



The Complexity of Managing Diverse Communication Channels in Family-School Relations in Switzerland as Seen by Parents and Schools

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Abstract

The importance of family-school relations and their positive effects on children's developments is well documented. They can be shaped predominantly by one-way (schools informing parents) or two-way (a partnership approach) communication. When fostering these relationships, schools and families engage on individual and collective levels, using a variety of tools such as text messages, emails, phone calls or personal contacts. A growing body of literature suggests that digital technologies are changing the way families and schools communicate and digital media contacts are often considered to be more immediate and convenient. In this contribution, we present findings from a Swiss project focusing on school websites. Using data from interviews with 33 families and personnel in eight schools (principals, teachers and other staff), we explore how family-school communication is embedded in specific contexts, including rural contexts, and takes place through diverse channels. While parents make use of and appreciate diverse communication channels, schools' choices of communication channels are often related to specific functions. Overall, we found that one-way information rather than dialogue still dominates family-school relations.

Keywords: *family-school relations, communication, digital media, interviews*

Introduction

Parents matter, not only when it comes to providing children and youth with a home, but also with regard to supporting their learning at different ages (see e.g., Kilpatrick et al., 2020, for post-school education). To this end, parents also communicate and engage with schools. From schools' perspectives, managing these contacts is a key task, apart from organising lessons. Technological developments have contributed to increasingly diverse communication channels. Apart from notes on paper, face-to-face meetings and phone calls, schools can now reach parents through their websites, emails, text messages or specific communication apps. Each medium possesses specific qualities, some being more suitable for one-way communication by effectively sending information to large groups, with others enabling protected asynchronous exchanges. In this article, we aim to present some answers to questions raised by the availability of these tools, namely how and why families and schools in rural areas and elsewhere employ different communication channels.

We report findings from an exploratory project which initially focused on school websites as one communication channel. However, as one of our key insights was that school websites take on specific functions depending on the availability of other communication channels, we will

elaborate more generally on how the diversity of communication channels is viewed and managed by both, families and schools. We first present general background information on family-school relations. We then describe the context of Switzerland where the study was implemented and elaborate on the research design. While the findings present both families' and schools' perspectives separately, they will be discussed in an integrated manner.

Family-school Relations

There are many terms used to describe family-school interfaces. Some refer generally to family-school relations, connections or links (e.g., Guo, 2018); others talk about parental involvement (e.g., Paseka & Byrne, 2020), parental engagement (e.g., Goodall, 2013), parental participation (Helgøy & Homme, 2017), and family-school partnership (e.g., Epstein, 2010). Many of these terms refer to specific aspects of relationships, such as differentiating between parents' activities at home or school (Hoover-Dempsey et al., 2005) or whether parents have a voice with regard to their child or school matters more generally (Epstein, 2010). One of the most influential frameworks encompassing many of these aspects is Epstein's (1987, 2010) conceptualisation of schools, families (and communities) as different, overlapping, spheres of influence. With this framework, Epstein argues that we can analyse relationships at both institutional (e.g., when a school sends information to all parents) and individual (e.g., when a parent and a teacher meet) levels. Based on numerous studies, Epstein furthermore describes six types of involvement: parenting, communicating, volunteering, learning at home, decision-making and collaborating with the community (Epstein, 2010). We are most interested in the communication aspect, which is defined as *“design[ing] effective forms of school-to-home and home-to-school communications about school programs and children's progress”* (Epstein, 2010, p. 85).

The distinction between one-way and two-way communication is an important one. Goodall (2016) called it a distinction between communication and dialogue. More specifically, she described communication as simply giving or receiving information, whereas dialogue requires active participation from both parties. On a practical level, this distinction is relevant for digital media where technological characteristics can be used to enable or disable two-way communication within one application. For instance, if a website does not contain features such as a contact form or a chat function, two-way communication is not possible. Similarly, settings in messenger apps can be adjusted so that information can be sent to large groups, but group members cannot answer back to everyone. The same tool can therefore be used for both one-way and two-way communication. On a conceptual level, this distinction relates to changing aspects of family-school relations towards more equitable approaches, such as parental engagement or family-school partnerships where two-way communication is considered a prerequisite.

There is a plethora of empirical work on the use of digital media for family-school relations focusing on both different tools and different groups, including principals' social media use (Mazza, 2013), teachers' willingness to use text messages (Ho et al., 2013), characteristics of email (Thompson, 2008), blog-based interventions (Ozcinar & Ekizoglu, 2013), and school websites (Piller et al., 2023; Taddeo & Barnes, 2016). Using diverse communication channels for family-school relations potentially changes their characteristics, which have been described as infrequent, occurring at designated times, and initiated by teachers upon problems with students (Thompson, 2008). Messages, emails or websites potentially make schools more accessible by allowing for asynchronous communication. It is therefore not surprising that many studies found that a selected tool in a specific context affects family-school relations positively (e.g., Mazza, 2013) or has the potential to involve families that might not usually interact frequently with schools (e.g., Goodall, 2016). However, the potential of such tools is rarely fully exploited (e.g., Taddeo & Barnes, 2016), with beliefs held by both parents and teachers being identified as potential barriers (Macia Bordialba & Garreta Bochaca, 2019).

It is worth noting, that the geographic location (rural, suburban, urban) was often a criterion for schools to be selected for a sample in these studies; yet researchers rarely referred to differences in location when discussing findings (except when school choice was an issue, e.g., Gillece & Eivers, 2018). Personal characteristics and access to specific technologies were more frequently identified as key factors (e.g., Mazza, 2013). One exception to this is a study from Finland, where Kuusimäki et al. (2019) found a more positive appraisal of digital communication by rural parents than their urban counterparts. Apart from describing family-school relations, empirical studies often refer to media selection when studying specific technologies, such as the technology acceptance model (Ho et al., 2013) or media richness theory (e.g., Thompson et al., 2015). However, as different technologies continue to penetrate everyday practices, a more encompassing perspective is required. This is offered by the concept of mediatisation, which is used to capture both the quantitative increase and omnipresence of technical communication media as well as the qualitative changes that their use causes in the construction of social reality (Hepp et al., 2018).

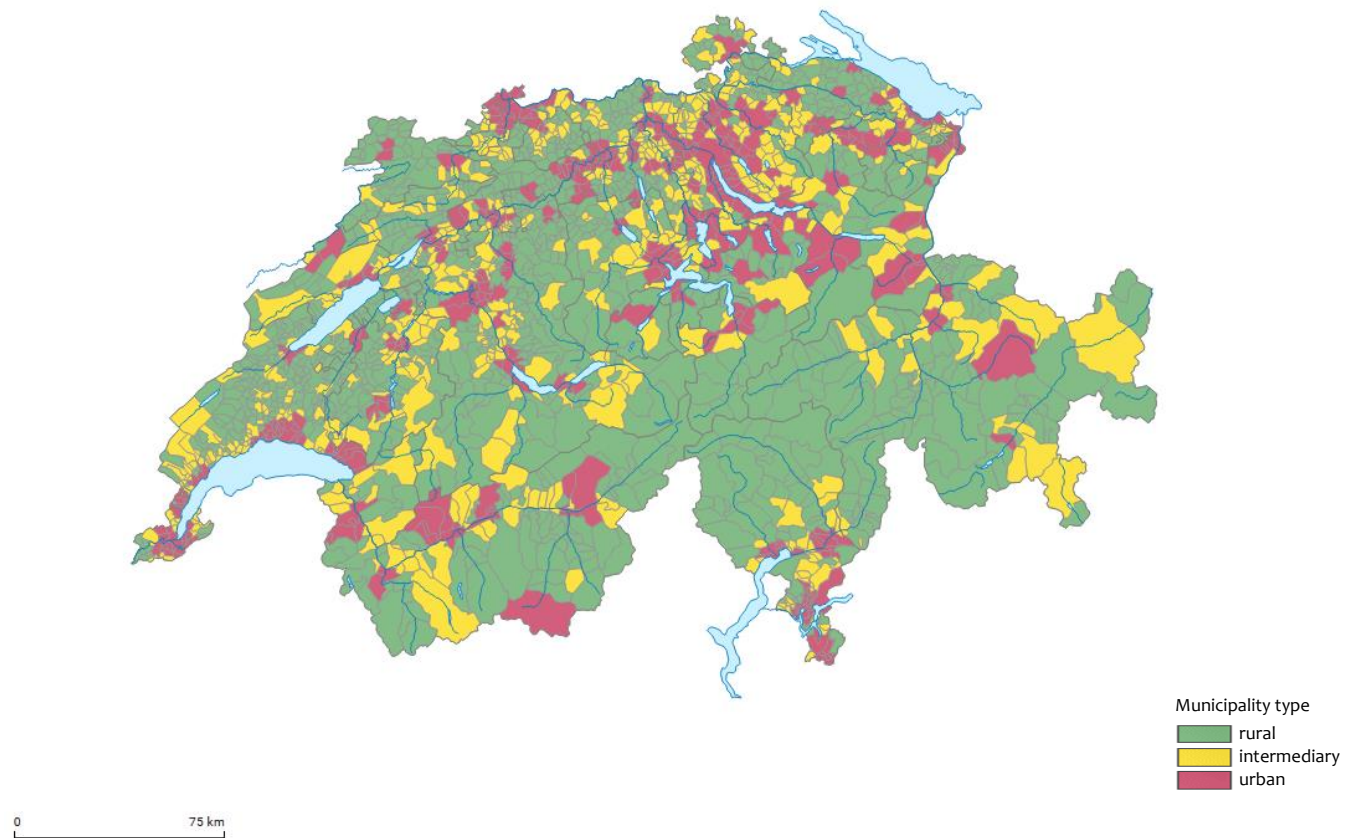
Based on this background, we formulated our research questions: 1. How do schools develop and maintain their websites? 2. How are these websites used and viewed by families? However, these questions, inspired by the idea of media selection, turned out to be inadequate to capture and understand the complexity of diverse communication channels, particularly for the families. We therefore aim to identify other aspects which should be addressed in further research, to arrive at a deeper understanding of family-school relations in times of ongoing mediatisation. However, before elaborating on the methods used and the related findings, we will briefly describe the context in which our study was implemented.

The Context of Switzerland

Switzerland, a small, landlocked country with four official languages, is located between Germany, France, Italy, Austria, and Liechtenstein. Its three distinct geographical regions are the Alps (60% of the country's surface), the Central Plateau (30%), and the Jura. The Central Plateau runs from Lake Geneva in the southwest to Lake Constance in the northeast and is the most densely populated region. There are no large cities with more than one million inhabitants; yet most of the population of 8.7 million live in urban areas.

Figure 1 shows Switzerland's municipalities (local government areas) based on their rural/intermediary/urban characteristics. All red surfaces indicate urban municipalities, yellow ones refer to intermediary, and green ones to rural municipalities. This typology takes both morphological (size, density) and functional (commuter flows) characteristics into account. Intermediary municipalities show some of both rural and urban characteristics, for example few inhabitants and many employment opportunities so people commute to that community. As of 2024, 49% of Switzerland's municipalities were assigned to the rural type compared to 24% marked as urban (Federal Statistical Office, 2024). Figure 1 also illustrates the small-scale character of Switzerland. Its territory of almost 41,300 square kilometres corresponds to two thirds of that of Tasmania; however, there are over 2,100 municipalities organised in 26 cantons, as the federal states are called. This number has decreased significantly in the past (424 municipalities disappeared between 2010 and 2021) as rural municipalities have merged mainly in order to cut costs (Steiner et al., 2021).

Figure 1: Switzerland's Municipalities According to Rural, Urban and Intermediary Type (Federal Statistical Office, 2023a)



Source: https://www.atlas.bfs.admin.ch/maps/13/fr/17847_17846_3191_227/27617.html

As in Australia, political and legislative power is distributed across three levels (in Switzerland called national, cantonal and municipal) with the municipal level being accorded as much autonomy as possible. This distinct federal structure is also visible in the field of education: 26 cantons account for compulsory education resulting in as many different systems. Overall, 95% of Swiss students attend state schools and complete compulsory education in the municipality in which they live (The Swiss Conference of Cantonal Ministers of Education, 2023). School choice, therefore, is an almost non-existing phenomenon, an important factor when it comes to family-school relations. Compulsory education spans 11 years (H1-H11) with the final three years at lower secondary being completed at different academic levels, based on students' performances and intended career paths.

The cantons coordinate their work at the national level in a political body called The Swiss Conference of Cantonal Ministers of Education; yet many cantons delegate the duty to establish and maintain schools to the local municipality. The lack of national legislation and decentralisation leads to considerable autonomy, particularly regarding schools' legal and financial situations. Municipalities contribute more than 50% of public expenditure for compulsory education (Federal Statistical Office, 2023b). Therefore, local school boards and municipal councils representing the public and constituting the governing body play an important role when it comes to providing financial resources and strategic guidance. These bodies generally consist of non-educational professionals and tend to be politically oriented which particularly in smaller and more rural municipalities may translate into conservative politics (Huber, 2011). The introduction of school principals as professionals managing schools has only taken place recently and many stakeholders are still in a process of clarifying their roles, as their different tasks often overlap (Huber, 2011). Family-school relations constitute typical task to

illustrate this ongoing clarification of leadership roles: Is, for example, introducing a school app a strategic decision and therefore in the responsibility of the school board or is it an operational one and therefore taken by a principal?

When it comes to family-school relations, further points are worth mentioning. Families and schools are traditionally considered separate spheres in Switzerland (Ho & Vasarik Staub, 2019). This separation is observed, for example, in the practice that many children go home for lunch, particularly in rural areas, as parents have been traditionally considered responsible for their upbringing, and school for teaching (Schüpbach, 2010). There is little national legislation or regulation addressing this aspect of the educational system, contrary for example to Australia, where a national family-school partnership framework exists (Australian Government Department of Education and Training, 2018). The only stipulation at the national level addressing family-school relations is contained in the Swiss Civil Code which states that “*parents must co-operate as appropriate with school authorities*” (Schweizerische Eidgenossenschaft, 2024, Article 302).

Only a limited number of cantons stipulate specific, more intense forms of participation for parents; for example, a parents’ council (Villiger et al., 2020). Schools are not required to maintain a website or publish certain information online, as is for example the case in the United Kingdom (UK Department for Education, 2023). Regarding the use of digital media more generally, Switzerland can be considered to resemble German schools. Breiter and Ruhe (2018) found that they rely more on paper-based communication than English schools. Online platforms are mainly used for communication between staff and students, with an increase in their usage for communication with parents due to the COVID pandemic (S-Clever-Konsortium, 2021). The current technological trend, however, is the introduction of school specific messenger applications to communicate with parents. In the rest of this article, these are referred to as school apps.

Methods

To study the phenomenon of school websites from the perspectives of families and schools, we developed a two-phased research design. In the first step, we identified 40 schools in four cantons located in Switzerland’s Central Plateau. We used a combination of probability and purposeful sampling (Patton, 2015) with the aim of having a maximally diverse sample, in order to capture as many aspects of the phenomenon—school websites—as possible.

As Swiss schools are run by their respective municipalities, the type (rural/intermediary/urban) was one of our key dimensions. Rural municipalities tend to have smaller schools: only 3% of rural schools have more than 200 students, whereas 80% of urban schools have more than 200 students (Federal Statistical Office, 2021). Moreover, there are fewer schools at lower secondary level in rural municipalities and locations tend to be further apart, therefore taking longer to reach. Other key dimensions were the schools’ size and location (number of grades taught, number of locations) and the appearance of the website (e.g., the way it was linked to the municipalities’ website or whether it contained specific elements such as a search function).

After an initial analysis of the 40 schools’ websites, we chose eight schools for in-depth investigation. These were selected with the aim of having a maximally diverse sample. We have named them Schools A to H. At these schools, we conducted problem-centred interviews (Witzel & Reiter, 2012) with people from the school or municipality who were responsible for the school website, and semi-standardised interviews with parents. We contacted school principals in the selected schools with information about our project, asking for an interview with the person responsible for the school website. In five schools this was the school principal; in one school it was the principal and a teacher; in another it was a teacher, and in the last school it was administrative staff (a person from the municipality and the school secretary). Parents were

recruited in cooperation with the principals who sent out information about the project. Interested parents could then contact the project team. Parents from seven schools participated as School G discontinued to be involved in the project (see Table 1).

The school interviews ($n = 9$) were conducted in person in autumn/winter of 2021 and lasted between 30 and 100 minutes. They covered three broad areas: creation and maintenance of the school's website, specific aspects, and general topics such as the school's approach to family-school relations or its overall integration of technology. The parent interviews ($n = 34$) were conducted between winter 2021 and spring 2022 over the phone or using video telephony. They lasted between 15 and 45 minutes and covered three areas: general information about the family, the family's communication with the school, and its usage of the website. The interviews' dynamic was therefore inverted: the family interviews started with general information and moved to the website as a specific aspect of school communication, whereas the school interviews started with a focus on the website and then moved to more general issues such as family-school relations.

On some occasions, two people took part in one interview; for example, an incoming and outgoing principal or a father and a mother. This accounted for the considerable differences in length and the number of interviews. All interviewees were informed about the project and use of their data, and they participated voluntarily. The interviews were recorded digitally and transcribed manually. The authors translated all interview quotes included in the Findings section from Swiss German into English.

The transcripts were analysed using a combination of qualitative content analysis (Mayring, 2000) and thematic analysis (Braun & Clarke, 2006). The former, being more standardised, was mainly applied to the parents' interviews which were more structured, whereas the latter was used for the school interviews. The different approaches are also reflected in the presentation of findings. While the families' perspectives are rather descriptive, focusing on varying aspects reported in relation to their communication practices, the schools' perspective includes the description of broader themes, namely adaptation and leadership.

Table 1: Key Characteristics of the Sub-samples at the Time of the Interviews (n = 8 Schools)

School	Canton	Municipality Type	Grades ^a	Number of Locations	School Interview Partners ^b	Parent Interview Partners ^c	Use of School App ^d	Parents' Council
A	Aargau	Intermediary	H1–H11	2	2 (principal & head of primary level/teacher)	3 mothers	Being introduced	No
B	Aargau	Intermediary	H1–H11	3	1 (principal)	3 mothers	Yes	No
C	Bern	Rural	H1–H8	3	1 (principal)	3 fathers 2 mothers	Yes	No
D	Bern	Intermediary	H9–H11	1	1 (teacher)	5 mothers 2 fathers	No	No
E	Bern	Rural	H9–H11	1	2 (school secretary & communication personnel from the municipality)	4 mothers 1 father	Being introduced	No
F	Bern	Urban	H1–H8	5	1 (principal)	7 mothers 1 father	No	Yes
G	Fribourg	Urban	H1–H8	1	1 (principal) ^f	No (ongoing tests in other schools in the city)	Yes
H	Solothurn	Intermediary	H1–H11	5	2 (outgoing & incoming principals)	2 mothers 2 fathers	No	In 2 of the 5 locations

^a H1-H11 indicates that a school offers all grades of compulsory schooling including two years of kindergarten (H1-H2). Accordingly, H1-H8 includes kindergarten and primary school, whereas H9-H11 includes the three years of the lower secondary level.

^b We have nine interviews with 11 individuals representing eight schools.

^c We have 34 interviews with 35 individuals representing 33 families.

^d All schools used parent-teacher meetings, emails, phone calls, text messages and paper-based information for communication with parents, hence these channels are not listed separately.

^e Due to the discontinuation of School G in the project, no interviews with parents were conducted.

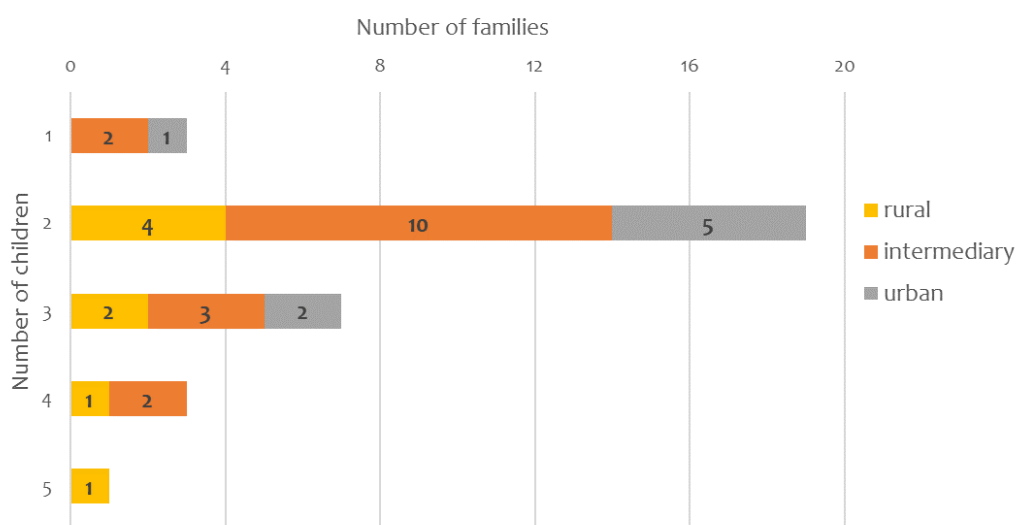
Findings

The Families' Perspective

Since the parents participating in our project volunteered after receiving information from their schools, they cannot be considered representative. The sample reflects diverse family constellations and is therefore well suited to provide insights into a variety of communication practices. While they reported differing uses of media, they all possessed digital devices and made use of those in their interactions with schools. Generally, information from schools that was accessible via smartphones (be it through a school app, the website, messages or emails) was highly appreciated, as it could be accessed from anywhere and facilitated action at short notice.

Out of the 33 families interviewed, a vast majority (26) were parents living with their children. Two constituted “patchwork families” (a term used by the interviewees themselves, often called blended families). Another five were single parents. Their number of children varied between one and five, with rural families tending to have more children (rural families in the sample on average had 3.25 children, whereas families in intermediary and urban municipalities had 2.29 respectively 2.12 children; see Figure 2). It is worth noting that families in intermediary municipalities showed the most diverse family constellations, whereas all urban families were “traditional” families with both parents living with their children.

Figure 2: Number of Children in Interviewed Families (n = 33)



When it came to family-school relations, the children’s age played an important role, as it determined the class they attended. Because Swiss teachers generally enjoyed a great deal of autonomy in shaping family-school relations (Huber, 2011), having two children in different classes could result in two different practices of communication; for instance, when having to report a sick child. Having more than one child increased the experienced complexity for parents. However, it also contributed to the accumulation of knowledge and made a difference in terms of self-confidence: *“With the third child of course you also notice, that your need for information is no longer so great. Because you are confident, and you know that things are going well”* (Mother, School F).

Another aspect relating to the children’s ages were transitions in their educational trajectories. Entering the school system or changing from primary to lower secondary school constituted a significant step. In rural areas, attending lower secondary school was often related to changing to schools located further away from home. Many parents reported that the transition to lower

secondary brought marked changes and commented upon the more direct communication between students and teachers, resulting in fewer insights for parents. More student autonomy at the lower secondary level and more paper-based communication at the school entry level were reported by many parents, indicating a degree of shared communication practices beyond individual schools. Moreover, the school website was mentioned frequently as a source of information to prepare for transitions, as it provided general information: *“Before the transition we looked at the pictures of the new teachers. There are suddenly many more teachers whom we did not know so we looked at them together”* (Mother, School A).

Other factors relating to aspects of family-school relations include special needs, whether long-term (e.g., a specific diagnosis) or more temporary (e.g., disciplinary issues). Families with children having specific needs reported more intense communications with diverse staff. All families reporting communication beyond the *“run-of-the-mill”* (again a term used by interviewees themselves) indicated that they preferred phone calls or personal meetings for such exchanges. The more intense communication was usually temporary and limited: *“Our daughter had a crisis and yes, that was difficult. But we made it, and now she has a new class teacher and all that and she is well again, and it all runs smoothly”* (Mother, School E). Conversely, parents who judged their communication with the school to be *“normal”* or *“the usual”* often argued that their children had no special needs: *“We are standard users of the school. We need neither a lot nor special attention. It simply runs”* (Mother, School F). Such statements implied a norm of little or no contact for those families.

Furthermore, factors such as extracurricular activities or parental engagement at school sometimes increased the complexity of communication or facilitated access to information. These are summarised in Tables 2 and 3.

Table 2: Families' Use of Extracurricular Activities and After-School Care

Extracurricular and After-School Activities	Number (%) of Families
Extracurricular activities taking place at the school, e.g., sports	8 (24%)
After-school care	6 (18%)
Both extracurricular activities and after-school care	2 (6%)
None	17 (52%)
Total	33 (100%)

Table 3: Parental Engagement at School

Type of Engagement with School	Number (%) of Parents
Current formal engagement (e.g., school board or parents' council)	14 (42%)
Past formal engagement or ad hoc engagement (e.g., accompanying school trips)	8 (24%)
No engagement	10 (30%)
Other*	1 (3%)
Total	33 (100%)

* The researchers and the participants did not engage on the topic at the interview stage.

While the numbers are too small to make generalised statements, some of the data presented in Tables 2 and 3 gloss over possible systematic differences in rural and urban family structures. We found the typical Swiss employment pattern of fathers working full-time and mothers part-time in all three groups of parents (rural, intermediary and urban). However, rural families seemed to

have less need for after-school care as they made more use of extended family members to provide it. This included grandparents cooking lunch as reported in the interviews. As one mother observed, this often led to mothers being more engaged in, or burdened with, school communication:

Because in the end it's usually mum who gets the paper back, because it's mum who's usually there when the children come home in the evening ... If the information were sent by email, fathers would be just as obliged to read them as mothers. I'm thinking that this would also be a way of getting fathers much more involved in bringing up their children. (Mother, School F)

Urban families made more use of after-school care, and all the interviewed families in the urban setting had a current or past engagement at school, whereas only half of the rural families did. Moreover, rural parents reported to be more engaged in ad hoc activities (e.g., accompanying classes on trips or helping during special events), whereas urban parents were more formally involved (e.g., participating in the parents' council). The use of after-school care or extracurricular activities generally resulted in more complex communication, as more individuals were involved. It was particularly in these contexts where school apps were highly appreciated. They clearly defined processes and ensured that information was distributed to all relevant parties, including, for example, bus drivers. This seemed more relevant in rural areas where schools tended to be more distant from home locations than in urban settings.

Parental engagement was often perceived to improve information access, as parents felt more at ease in simply contacting a teacher or other person due to personal contacts. As rural parents in our sample engaged in more informal settings in school activities, the quality of their contacts may have differed from the more formal engagements (e.g., the parents' council) of urban parents.

We found parents' as well as their children's personal characteristics to be a frequently addressed issue. The interviewees often described their information needs and actions as depending on their children's behaviour:

Well, I personally like to be informed about everything. ... I would like to have more information, because my son hardly tells me anything. I miss a lot and have to pull everything from his nose. (Mother, School B)

[I like this app, it is easier] than those papers that the teachers give to the children and then they forget to take it out of their school bags. (Father, School C).

Moreover, personal preferences, such as "I'm no media person, I think paper and pencil are the best" (Mother, School D), shaped parents' actions.

We close this section with a short account by a mother, because she vividly illustrates many of the previously discussed aspects relating to managing diverse communication channels, particularly her personal situation (first child in kindergarten) and her personality (wish to follow what the school has said; self-confidence of trying something). In most Swiss schools, children can take off from school for some days, without giving a reason. This mother wanted to make use of this practice and reported:

We had a parents' evening at the beginning of the school year where we got this information [on how to proceed for these days] and were able to ask questions. A fortnight ago I wanted to ask about this. It was so far the only incident when I did not really know how to do it. Do I have to report it to the school principal? To the kindergarten teacher? So I went to the website for the first time. Because I did not find anything, I wrote to the teacher on WhatsApp, but I didn't get an answer. I don't know if she doesn't want parents to write to her via WhatsApp. I don't know, I'd have to ask her personally, but I don't think that's the

idea. She answered me days later via the school app, and I assume that's the way they want it, that you communicate through the school app. So I got the answer I wanted from her and yes, that was good. (Mother, School A)

As a connector to the next section, we complement this personal experience of navigating between many channels of communication with the school's well-structured approach to family-school relations:

We have a concept [for family-school relations], yes. We have defined points with regard to transitions. We have guidelines on what the teachers have to discuss with the parents and when. ... And yes, the usual parents' evenings and also the parent-teacher meetings. (Principal, School A)

This more systematic approach was typical of the schools' perspective, which we will now describe in more detail.

The Schools' Perspectives

Table 1 describes key characteristics of the eight schools, including the respective interview partners. After a brief presentation of some structural aspects, the findings from the school interviews will focus on adaptation and leadership as two main themes. Websites are mentioned more frequently in this section, as they constituted a major element of the interviews.

Although physical structures, such as the number of locations in which a school was present or the locations themselves, were not an issue in the school interviews, organisational structures were addressed repeatedly. They included more distant actors, such as the respective canton and governing bodies, as well as the division of responsibilities within schools, marked by high degrees of teacher autonomy. More distant actors exerted influence by regulating the use of specific tools, like school apps, or providing templates for websites. We found references to such influences in all schools, with urban schools tending to be embedded in more professional structures, therefore providing more guidance. Typically, urban schools enjoy more support from their municipalities which employ professional staff whereas rural schools depend on their municipalities' goodwill to provide resources for schools, not least of all administrative staff.

The relationship to the municipality's administration was particularly noticeable in the context of the schools' websites. As the public schools were run by the municipalities, basic information about the local school was generally available on the municipality's website, yet some schools maintained an additional independent website themselves. However, this could be negotiated between the municipality and the school.

For many interviewees the reason for having a website was not always clear. They agreed that *"it goes without saying that a school needs a website"* (Teacher, School C) which runs smoothly, but its precise function was not obvious. For many, the website was more important for the recruitment of new teachers than for family-school relations. Metaphors such as *"it is our business card"* (Schools B, C and G) indicated that its orientation was towards people who were not yet members of the school community. This, however, included future parents, be they new inhabitants of the municipality or parents of a child starting school.

One last structural element worth mentioning is the parents' councils. Their institutionalisation varied considerably. This was best reflected in School H, where a parents' council existed in two of its five locations. Principals reported mainly being in contact with parents in problematic situations, which could not be resolved at the class level. They therefore considered their discussions with parents' councils as providing important additional perspectives, albeit not always easy ones due to often unclear areas of competence. Potentially problematic situations with parents included the refusal by parents to use email or install the school app. These, however, seemed to be exceptions and were dealt with on a case-by-case basis.

Within the specific structures, namely the respective governing bodies and specific resources, the interviewees made use of available room for manoeuvre when so inclined. For example, they proposed the introduction of a school app to the school board which did not know that such tools exist (School C) or they set up a parallel website as the one provided by the municipality was not deemed functional (School F). In doing so, they were very much guided by their interests and values. For example, many principals initially designed their schools' first website, because they thought their school needed one and they were interested in doing it themselves. Some principals mentioned that they were aware of parents preferring more insight into their children's school (e.g., through social media such as Facebook or Instagram). However, only one school had an official Facebook account (School D) which merely automatically published any news that was posted on the website. Others that mentioned this option (Schools A, C and H) consciously decided against it, based on arguments about a lack of resources, potentially challenging situations when posting photos, and having to deal with comments. The ever-changing availability of various channels continuously required schools to position themselves anew.

A special case of reacting to external developments was the COVID pandemic, which was unanimously seen as accelerating the move towards more digitally-based communication by schools and families. This move could be considered as ongoing, best reflected in the introduction of school apps, but also reflected in the fact that schools reported sending the same information via various channels to make sure that parents received it. The schools that introduced school apps commented on how the app changed the function of their website which, consequently, became a "*back up for the school app*" (Principal, School C).

Moreover, we found several very specific practices, such as audio files of newsletters in Portuguese on the website of School C which had many migrant workers living nearby, a school bulletin published on paper addressed to the wider community (School B), regular contributions to the local newspaper (School D), and school-wide parent evenings (Schools A, B and C). These were dedicated to specific themes such as social media, rather than being determined by the school calendar. It is interesting to note that having room to manoeuvre was rarely used to formalise schools' practices. Only two of the eight schools had guidelines for family-school relations; one other school had general communication guidelines, and a fourth school was in the process of elaborating communication guidelines. Overall, the principals' beliefs shaped the promotion of specific communication channels within their schools, as could be seen in the introduction of school apps. Although one principal regretted that his school was not among the pilot schools of the city for introducing an app (School G), another voiced and upheld strong opposition to such a tool (School F).

With regard to family-school relations, we repeatedly heard that most contacts with parents were managed directly by the teachers, who did "*the classic things*" (Principals, School C, G and H). This mainly referred to parent-teacher meetings, parents' evenings, or letters to parents at the beginning of each term. Principals were not always able to elaborate in detail on how teachers communicated with parents, but they were confident that "*most of them do a good job*" (School H). Therefore, a key issue was how teachers were guided, as it was through them that school leaders established new communication routines. We noted that the principals were very much aware of the current situation, which was marked by increased demands for digital tools on the one hand, and limited resources, not least in relation to teachers' knowledge and attitudes, on the other. This was, for example, reflected in the considerate, step-by-step introduction of school apps (Schools A, B, C and E) and in their respect for current practices:

WhatsApp is an important channel. Officially it is not allowed, but I know teachers use it. So I say that they should use broadcast lists instead of creating groups, so the messages go from the teachers and if someone replies not the entire group gets it, only the teachers. It is used, that is also a financial issue, WhatsApp is free, SMS cost. (Principal, School G)

Furthermore, we observed that their leadership styles reflected typical Swiss practices—participation and consensus-based decision-making. We saw this at School A, where all teachers were included in the redesign of the website, and in School B's approach to guidelines for its website:

We discussed the expectations that texts published on the website should meet and we agreed that they should have a certain standard, also when created by the students. They should be correct and not only cute or sweet. ... Well, that was about three years ago, in the meantime new teachers came, so we should probably take it up again. (Principal, School B)

Overall, we found that the principals showed awareness of ongoing developments, such as the availability of new tools or a change in parents' needs. While acknowledging the need for schools to adapt to these changes and leading the related processes, they only marginally interfered with teachers' practices in managing day-to-day contacts with parents. At the same time, they displayed distinct beliefs and values which guided them in the management of both family-school relations generally and communication channels specifically.

Discussion and Conclusion

The Findings section showed that families and schools reported using diverse channels for their communications with each other. We found that personal meetings, such as parent-teacher meetings or parents' evenings, phone calls, paper-based and electronic messages, and websites were used by all schools. Moreover, many made use of a school app. It is worth noting that the diversity of channels could be even higher, as other schools use tools that we did not find in family-school relations in Switzerland, namely social media, school management systems and chat bots (Breiter & Ruhe, 2018).

Managing this diversity on the side of families is shaped by children's ages and needs, their specific situations (e.g., parents' employment, use of after-school care, extracurricular activities, school transportation, parental engagement) and personal preferences. While some of these aspects increased the complexity of communication, the use of school apps reduced it considerably. In our sample, the rural families differed from their urban counterparts by tending to have more children—potentially increasing the complexity of communication due to individual practices for different classes—and made less use of after-school care—reducing complexity in communication—compared to their urban counterparts. Some of them relied on school transportation, which increased the number of interlocutors and added to the communication complexity, making the situation potentially more complicated in rural areas. Generally, parents reacted to what was offered by the schools, initiating contact primarily to report absences or when requiring specific information. Parents at schools using a school app reported particularly high levels of satisfaction. Overall, they seemed to be content with their schools' communication, regardless of their location, thus not confirming Kuusimäki et al.'s (2019) finding of higher appraisal of digital communication by rural parents.

Contrary to a more individual perspective that shapes families' communication practices, namely a specific child's needs as focus of many communication practices, schools were taking a more systemic approach oriented along their structures, primarily the roles of principals and teachers, the chronology of school years and educational trajectories. Their overall aim, as expressed in frequent mass emails, parents' evenings or the appraisal of tools in terms of convenience, is to distribute information to families as efficiently as possible rather than initiating dialogue (Goodall, 2016). Taken together, the use of diverse media for family-school relations still reflects what Thompson (2008) called infrequent practice—occurring at designated times—and the role of families as information receivers rather than two-way communicative partners (Epstein, 2010). Therefore, while adding to the structural complexity of family-school relations, digital

communication channels seem not to have fundamentally changed established practices of one-way communication, as has been found previously (e.g., Taddeo & Barnes, 2016).

As we set out to explore a phenomenon for which, to our knowledge, no research existed in Switzerland, we aimed for as heterogeneous a sample as possible to capture potential variations. One important element in generating variation was the location of schools, particularly the contrast between rural and urban schools, as has been done in other studies (e.g., Mazza, 2013). While we found some differences in family structures (e.g., the average number of children per family, employment and parents' engagement in school), these cannot be generalised due to the sampling method and the small number of families involved in the study. Future research would, therefore, need to validate our findings, namely that parents' employment, use of after-school care or school transportation are indeed related to more complex interactions with schools. It would also need to confirm that family structures do vary systematically between rural and urban regions. Rural families in our sample tended to have more children leading to potentially more complex communication with differing practices for each class. However, if a school uses a school app, as was the case in one of the rural schools, the complexity is reduced significantly. Moreover, the ad hoc personal engagement of rural families could lead to qualitatively different personal contacts, reducing the need for communication through other channels. Therefore, also interactions between the various aspects we identified to play a role would need to be examined more systematically in future research.

A potentially more important difference between locations were school structures, which we found to be more professionalised in urban areas. This was noteworthy in the infrastructure provided, which included specific tools such as software, e.g. a template for designing websites or specific communication apps. However, we found that school leaders consciously acted within their respective contexts, showing initiative in dealing with more regulation as it often existed in urban settings (e.g., School F) or filling a potential vacuum which can be caused by non-professional school boards (e.g., School C). Therefore, a key question is what school leaders' beliefs and preferences are, as in Switzerland they have chosen to work in a rural or urban school.

The relevance of school leaders' beliefs in view of adapting new technologies has been repeatedly shown (Macia Bordalba & Garreta Bochaca, 2019). For family-school relations, however, school leaders' beliefs about and knowledge of families' diverse realities is equally important. In this respect, we found little evidence for differentiated perceptions; rather, parents were referred to as a homogenous group marked by their need for information, which was assumed implicitly to be the same for everyone.

The one repeatedly differentiated group of parents were those who did not yet belong to the school's community. This was most clearly expressed on one website which offered a prominent link for parents who just moved to the respective municipality (School B). Moreover, schools' somewhat undifferentiated perception of parents was underlined by the fact that we found almost no linguistic diversity on the schools' websites. This suggested that monolingual websites possibly constituted a barrier to parent engagement not only in Australia (Piller et al., 2023). The potential of school apps for automated translations was only mentioned once and did not constitute a criterion for their introduction, as might be expected if principals were aware of linguistically diverse family backgrounds.

Other differences between schools, for example a somewhat more positive appraisal of communication overall in schools which used an app or a potentially more systematic approach to parent-school relations as expressed in written concepts, seemed to be related to personal convictions and leadership styles. We therefore conclude that principals' beliefs might be more influential for family-school relations than schools' locations. Their beliefs seemed particularly relevant in view of reaching increasingly heterogeneous families where different tools could

facilitate reaching specific groups of parents (e.g., school apps with integrated translation or specific sections for new parents on a website).

Despite generating some interesting insights, our findings have several limitations. First, our study set out to explore school websites rather than the entirety of family-school relations. Therefore, the voices of teachers and administrative staff have not been integrated systematically, and some forms of potential data were not collected (e.g., we did not collect any emails or observe parents' evenings). This led to an incomplete picture, particularly from the schools' perspective. While we had an insight into the leaders' experiences and perceptions resulting in the perspective described, everyday practices by teachers, who were generally parents' direct contacts, were not examined. However, it is worth noting that the perspectives of the two interviewed teachers did not differ markedly from the principals', which might be explained by the fact that the focus of the interviews was the school as an entity, not the perspective of its individual staff.

A second limitation is the sample of interviewed parents. Contrary to the schools, which were chosen systematically on the basis of diverse criteria (location, characteristics of websites, etc.), we interviewed all parents who volunteered to participate. Unfortunately, only parents from one urban school participated, leading to a somewhat limited perspective of urban families. And, while we did achieve some of the desired variation (e.g., age of children, family constellation or variation in their use of the website), we did not capture other essential variations, particularly in view of the language/s spoken at home. Except for one interview in French, all others were conducted in Swiss German, though interviews in other languages would have been possible. Therefore, the presented families' perspective is limited and has most likely influenced the generally positive appraisal of their relations with schools.

At the same time, we identified some aspects which should be taken into consideration when further exploring family-school relations and the use of diverse communication channels, namely gender-related practices, the children's situation, personal preferences or principals' understandings of and preferences for a specific school community, be it rural or urban. Broadening theoretical approaches for studying family-school relations to include more than beliefs related to specific technologies (e.g., Macia Bordalba & Garreta Bochaca, 2019) could be beneficial for a deeper understanding. This could be done by using the concept of mediatisation (Hepp et al., 2018). Moreover, an international perspective would be valuable, to contrast Swiss practices and the country's small scale with another country's practices. This could identify other relevant aspects.

Lastly, the notion of continuous adaptations in communication channels used by both schools and families has been considerably influenced by experiences made during the pandemic, with the first school lockdown in Switzerland having taken place some 1.5 years before the interviews started. There is general agreement that this was an important factor accelerating ongoing efforts towards the integration of technology in schools (S-Clever-Konsortium, 2021). At the same time, the most noticeable change in the Swiss context—the introduction of school apps—had started before the pandemic and continues today. We assume, therefore, that this study is a snapshot of one moment in time as are others in the field of technology and family-school relations.

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