems: Perspectives on person-in-environment for today's social work. *British Journal of Social Work*, 40(8), 2414–2430.
- Griffith, A. K. (2020). Parental burnout and child maltreatment during the COVID-19 pandemic. *Journal of Family Violence*, June 23, 1–7. 10.1007/s10896-020-00172-2.
- Harrikari, T., Mooney, J., Adusumalli, M., McFadden, P., & Leppiaho, T. (Eds.). (2023). *Social work during COVID-19: Global perspectives and implications for the future of social work*. Abingdon: Routledge.
- Hudson, C. G. (2000). At the edge of chaos: A new paradigm for social work? *Journal of Social Work Education*, 36(2), 215–230.
- Häkkinen, J., Karhu, M., Kalving, M. & Colley, A. (2020). Practical family challenges of remote schooling during COVID-19 pandemic in Finland. In *Proceedings of the 11th Nordic Conference on Human-Computer Interaction (NordCHI '20)*. (October 25–29., 2020). *Shaping Experiences, Shaping Society*. 1–9. Tallinn, Estonia. ACM, New York, NY, USA. <https://doi.org/10.1145/3419249.3420155>.
- Kauhanen, L., Wan Mohd Yunus, W., Lempinen, L., Peltonen, K., Gyllenberg, D., Kaisa Mishina, K., Gilbert, S., Bastola, K., June S. L., Brown, J. & Sourander, A. (2022). A systematic review of the mental health changes of children and young people before and during the COVID-19 pandemic. *European Child & Adolescent Psychiatry*. 10.1007/s00787-022-02060-0.
- Koskela, T., Pihlainen, K., Piispa-Hakala, S., Vornanen, R., & Hämäläinen, J. (2020). Parents' views on family resiliency in sustainable remote schooling during the COVID-19 outbreak in Finland. *Sustainability*, 12(21), 8844. <https://doi.org/10.3390/su12218844>
- Kuhn, L. (2018). Complexity informed social research: from complexity concepts to creative applications. In Mitleton-Kelly, E. & Paraskevas, A. & Day C. (edit.) (2018).: *Handbook of research methodology in complexity science. Theory and applications*. 74–94. Edward Elgar, Cheltenham UK, Northampton USA.
- Lavonen, J. & Salmela-Aro, K. (2022). Experiences of moving quickly to distance teaching and learning at all levels of education in Finland. In Reimers, F (edit.), *Primary and secondary education during covid-19* (105–123). Springer. 10.1007/978-3-030-81500-4.
- Lee, S. J., Ward, K. P., Chang, O. D., & Downing, K. M. (2021). Parenting activities and the transition to home-based education during the COVID-19 pandemic. *Children and Youth Services Review*, 122, Article 105585. <https://doi.org/10.1016/j.childyouth.2020.105585>
- Martarelli, C. S., Paozzi, S. G., Bieleke, M., & Wolff, W. (2021). High trait self-control and low boredom proneness help COVID-19 homeschoolers. *Frontiers in Psychology*, 12, Article 594256. <https://doi.org/10.3389/fpsyg.2021.594256>
- Mælan, E. N., Gustavsen, A. M., Stranger-JohannesseVielå, n, E. & Nordahl, T. (2021). Norwegian students' experiences of homeschooling during the COVID-19 pandemic. *European Journal of Special Needs Education*, 36(1), 5–19. 10.1080/08856257.2021.1872843.
- Ng, K., Koski, P., Lyyra, N., Palomaki, S., Mononen, K., Blomqvist, M., & Kokko, S. (2021). Finnish late adolescents' physical activity during COVID-19 spring 2020 lockdown. *BMC Public Health*, 21(1), 1–2197. <https://doi.org/10.1186/s12889-021-12263-w>
- Nusser, L. (2021). Learning at home during COVID-19 school closures - How do German students with and without special educational needs manage? *European Journal of Special Needs Education*, 36(1), 51–64. 10.1080/08856257.2021.1872845.
- OECD (2020). Country Note. School education during covid-19. Were teachers and students ready? <https://www.oecd.org/education/Finland-coronavirus-education-country-note.pdf>. Accessed 3rd September 2021.
- Page, A., Charteris, J., Anderson, J., & Boyle, C. (2021). Fostering school connectedness online for students with diverse learning needs: Inclusive education in Australia during the COVID-19 pandemic. *European Journal of Special Needs Education*, 36(1), 142–156. <https://doi.org/10.1080/08856257.2021.1872842>
- Pozas, M., Letzel, V., & Schneider, C. (2021). 'Homeschooling in times of corona': Exploring Mexican and German primary school students' and parents' chances and challenges during homeschooling. *European Journal of Special Needs Education*, 36(1), 35–50. <https://doi.org/10.1080/08856257.2021.1874152>
- Romakkaniemi, M., Harrikari, T., Saraniemi, S., Fiorentino, V., & Tiitinen, L. (2021). Bonding, bridging and linking the last resort tailboard': Shifts in social workers' professional positions and mobilising adaptive capital during the coronavirus pandemic. *Nordic Social Work Research*. <https://doi.org/10.1080/2156857X.2021.1992489>
- Salin, M., Kaittila, A., Hakovirta, M., & Anttila, M. (2020). Family coping strategies during Finland's COVID-19 lockdown. *Sustainability*, 12(21), 9133. <https://doi.org/10.3390/su12219133>
- Salmela-Aro, K., Upadaya, K., Vinni-Laakso, J., & Hietajärvi, L. (2021). Adolescents' longitudinal school engagement and burnout before and during COVID-19—the role of socio-emotional skills. *Journal of research on adolescence*, 31(3), 796–807. <https://doi.org/10.1111/jora.12654>
- Sanger, M., & Giddings, M. (2012). A simple approach to complexity theory. *Journal of Social Work Education*, 48(2), 369–376. <https://doi.org/10.5175/JSWE.2012.201000025>
- Save the Children (2020). Stress, worry and loneliness – effect of the coronavirus pandemic on the lives of children and youth. *Children's voice 2020: Children's views on the coronavirus spring*. https://s3-eu-west-1.amazonaws.com/pelastakaalapset/main/2020/10/19094856/Lapsen-Aani-2020_raportti1_EN.pdf. Accessed 23rd July 2021.
- Savilähti, E. M., Lintula, S., Häkkinen, L., Marttunen, M., & Granö, N. (2021). Adolescent psychiatric outpatient care rapidly switched to remote visits during the COVID-19 pandemic. *BMC Psychiatry*, 21(1), 586. <https://doi.org/10.1186/s12888-021-03580-w>
- Shenhav, A., Botvinick, M. M., & Cohen, J. D. (2013). The expected value of control: An integrative theory of anterior cingulate cortex function. *Neuron*, 79, 217–240. <https://doi.org/10.1016/j.neuron.2013.07.007>
- Sorkkila, M., & Aunola, K. (2022). Resilience and parental burnout among Finnish parents during the COVID-19 pandemic: variable and person-oriented approaches. *The Family Journal*, 30(2), 139–147. <https://doi.org/10.1177/10664807211027307>
- Spinielli, M., Lionetti, F., Pastore, M., & Fasolo, M. (2020). Parents' stress and children's psychological problems in families facing the COVID-19 outbreak in Italy. *Frontiers in Psychology*, 11, 1713. <https://doi.org/10.3389/fpsyg.2020.01713>
- Statistics Finland (2020). Educational structure of population. Accessed 20th July 2021.
- Stevens, I., & Cox, P. (2008). Complexity theory: Developing new understandings of child protection in field settings and in residential child care. *The British Journal of Social Work*, 38(7), 1320–1336. <https://doi.org/10.1093/bjsw/bcm052>
- TENK, Finnish National Board on Research Integrity (2019). The ethical principles of research with human participants and ethical review in the human sciences in Finland. https://tenk.fi/sites/tenk.fi/files/ihmistieteiden_eettisen_ennakkoarviointi_ohje_2019.pdf, Accessed 29th of October 2021.
- Thorell, L. B., Skoglund, C., de la Peña, A. G., Baeyens, D., Fuermaier, A. B. M., Groom, M. J., ... Christiansen, H. (2021). Parental experiences of homeschooling during the COVID-19 pandemic: Differences between seven European countries and between children with and without mental health conditions. *European Child & Adolescent Psychiatry*, 7, 1–13. <https://doi.org/10.1007/s00787-020-01706-1>
- Trust, T. & Whalen, J. (2021). Emergency remote teaching with technology during the COVID-19 pandemic: Using the whole teacher lens to examine educator's experiences and insights. *Educational Media International*, 58(2), 145–160. 10.1080/09523987.2021.1930479.
- Usher, K., Bhullar, N., Durkin, J., Gyamfi, N., & Jackson, D. (2020). Family violence and covid-19: Increased vulnerability and reduced options for support. *International Journal of Mental Health Nursing*, 29(4), 549–552. <https://doi.org/10.1111/inm.12735>
- Ward, M. (1995). Butterflies and bifurcations: Can chaos theory contribute to our understanding of family systems? *Journal of Marriage and Family*, 57(3), 629–638. <https://doi.org/10.2307/353918>