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DIGITAL ERA? NOT AT SCHOOL! PARENTS' PERCEPTIONS TOWARDS TECHNO-PEDAGOGY

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Abstract

The present study will focus on parents' perception of techno-pedagogy (TP), (i.e., the entry of the education process on the digital era coordinates. The Organization for Economic Cooperation and Development (OECD) outlined policies to increase integration of TP in education. School policies also influenced by parental involvement, including TP. Knowledge of the relationship between the two factors is limited. The participants were 13 parents from two rural secondary schools in northern Israel's geographical and social periphery. The schools are similar, except one applies Bring Your Own Device (BYOD) program - students use personal iPads. Personal interviews were conducted, asking parents to describe their background, including daily digital-technology (DT) use at home and work, knowledge about, and perceptions of attitudes towards DT use at school. Data-driven content analysis was performed to identify themes and map parents' perceptions of DT integration in daily life and at school. There are three findings: The first finding indicates a gap between parents' DT use on daily basis and negative perceptions of the TP integration in school ranging from reluctance to decisive opposition. The second finding was parents' negative perceptions of TP resulted from lack of knowledge about TP. The third finding: surprisingly, though not asked, all parents addressed distance learning during the COVID-19 closures. This finding contradicts studies suggesting the pandemic has accelerated TP integration. Consequently, students may be disadvantaged in future integration into the labor market. Although generally valid conclusions cannot be drawn, given the micro-research size, certain conclusions can be advanced and proposed.

Keywords: COVID-19, ICT, Parents-perceptions, Periphery, Periphery, Techno-pedagogy

1. Introduction

1.1. Digital Era – ICT Influences Periphery Economy

In the digital era, ICTs (e.g., digital tools such as computers, tablets, communication means such as the internet, smartphones, and software) are common and affordable. They are used for work, personal use, and entertainment (Page Jeffery, 2022). Also, ICT increases abilities and, as a result, increases economic growth (Kallal et al., 2021). Therefore, ICT competence is needed for students' education and future (Page Jeffery, 2022).

ICT diffusion is not even, and it is less common and developed in the periphery. Eder (2018) defines periphery as a distant geographical area, not developed, with low financial resources, and inferior with ICT facilities. An example of a periphery is the Swiss rural mountains, whose topography is a physical barrier that slows communication network development. Also, the area is less populated, and the population is spread (Burgin & Mayer, 2020). Despite all that, the periphery is slowly getting digitized, distances shorten, and time hastens. ICT enables new occupation possibilities while changing its agricultural nature and bringing the city's fast pace (Burgin & Mayer, 2020; Eder, 2018; Kallal et al., 2021).

Technology Acceptance Model (TAM) predicts ICT acceptance based on its usefulness and ease of use (Tsuei & Hsu, 2019).

Digital natives theory suggests that people born in the digital era (i.e., since 1980) considered to have naturally developed ICT skills. However, using ICT naturally is insufficient for learning (Burgin & Mayer, 2020). However, Hatlevik and Bjarno (2021), who studied digital native preservice teachers' digital distractions, found students need guidance to manage their learning and minimize digital distraction.

Files must be in MS Word. Follow this order when typing manuscripts: Title, Authors, Affiliations, Abstract, Keywords, Main text (i.e., introduction, problem statement, research questions, purpose of the study, research methods*, findings*, conclusions*), Acknowledgements, References, Appendix.

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1.2. Parents Influence Students' ICT Skills

Tsuei and Hsu (2019) imply that parents' positive beliefs promote students' ICT skills. Parents support students' ICT skills by providing them with means despite their resistance to students' use of ICT (Hadad et al., 2020). Hammer et al. (2020) indicated that exposing students to ICT from early age is essential to developing their skills. Moreover, parents should expose students to a worthy use of ICT that will contribute to their learning (Tsuei & Hsu, 2019). According to Keane and Keane (2022), parents affect students by modeling meaningful methods of using ICT.

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Hammer et al. (2020) claimed parents significantly affected students' ICT skills development, whereas teachers did not.

1.3. ICT Implementation in Education

For the last four decades, governments and organizations such as the OECD have initiated programs to instill ICT in education (Page Jeffery, 2022). Many studies accompanied those ICT programs, and knowledge was gathered, confirming ICTs' immense contribution to raising students' motivation, improving their achievements, and promoting innovative teaching methods (Bond, 2019).

1.4. Parents' Involvement in School Policies

Parents influence school policies, including ICT and TP use, that improve students learning (Bond, 2019). Page Jeffery (2022) found parents support school policies as they allow them to supervise students learning. Keane and Keane (2022) imply parents should be involved in school policies to improve students' ICT skills. They acknowledge parents' low self-efficacy sometimes prevents their involvement. Bond (2019) suggested that parents' misconceptions delays' TP implementation.

According to Ben-Amram and Davidovitch (2021), good relationships between school and parents are needed to improve students learning, motivation and well-being. They suggested good teacher-students relationships contribute to students' motivation and learning experiences. Moreover, teacher-student relationships let students feel more comfortable and less stressed. Also, teachers see different profiles of students than parents.

Despite ICTs' contribution to learning, Hadad et al. (2020) found that many parents oppose ICT use mainly economic, not pedagogic. They explained that parents do not perceive smartphones and mobile ICTs as learning devices.

1.5. Parents-Teachers Relationships

Page Jeffery (2022) asked who is responsible for students' education? She explained that the boundaries between school and home are slowly diminished and between school and social media learning. Furthermore, she mentioned that online learning was challenging since online platforms were complicated. As a concecuence parents were frastraited. Eventually, parents felt they had to take responsibility for their children's learning.

1.6. COVID-19 Pandemic Effect on ICT Perceptions and Attitudes

COVID-19 pandemic was a unique phenomenon. Schools and workplaces were closed, and families stayed home to maintain social distance and protect people from contracting the coronavirus. Schools transferred to online learning in various forms, including video conference platforms (Ben-Amram & Davidovitch, 2021; Bubb & Jones, 2020; Lase et al., 2021; Öçal et al., 2021; Pratama & Firmansyah, 2021).

Ben-Amram and Davidovitch (2021) studied teachers', parents', and students' attitudes toward online learning in Israel. They found that good parents-teachers relations had positively influenced

students' meaningful learning. Moreover, ICT use reduce distance and strengthen the relations between parents and teachers. Bubb and Jones (2020) found an increase in parents' involvement in students learning due to the opportunity to observe students participating in online lessons. Another contribution of distance learning was improving creative learning, encouraging students' independent learning, and teachers implementing TP. They also indicated schools' leaders and policymakers supported parents and students, and caring for the learning environment would be appropriate. Consequently, parents-teachers relations improved.

Pratama and Firmansyah (2021) found that one of the problems during distance learning in Indonesia was family had only one computer and more than one student. Consequently, most students used smartphones. Moreover, smartphones' connectivity to the internet was more efficient and stable than computers. Therefore, smartphones were the most used ICT devices during distance learning, and tasks format should have been compatible with smartphones allowing students to learn. Another problem Lase et al. (2021) pointed out ICTswere not evenly spread throughout Indonesia.

Lase et al. (2021) study on parents' perceptions of distance learning in rural Indonesia found parents believed schools were responsible for students learning. Given the economic stresses and lack of digital competence, parents found it difficult to support students learning. Also, students' attitudes toward distance learning were negative.

Ben-Amram and Davidovitch (2021) indicated that the atmosphere was pleasant during synchronous lessons where the teachers were present. In contrast, asynchronous assignments without teachers' assistance were challenging and more strenuous for students.

1.7. The research questions

i.   What were parents' perceptions and attitudes towards their children's use of ICT for learning purposes?

ii. What were parents' perceptions and attitudes towards teachers' use of TP?

2.   Research Methods

Qualitative research was applied to explore parents' attitudes and perceptions towards TP.

The participants were 13 parents: 11 mothers and two fathers from two regional rural schools in the periphery of northern Israel (see Table 1). School names were changed to General and BYOD. Seven parents from school General and six parents from school BYOD. All parents are educated, and 10 have an academic degree. The schools are within a short distance from one another. Therefore, some parents know both schools.

Both schools are secondary, having students in grades 7th to 12th. The classes have a teacher's computer, projector, and a few computer laboratories. In addition, school BYOD participates in the BYOD program. Parents of students in school BYOD were required to buy their children iPads hence they are more involved and may have interesting insights. A convenient sampling of participants was chosen, assuming former acquaintances would share more information. Parents who participated in this study are educated people who use ICT for work, personal use, and pleasure.

The research tool was a semi-structured interview. The first part gathered information about parents' background: age, education, profession, and ICT use (see Table 1). In the second part of the interview, parents were asked about ICT use in school. Participants were interviewed in their homes or by phone as they chose. Interviews duration was between 20 to 60 minutes, depending on parents' willingness to elaborate. Interviews were recorded and later transcribed and analyzed using thematic analysis.

Table 1. Participants information

Parent Name	Education (InYears)	Occupation	Adolescent Child School	Computer	Tablet or iPad
Emily	12	Personal services	General	Shared	No
			BYOD	Shared	Yes
			General	Shared	No
Carmen	19	Education	General	Personal	No
Andrei	17	Industry	General	Personal	No
Daniela	14	Industry	General	Shared	No
Mariana	15	Public health	BYOD	Shared	No
			BYOD	Shared	Yes
Laura	12	Maintenance	BYOD	Personal	Yes
Julia	17	Municipality	General	Personal	No
			General	Personal	No
Lily	16	Marketing	BYOD	No	Yes
Sofia	16	Education	General	Shared	No
			General	Shared	No
Anna	17	Financial	BYOD	Personal	Yes
			BYOD	Personal	No
Sharon	14	Hi-tech	General	Shared	No
Emilian	16	Education	BYOD	No	Yes
Rachel	16	Design	BYOD	Personal	Yes

Note. Participants' names were replaced to comply with the ethical code of conduct.

3. Findings

The study aimed to learn perceptions and attitudes toward students' ICT use and teachers' TP. The analysis identified two major themes for each question: supporting and opposing ICT use (see Table 2). In some cases, parents presented different aspects, expressing complex perceptions. An interesting finding was, although not asked, COVID-19 pandemic influenced parents' perceptions and attitudes. Thus, it will be discussed separately.

Table 2. Themes Summary

Perceptions and Attitudes Students' ICT Use		Perceptions and Attitudes Teachers' Techno-Pedagogy Use	
Support	Oppose	Support	Oppose
ICT enhances progress	Losing pedagogical skills	Teachers' control over ICT use	Denying liberty of choice
ICT improves learning	Impairs students'	ICT improves teaching	Moral and economic

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	physical and emotional well-being		reasons
Making up with the reality		Teacher-student relations	Natural ICT use versus pedagogy use
Students' social life		Not all ICT are the same	Parent student relations

3.1. Parents' Perceptions and Attitudes Regarding Student ICT Use

All parents supported students' ICT skills by providing all students with smartphones. Also, all students were given personal computers or shared with other family members or iPads, five with both (see Table 1). However, interviews showed parents' attitudes divided into three major themes: four were opposing, three were indecisive, understanding the complex reality, and six were supporting.

3.1.1. Parents Supporting Students' ICT Use

3.1.1.1. ICT Enhances Progress

ICT devices are considered advanced technology used by developed societies. Anna believes ICT is students' world: "This is progress, they are growing into. I think there is much good in it". Emily says ICT benefits students: "ICT upgrades their lives in many ways, big time."

Andrei highly evaluates ICT skills to ensure students' socioeconomic status in the future: "I want my child to work in high-tech because the average salary in high-tech is 26 (thousand) while the average salary is about 11 or 12 (thousand)."

3.1.1.2. ICT Improves Learning

Parents recognized ICTs' contribution to students. Anna implies visualization using ICTs can help students understand abstract: "It simplifies things. I mean, visual presentations make learning more interesting."

Rachel refers to ICTs' ease of use: "You do not have to look for an encyclopedia in the library. You can immediately find it."

Sharon indicated ICT systems that support independent learning: "Independent learning using software that teaches you." Sofia adds immediate feedback: "Students get immediate feedback and correct their answers."

Emily said students organize their learning better using ICT: "The learning environment is well organized. There are no books on the table. You sit only in front of an iPad."

3.1.1.3. Making Up With the Reality

Parents accept the reality that ICT means are part of our lives. Emily thinks schools should reflect our reality: "We are deeply in it. So, it will be unreasonable not to use ICT in schools." Daniela preferred more traditional learning but had accepted the use of ICT: "Look, I guess it will lead there, let's hope it will lead to a place like..."

3.1.1.4. Students' Social Life

Parents understand that students' social livesare on social media. Lily opposed ICT because it prevents students develop socials skill. Nevertheless, she accepts that ICT is needed to maintain students' social life: "If I choose to raise my child in a non-anthroposophical environment, I must give them tools to deal with social life." Lily also said: "I gave my child a smartphone because all communication and social interaction happen there."

3.1.1. Parents OpposingStudents' ICT Use

3.1.1.1. Losing Pedagogical Skills

Parents are concerned students will lose skills they perceive as needed. Daniela opposes ICT use because she thinks it is essential: "Losing writing skills, reading skills. No, absolutely, no!" Laura believes handwriting and memorizing are essential skills that students do not practice these days: "Actually, they lose hands-on skills such as writing and memorization material. These skills will be lost because everything is on the computer today."

3.1.1.2. Impairment of Students' Physical and Emotional Well-Being

Parents were worried ICT use could influence students' health as a result of radiation and eyesight damage due to staring for hours on screens. Carmen shared her concerns: "We put many routers everywhere. We use wi-fi and Bluetooth earphones. Eventually, it generates radiation that may cause some damage." Daniela described physical health issues: "It is not healthy for the eyes, for headaches. As if they are frantic and not so calm. Seeing them in front of the screen all day annoys me." Lily perceives ICT use as an addiction: "I think it's an addiction that intensifies screens' harmful effects and suppresses their will to produce interaction with friends."

3.2. Parents' Perceptions and Attitudes Regarding Teachers' TP Use

Parents were asked if teachers implied TP in class was necessary. Parents were more positive when the question referred to teachers, not students: four parents opposed, one parent was indecisive, and eight parents agreed on the importance of teachers applying TP.

3.2.1. Parents Supporting Teachers TP Use

3.2.1.1. Teachers' Control Over ICT Use

Parents' perception was that teachers control students' use of smartphones. Laura: "At school, there are no screens. Students put their smartphones in their bags and leave them while studying. It's a convention that has existed for a decade."

Anna said teachers forbid students' use of applications to solve equations: "Students should not use apps that solve math equations with the click of a button. I know the teachers are strict about it and do not allow it."

3.2.1.2. Teacher-Student Relations

Communication using ICT is more efficient and relevant. Lily said: "Direct communication with your learning peers and teachers." Carmen commented: "It's important because it's the language the children speak today."

3.2.1.3. Not All ICTs Are the Same

Sharon and Lily support computers use and have positive attitudes toward computers are positive. Parents perceive computers as professional tools in contrast to iPad and smartphones, which are perceived as more for pleasure and fun. Sharon said: "Look, the main problem is smartphones' extensive use, not computers." Lily believes computers are proper learning means: "I am against ICT. However, computers' use, in particular, is not enough. In my opinion, it's a shame."

3.2.2. Parents' Opposing Teachers' TP Use

3.2.2.1. Denying Liberty of Choice

BYOD school parents were asked to buy iPads. Parents did not think they could confront school's decision. Therefore, they opposed teachers' TP use. Laura said she was forced to buy an iPad: "It is a social compulsion that not every parent can afford financially." Lily chooses the word "doom" to describe her having no choice but to buy an iPad: "We were doomed to buy an iPad before the eighth grade."

3.2.2.2. Moral and Economic reasons

Parents from both schools were concerned about the financial burden of purchasing ICT for deprived families. Andrei said: "But it's not fair because we have the money. If I was (I'm not) in a situation where I don't have money… As long as you take care of the poorer, then I agree." Sofia said: "Regarding the purchase, I don't have a problem, but I believe there will be parents with such problems. It's not fair to do that."

3.2.2.3. Natural ICT Use Versus Pedagogy Use

People naturally use ICT daily. Nevertheless, it is insufficient for pedagogy use of ICT. Laura raises provocative statements: "They have access to larger information than the teacher provides. On the other hand, why go to school?" Although Laura provoking question, she had clear perceptions of their values: "In school, they will be enriched with information beyond what is online." Laura shares her perception about teachers' and schools' role as masters in learning who can teach students how to learn: "The information is overwhelming. Students need guidance on what to focus on."

Using ICT to substitute traditional means may be impractical. Emilian said: "Doing homework in digital books on the iPad is difficult." Emily described the consequences: "In the early years, students used iPads intensively. Today they use it much less." Mariana noticed technical problems caused teachers' insecurity: "Some teachers are afraid of it. They don't like it."

Parents indicate that teachers need to improve TP knowledge. Rachel said: "With reservations, there is a delay between the desire and the capability of teachers." Next, Rachel said that the school's purpose is teaching. TP is not the only method: "It is essential that teachers will teach in the most exciting way they can. What they feel will be the best way for my child."

3.2.2.4. Parent-Student Relations

ICT use makes it difficult to Daniela to help her children with homework which is an activity that is part of their relationship: "I like traditional learning. It is easier for me as a parent to help my children."

3.3. COVID-19 - Parents' Perceptions and Attitudes

COVID-19 pandemic schools' closures and transferring to distance learning was a unique event. Families were at home, and parents had an unusual opportunity to observe students' online learning. This experience influenced parents' perceptions toward ICT use and TP, which they shared although they were not asked.

Table 3. COVID-19 Themes Summary

Perceptions and Attitudes Students' ICT Use		Perceptions and Attitudes Teachers' Techno-Pedagogy Use	
Support	Opposed	Support	Opposed
	Students had difficulties learning online	Teachers improved the use of TP	Teachers' TP was poor
	Students had poor learning habits	Parents appreciated teachers' efforts	Teachers' class management was poor

The same major themes of parents' opposing or supporting students' ICT and teachers' TP use were chosen. The themes are summarized in table 3.

Lily described that distance learning had negatively influenced parents' attitudes toward ICT use: "I believe every extra screen time is unnecessary today. I mean, I took a position that's totally related to the coronavirus, and it's not fair."

Parents' perceptions and attitudes were not supportive of students' ICT use.

3.3.1. COVID-19 – Parents Opposing Students' ICT Use

3.3.1.1. Students Had Difficulties Learning Online

Daniela mentioned students with attention disorders would struggle to learn online: "Distance learning in front of the screen was challenging. I think anyone with an attention disorder will struggle sitting in front of the screen and learning." Julia described her child's difficulties: "COVID-19 hit my child hard, disconnecting from the zoom, and not learning." Daniela shared her children's attitudes: "The only thing they complained about was Zoom lessons. It was hard for them that they preferred to go to school."

3.3.1.2. Students Had Poor Learning Habits

Students did not participate in lessons. Sharon said, "Students did not learn. I thought it was terrible." Laura referred to students' participation "During zoom lessons, students were offline and not present, or they were present but did not really participate." Sharon described habits of students participating in lessons "Students learned from bed. Not sure if it was successful."

3.3.2. COVID-19 – Parents Supporting Teachers TP Use

3.3.2.1. Teachers Improved the Use of TP

Carmen said teachers had to improve their pedagogy due to distance learning to learn TP methods: "Coronavirus forced them to do things (integrate ICT)."
Rachel: "I think the COVID-19 forced teachers to learn the Zoom thing, and a whole world was opened for them."

3.3.2.2. Parents Appreciated Teachers' Efforts

Laura understands teachers' effort: "I think it was hard to prepare lessons learning material." Rachel said teachers' transition to teaching online was fast: "Teachers had a hard time learning it and had to do it in a very short time." Sharon listened to interesting online history lessons and saw teachers interested in students' well-being: "Actually, lessons were interesting, and teachers were talking and asking all kinds of... How are you?"

3.3.3. COVID-19 – Parents Opposing Teachers TP Use

3.3.3.1. Teachers' TP Was Poor

Daniela pointed teachers did not understand they had to simplify online tasks: "There were all kinds of tasks. They were complicated." Laura indicated teachers did not think to imply basic pedagogy methods such as practice: "Teaching online was only theoretically, not practical."

3.3.3.2. Teachers' Class Management Was Poor

Laura said teachers did not discipline students when they taught online: "Everyone did what they wanted during lessons. This (i.e., distance learning) was not the usual school routine." Julia was frustrated teachers ignored students' emotional difficulties: "The education system lost students who cannot concentrate in front of a screen."

4. Conclusions

Parents were well acquainted with ICT and supported their adolescent children's ICT skills. Both students' use of ICT and teachers' TP use of interviews' analysis emerged two major themes: support and

oppose. Nevertheless, parents' answers were inconsistent as they understood the complexity of the issue and the various aspects.

4.1. Parents' Perceptions and Attitudes Regarding Student ICT Use

4.1.1. Parents Supporting Student ICT Use

Parents' perceptions and attitudes toward students' ICT use found four supporting subthemes:

   i.   ICT enhances progress

   ii.   ICT improves learning

  iii.   Making up with the reality

  iv.   Students' social life

All parents supported students by providing them with smartphones. In addition, all students had computers or iPad, or both. Nevertheless, when asked, only four parents said they support. This finding contradicts former studies indicating parents were more supportive (Keane & Keane, 2022; Tsuei & Hsu, 2019). Parents' support for students' ICT use reflected their perceptions of ICT skills as an essential orientation. Moreover, parents who chose to accept ICT use as the reality implied students' ICT tools, mainly smartphones, are required for information and communication. This contradiction between parents' actions and parents' attitudes is an example of complex perceptions taking into consideration reality and its consequences, as described in earlier studies (Tsuei & Hsu, 2019).

4.1.2. Parents Opposing Student ICT Use

Parents' perceptions and attitudes toward students' ICT use found two opposing subthemes:

   i.   Losing pedagogical skills

   ii.   Impairs students' physical and emotional well-being

Parents who opposed students' ICT use perceived acquiring pedagogical skills using ICT as shallow. Those parents missed the innovative pedagogical skills. Another perception was that ICT use is harmful to students' health and well-being. Lily even said ICT is addictive. These findings support Hammer et al. (2020) and Ben-Amram and Davidovitch (2021) study.

Parents were realistic, expressing the complex implications of using and not using ICT. On the one hand, students' natural ICT use is problematic. On the other hand, they understand ICT use is essential to students and has benefits.

4.2. Parents' Perceptions and Attitudes Regarding Teachers' TP Use

4.2.1. Parents Supporting Teachers' TP Use

Parents' perceptions and attitudes toward teachers' TP use found four supporting subthemes:

   i.   Teachers' control over ICT use

   ii.   ICT improves teaching

  iii.   Teacher-student relations

  iv.   Not all ICT are the same

Parents' attitudes toward teachers' TP use were more positive than toward students' ICT use. Interestingly, both questions refer to student ICT use. The difference between parents' attitudes results from parents' perceptions of teachers as supervisors of students' ICT use. That suggests parents respect teachers' authority and believe they have control over students' ICT use. Moreover, parents perceive computers as promoting learning in contrast to smartphones. These findings are compatible with Keane and Keane (2022) study about BYOD program parents' perceptions and Curum and Khedo (2020).

Parents were concerned not only about the quality of education but also about relationships between students and teachers that may support students' engagement. Surprisingly, when parents were asked about their perceptions of teachers' TP use, they referred to the ICT contribution to improving teachers teaching methods. Therefore, parents expressed concerns about the education quality of their adolescent children. Pratama and Firmansyah (2021) study contradicts these parents' perceptions and implies smartphones were an appropriate solution to online learning as they were affordable and had wireless access to the internet.

4.2.2. Parents Opposing Teachers' TP Use

Parents' perceptions and attitudes toward teachers' TP use found four opposing subthemes:
Oppose
i.   Denying liberty of choice
ii.   Moral economical
iii. Natural ICT use versus pedagogy use
iv.   Parent student relations

Parents' main reason to oppose teachers' TP use was the need to buy ICTs, iPads in particular. Parents from school BYOD opposed school policy, forcing them to purchase an iPad. Also, parents felt social pressure to purchase an iPad since they did not want their adolescent children would be exceptional. Another issue that affected parents opposed was the cost of ICT. Page Jeffery's (2022) study on BYOD school programs in Australia presents similar parents' attitudes. Hadad et al. (2020) added that opposing parents' reasons were economic, not pedagogical. Ben-Amram and Davidovitch (2021) emphasize the necessity of school-parents communication and maintaining policy transparency.

Interestingly, parents from both schools, including supportive parents, mentioned BYOD programs can be an economic burden to deprived families and may discriminate against their adolescent children. The rural periphery where the schools are located is characterized by small communities with socially solid caring values. Also, the economy is mainly agriculture-based. Therefore, there are families with low incomes. Parents' care for low-income families is related to the nature of the periphery.

Findings suggest ICT use naturally (i.e., for daily use) is insufficient for proper TP use. These findings have support in Hatlevik and Bjarno's (2021) study. Also, teachers' inappropriate use and misuse of TP led parents to believe TP does not contribute to improving students' learning. Most parents who addressed teachers' problematic TP use were from the BYOD school suggests the communication with parents is more intense than in the General school, and parents are more involved in policy making. Also, parents expected better results for their financial investment in ICT mirrors in Hammer et al. (2020) study.

Parents' perceptions about teachers' TP use revealed ICT use complexity. For example, Laura described the natural use of access to online information and asked why schools are needed? At the same time, she explained the pedagogical use of ICT as organizing and processing information for learning. In her words, she defined the teachers' role in the digital era. Another example was Rachel's statement, "teachers should teach the best way they can." In her words, schools' role is to facilitate knowledge that will prepare students for their future broader than ICT skills.

Another reason parents opposed TP use was that parents felt responsible for students learning. However, parents with low self-efficacy found it challenging to help with online homework. Therefore, they could not fulfill their role. This finding is supported by Lase et al. (2021) study about parents' role perceptions during COVID-19.

4.3. COVID-19 – Parents' Perceptions and Attitudes

Parents' perceptions and attitudes toward students' ICT use during COVID-19 were not supportive.

4.3.1. COVID-19 – Parents Opposing Teachers TP Use

Parents opposing emerged two subthemes:
i.   Students had difficulties learning online
ii.   Students had poor learning habits

Parents observed their adolescent children's learning habits. Some students did not learn due to a lack of ICT skills, technical problems, Self-learning efficacy, inappropriate assignments, or not having teachers' support. Other studies documented these problems (Lase et al., 2021).

Parents also described students' poor learning habits, such as learning from bed. In addition, students entered online lessons on Zoom online conference platform with closed cameras and were not engaging.

Parents opposing attitudes were a result of losing control over students learning. Moreover, students had to stay alone without friends in their homes closed for long periods, and parents gave up control over smartphone use. Understanding this is students' tool to maintain their social life and entertain themselves.

4.3.2. COVID-19 - Parents Supporting Teachers TP Use

Parents' perceptions and attitudes toward teachers' TP use found two supporting subthemes:
i.   Teachers improved the use of TP
ii.   Parents appreciated teachers' efforts

The parents noticed an improvement in the teachers' online lessons. Teachers implied rather quickly TP skills. Thus, students could continue learning. In addition, teachers' efforts to interact with students and motivate them gained parents' positive attitudes. These findings support former research (Ben-Amram & Davidovitch, 2021).

4.3.3. COVID-19 - Parents Opposing Teachers TP Use

Parents' perceptions and attitudes toward teachers' TP use found two opposing subthemes:

i.   Teachers' TP was poor

ii. Teachers' class management was poor

Parents indicated teachers had considerable technical problems. Ocal et al. (2021) indicated that TP skills and efficacy immensely contribute to distance learning success. Moreover, teachers implement the same teaching methods they used in class without adapting them to teaching online. Pratama and Firmansyah (2021) indicated students use smartphones as their primary ICT device. Therefore, lessons should be compatible with smartphones. In addition, teachers had problems reinforcing discipline in class. Ben-Amram and Davidovitch (2021) indicated parents needed to help discipline the students. Teachers were occupied learning TP that they forgot basic pedagogy such as discipline students needed to create the conditions needed for learning.

Parents' perceptions of online teaching during COVID-19 complexes were expressed. Parents recognized teachers' efforts to teach online and maintain a learning routine. With that, parents noticed that the online teaching quality was not good and worried about its implications on students' motivation.

4.4. Implications and Limitations

This study aimed to learn parents' perceptions and attitudes toward students' use of ICT and teachers' TP use in school. Parents of adolescent children studying in two rural schools in the northern periphery of Israel:

i.   General School

ii. School BYOD has a BYOD program in which students learn using personal iPads.

The current study has only examined parents' perceptions and attitudes toward teachers' TP use. The findings of this study describe a complex reality, whereas ICT use can bring progress to students who live on the periphery and contributes to their education. With that, parents want to preserve periphery advantages such as community social strength and slow pace.

The limited sample size of only 13 parents means that study findings need to be interpreted cautiously. What is now needed is a large-scale study of teachers' perceptions and attitudes toward TP use which will apply parents' insights.

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