

Disrupting the Grammar of Schooling? Covid-19 and the Use of Educational Technologies in Primary Schools in Jerusalem

Gideon Dishon

Ben-Gurion University of the Negev
gdishon@bgu.ac.il

Hemy Ramiel

Independent Researcher
hemyram@gmail.com

Hilla Tal

Ben-Gurion University of the Negev,
Ministry of Education Chief Scientist
office
hillata@gmail.com

Walaah Mahajna

Tel Aviv University
Walaamahajna@mail.tau.ac.il

Johnatan Verissimo Yanai

Tel Aviv University
yvyantai@gmail.com

שיבוש הדקדוק הבית ספרי? דפוסי השימוש בטכנולוגיות חינוכיות בבתי-ספר יסודיים בירושלים במהלך משבר הקורונה

חמי רמיהל

חוקר עצמאי
hemyram@gmail.com

גדעון דישון

אוניברסיטת בן-גוריון בנגב
gdishon@bgu.ac.il

ולאה מחאג'נה

אוניברסיטת תל אביב
Walaamahajna@mail.tau.ac.il

הילה טל

אוניברסיטת בן-גוריון בנגב,
לשכת המדען הראשי במשרד החינוך
hillata@gmail.com

יונתן וריסימו ינאי

אוניברסיטת תל אביב
yvyantai@gmail.com

Abstract

The transition to technology-mediated remote schooling during Covid-19 forced schools to rely on digital technologies to create new routines and practices, thus potentially disturbing the prevailing grammar of schooling. This offers a unique opportunity to explore how educators perceive and realize educational technologies, and how their use is mediated via socioeconomic, cultural and political differences. Based on semi-structured interviews with principals and teachers in Muslim-Palestinian and secular-Jewish primary schools in Jerusalem, we analyze the different uses of the most common technological tools and platforms across schools (WhatsApp, Zoom, and Google Classroom). Our analyses indicate that the affordances of such technologies, as well as their depiction, were not fixed and varied

*Proceedings of the 17th Chais Conference for the Study of Innovation and Learning Technologies:
Learning in the Digital Era*

Y. Eshet-Alkalai, I. Blau, A. Caspi, N. Geri, Y. Kalman, T. Lauterman, Y. Sidi (Eds.), Ra'anana, Israel: The Open University of Israel

across schools. Namely, we found that lower-SES Palestinian schools, who faced more acute challenges in terms of access, utilized digital technologies to restabilize the familiar grammar of face-to-face schooling in order to monitor and support students and families. In contrast, average-SES Jewish schools focused less on the grammar of schooling and directed more efforts towards temporary solutions centered on students' social and emotional wellbeing.

Keywords: Educational Technologies, Remote Schooling, Affordances, Grammar of Schooling, COVID-19.

Introduction

Digital technologies and schools are often presented as facilitating two opposite modes of learning: open, flexible, individualized technology-mediated learning in contrast with the rigid, teacher, and group-centered structure of conventional schooling. This depiction has led to the aspiration that digital technologies could transform the dominant model of formal schooling and introduce more authentic modes of learning (Dishon, 2020; Petraglia, 1998). However, in practice, this has failed to materialize, and researchers have noted that new technologies have tended to be integrated into the prevailing "grammar of schooling" (Cuban, 2001; Selwyn, 2013).

The widespread transition to technology-mediated remote schooling (TMRS) during the covid-19 pandemic created a new state of affairs, in which the grammar of schooling was destabilized, and schools had to rely on digital technologies to create new routines and practices. The need to pursue such drastic and rapid changes is therefore a rare opportunity to explore the interplay between digital technologies and the grammar of schooling. Accordingly, this qualitative study examines the experiences, choices and perceptions of principals and teachers in Muslim-Palestinian and secular-Jewish primary schools in Jerusalem, analyzing how educators perceived and realized educational technologies, and how their use was mediated via socioeconomic inequalities and cultural and political differences.

Theoretical Background

Digital Technologies and the Grammar of Schooling

To understand the complexities of a sudden shift to TMRS we rely on work in critical studies of technology and education. This approach emerged as a response to techno-optimistic visions of technology revolutionizing schooling, which overlooked educational technologies' history of cycles of hype, hope and disappointment (Cuban, 1986; Selwyn, 2013; Sancho-Gil et al., 2020; Watters, 2020). In most cases, novel technologies were integrated in schools in ways that undermined their revolutionary potential or failed to have a substantial impact (Philip & Garcia, 2015; Rasmussen & Ludvigsen, 2009).

This limited impact is largely due to challenges of integrating novel technologies into the prevailing "grammar of schooling": "the regular structures and rules that organize the work of instruction... standardized organizational practices in dividing time and space, classifying students and allocating them to classrooms, and splintering knowledge into 'subjects.'" (Tyack & Tobin, 1994; p. 454). This grammar not only shapes how learning takes place, but also the relations between the different actors in the school community (teachers, students, parents...).

However, the notion of the "grammar of schooling" remains at a level of generalization that might lead to overlook how the aims and practices of schooling vary across contexts. Inquiries into the use of technologies in education often rely on the implicit assumption that technological devices have fixed affordances and will reproduce the same modes of conduct within and across educational settings, while ignoring the social, political and epistemological characteristics of technology's use (Godhe et al., 2019; Postman, 1992; Ramiel, 2019). This results in overlooking how technological affordances vary in light of users' needs, aims and associated meanings (Davis, 2020; Puckett & Rafalow, 2020).

The Shift to Online Schooling During the Covid-19 Pandemic

While it is still early to appreciate the long-term implications of the transition to TMRS, it is clear that it temporarily destabilized the prevailing grammar of schooling, requiring schools to prioritize and choose among competing goals and structures (Reich et al., 2020). Even schools that aimed to maintain the prevailing grammar of schooling were required to prioritize and choose among different goals and structures. Critically, such considerations diverged according to socioeconomic, cultural and local features. These differences were particularly pronounced during TMRS as it relies on having the necessary access to computers and the internet, a home environment that enables learning, and family members that are able to support students' learning (Teräs et al., 2020; Williamson et al., 2020).

Accordingly, in this paper we set out to (1) examine if and how the use of digital technologies in remote schooling destabilized the grammar of schooling; (2) how educators navigated and interpreted these challenges; (3) and how these were mediated through socioeconomic and political and cultural characteristics.

Context and Methods

The study was conducted in three Muslim-Palestinian and three Jewish-Secular primary schools in the Jerusalem school district. The Jerusalem district serves 286,900 students; more than 40% attend ultra-orthodox schools, close to 35% attend Arab speaking schools and around 25% attend secular and modern-orthodox Jewish schools. In light of the glaring disparities between the secular-Jewish and Palestinian populations in terms of access to physical infrastructure and education (Shtern & Rokem, 2021), studying these two populations allows examining how the transition to TMRS was mediated by socioeconomic status and cultural and political characteristics. Schools were chosen based on a purposive sampling that highlights maximum variation in terms of diverse representation of socioeconomic status within each population (Patton, 1990) (see Table 1 for more details).

Table 1. Demographic characteristics of the different schools*

	Name**	Size	Population
Muslim-Palestinian Schools	Ibn-Sina	Medium (250-500 students)	School for boys; low SES
	Al Razi	Small (less than 250 students)	School for boys; very low SES
	Ibn-Haldun	Medium (250-500 students)	Very low SES
Secular-Jewish Schools	Ben-Zvi	Small (less than 250 students)	Average SES; small group of refugee students
	Ibn-Gabirol	Medium (250-500 students)	Above average SES; small group of very low SES students
	Nordau	Medium (250-500 students)	Above average SES

* We intentionally left some of the school characteristics vague as to avoid identification.

** All names are pseudonyms.

We conducted semi-structured in-depth interviews (Kvale & Brinkmann, 2009) with school principals, 2-3 teachers, and chair of the parents committee. The interviews were conducted October-December 2020 via the Zoom platform and were recorded and transcribed verbatim (interviews with Palestinian interviewees were conducted in Arabic and translated and transcribed to Hebrew). Interviews focused on the way in which schools managed the transition to TMRS: the challenges and dilemmas they faced, their responses, focusing on participants' explanations for their choices.

Thematic analysis was used to identify the main themes emerging from our data (Braun & Clarke, 2006). The analysis started by going the data several times (each interview was viewed by at least three researchers), highlighting relevant utterances. Then, we inductively identified initial codes, which were later reviewed and organized into broader themes. The themes were then reviewed and refined, relying on a comparative method, comparing interviews both within and across schools, focusing on reoccurring themes and the unique characteristics of each school (Thornberg & Charmaz, 2014). Finally, we examined these cases in light of the data set as a whole, better articulating themes where needed.

Findings

Our analyses examine the shifts in the "grammar of schooling", focusing on two key aspects: the temporo-spatial grammar and the relational grammar (see Table 2 for a summary of themes, and illustrative quotes).

Temporo-Spatial Grammar – Establishing the Virtual Schoolhouse

In all schools, the transition to TMRS was characterized by a reliance on two main technological tools: WhatsApp and Zoom video conferencing. In some cases, these were complemented by a school wide learning platform (e.g., Google Classroom). Although all schools also relied on tailored educational apps for specific lessons, these were not mentioned as key to the grammar of TMRS.

WhatsApp and the Blurring Boundaries of the School Day

Across all schools, WhatsApp was mentioned as key in the initial response to TMRS, facilitating communication concerning the rapidly-changing circumstances and distributing learning resources, through individual communication and class-wide groups. In most schools whole-class WhatsApp groups existed before the pandemic, and participants mentioned the relative ease of use and familiarity with this technology as reasons for its early dominance.

The centrality of WhatsApp had vital implications for the organization of time. Participants noted a sharp increase in the volume and frequency of WhatsApp messages, and pressure stemming from the instantaneous and ongoing nature of communication on WhatsApp. Thus, principals and teachers repeatedly mentioned both the pressure, expectations, and perceived importance of all-day availability. This made creating viable boundaries between work and off-work time challenging and contributed to an overall sense of burnout.

Zoom and the Virtual Replication of the Classroom

All schools initially relied on Zoom as the centerpiece of TMRS, conducting 3-5 daily whole-class lessons. Notwithstanding adaptations in terms of the content and pedagogy, the overall structure of the school day was roughly equivalent to the existing schedule in terms of the number of lessons, their length, and sequencing. Hence, Zoom was initially used to approximate in-person education, and the familiar structures and routines of in-person schooling.

Over time interviewees from all schools noted a sharp decrease in the number of Zoom lessons. However, the reasons for this state of affairs were diverse. A key trend was that interviewees from schools in lower SES neighborhoods more frequently mentioned logistical challenges that made conducting video conferencing sessions difficult, such as lacking a stable internet connection or limited availability of end tools (especially in larger families), whereas average-SES schools mainly appealed to pedagogical and emotional reasons that rendered a full-day Zoom school draining and ineffective.

Moreover, the aims guiding Zoom lessons evolved, with a stronger emphasis on the shared temporal and spatial structure as a response to children's social-emotional needs in light of social distancing and the overall turbulence of life during the pandemic. This trend was more pronounced in average-SES Jewish schools, where some Zoom meetings were explicitly dedicated to non-academic aims (small emotional support groups, cooking lessons, etc.).

Platforms and the Bureaucratic Organization of Schooling

The third tool used by some schools was school-wide platforms such as Google Classroom, Microsoft 365. Such platforms allowed principals to all aspects of TMRS under one virtual roof, tracking the many mundane interactions that go unnoticed in face-to-face schooling: taking attendance, handing out pedagogical resources, collecting assignments, and so on. Interestingly, all three Palestinian schools transitioned to a school-wide platform (two schools immediately, and the third later), and only one lower-SES Jewish school used a more limited platform, which merely served teachers but not students.

Table 2. Summary of themes.

Theme	Sub-theme	Examples
Temporo-spatial grammar – establishing the virtual schoolhouse	WhatsApp and the blurring boundaries of the school day	<p>Centrality of WhatsApp: "Each home teacher has a class WhatsApp group that allows direct communication with children's mothers. We update the moms about everything that happens in class, and we also update them about homework, tests, tasks, etc. The parents got used to WhatsApp being the central and formal mode of communication." (Principal, Ibn-Haldun)</p> <p>All day availability: "I worked six or seven times as hard as I usually do... I had almost 400 students and I had to respond to every task that every student sent" (Teacher, Nordau)</p>
	Zoom and the virtual replication of the classroom	<p>Replication of school structure: "We built a schedule for the kids, four Zoom lessons a day but it was very hard on the parents." (Principal, Ibn-Gabirol)</p> <p>Problems with access: "We are in a very crowded part of East Jerusalem, you can often find 2-3 cousins sitting together for a Zoom lesson. I have a student who has to sit outside on the stairs so he could connect through his phone and watch the Zoom." (Teacher, Ibn-Haldun)</p> <p>Emotional needs: "[the kids] were becoming zombies and they couldn't take it anymore, so we decided that they will have lessons in math and Hebrew, and then we gave them something for their soul, art, yoga" (Principal, Nordau)</p>
	Platforms and the bureaucratic organization of schooling	<p>The need for a platform: "WhatsApp became too busy and full of constant messages. It was impossible to keep up with the different instructions. The easiest thing to was to set up a portal on Google, which was free." (Teacher, Ibn-Sina)</p>
Relational grammar – demarcating school and home	The school enters the home	<p>Privacy: "We asked all the teacher to use a virtual background, if the students couldn't, they should have a wall behind them – all this to protect the privacy of the family of course." (Principal, Al Razi)</p> <p>Intimacy: "I am in his home, and I can see how he interacts with his parents, and I see the parents, and the kid is spread before me, not just what I can see in class... he can [also] see something different [about me], and I can see something different about them [the students]" (Teacher, Ben-Zvi)</p>
	Schooling parents	<p>"We broke the boundaries of learning in school beyond what schools normally do... we have families where parents were pulling their hair and told me we can't do it." (Principal, Ibn-Sina)</p> <p>"You need to teach the moms. First to third grade don't know how to learn alone. We had meeting WhatsApp meeting with the moms on the and we said we want to teach them how to use Zoom." (Principal, Al Razi)</p>
	Parenting teachers	<p>Criticizing teachers: "We [teachers] really felt like a punching bag to a certain extent, if its parents sitting in Zoom lessons, and you can't be free like you are with the kids, or that they [parents] are correcting you all of a sudden" (Teacher, Nordau)</p>

Relational Grammar – Demarcating School and Home

The destabilization of the grammar of schooling was not limited to temporo-spatial aspects, and also blurred the relations between schools, students, and families.

The School Enters the Home

In light of the dominance of Zoom, students and teachers were often able to peak into each other's home environment. This was mainly described in two contradictory ways: (1) concerns regarding the violation of students' or teachers' privacy; (2) an opportunity to create stronger emotional bonds through increased involvement in each other's lives (e.g., seeing each other's home, pets and family), and the pursuit of "non-school" activities together (e.g., cooking).

Schooling Parents

This blurring also led to instances where schools felt the need (or opportunity) to take on increased involvement in the home environment. In Palestinian and lower SES schools, teachers viewed this as a way to better understand and monitor the specific challenges students were facing and offer tailored solutions. Moreover, as schooling was dependent on the proper use of technological tools, which often could not be managed by students in younger grades, schools took on the task of training parents to better manage their children's learning, offering (ad-hoc or organized) training for parents (especially mothers), which included technical aspects but also emotional support.

Parenting Teachers

Conversely, the mediation of schoolwork via parents, and the centrality of Zoom allowed parents new forms of involvement in- and supervision of their children's education. This involvement stretched from benign technical help to active interruptions and criticism during lessons in real time. This trend was far more pronounced in average-SES Jewish schools, in which teachers mentioned more parental support, but also complained about interruptions, and criticisms on technological and pedagogical aspects, going so far as correcting teachers' grammar.

Discussion

The hasty exodus to TMRS during covid-19 served as a unique opportunity to examine the interplay between educational technologies and the grammar of schooling. Our findings illustrate that digital technology both de- and re-stabilized the prevailing grammar, yet patterns of tech use, as well as their interpretations, were mediated through SES status and cultural and political characteristics.

Namely, lower-SES and Palestinian schools, who were faced with far more acute challenges in terms of students' basic needs (access to learning, psychological and physical well-being), adapted a more structured approach. Schools relied on digital technologies to maintain the academic facets of the grammar of schooling, closely monitoring students and families (most notably through school-wide platforms). In contrast, average-SES Jewish schools made less of an effort to maintain the grammar of schooling. Instead, the emphasis was on how digital technologies could cater to students' social-emotional needs (small group work, "extra-curricular" activities).

These differences were also reflected in the shifting relations between schools and families. With respect to lower-SES families, the focus was on teachers' and schools' responsibility to take a more active and pastoral stance in monitoring and supporting parents (due to new technological challenges and the overall calamities of the pandemic), while in average-SES schools, parents often positioned themselves as capable of and responsible to monitor, manage, and critique teachers' professional work.

In summary, we highlight two important insights concerning the interplay between the grammar of schooling and digital technologies. First, these findings illustrate the importance of a contextual understanding of the affordances of digital technologies, one that goes beyond what can be done with technology and focuses on (a) the concrete social, political and material conditions underpinning their use; (b) actors' educational aims and values, and their interpretations of technology's role in light of these. For instance, whereas Palestinian schools saw school-wide platforms as a necessary tool to monitor and support their students and families, Jewish schools were wary of demanding students and families – who were viewed as overburdened – to master and use new technological tools. Second and relatedly, this stresses the need to avoid reifying the "grammar of schooling", treating it as a stable and uniform characteristic. Our findings indicate both how different educators viewed this grammar differently, and that this understanding was shaped by specific and local understandings of schooling and the challenges their schools faced.

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