

Parents' Involvement Inventory: Based on the WhatsApp Application (PIWI)

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Abstract

Today many parents and preschool teachers communicate through social media. The purpose of this pilot study is to develop a tool that can reflect the new reality of parental involvement. The Parents' Involvement WhatsApp Inventory (PIWI) was developed through a questionnaire given to 324 preschool teachers in different areas in Israel. The questionnaire incorporated three perspectives: cognitive, attitudinal (emotional) and informative. Five categories were identified and validated by factor analysis representing 41 out of the 55 items: satisfaction, safety network, media usage, limitations, and decision making. The main implications of the research are the contribution of this new tool to understand contemporary parental involvement and to provide an up-to-date tool to measure this involvement. Further research is required to validate the tool in different educational frameworks.

Keywords: parent involvement, WhatsApp, preschool education, Parents' Involvement WhatsApp Inventory (PIWI)

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Introduction

Communication between teachers and parents has always been an issue in the field of education, in particular, the communication between preschool teachers and parents. New technology has transformed the way we communicate. This change has also affected the types of communication channels open to parents and preschool teacher. Whereas in the past parents had one or two formal meetings a year with the teacher, any other interaction between these two formal meeting was through notes from the teacher to the parents and vice versa, which were sent via the children. Phone calls were made only in emergency situations. In contrast, the new communication options allow for almost daily communication and updates not limited to school hours.

Unlike with previous generations, most parents have smartphones and expect the option of immediate contact with the teacher. Today most people would not dream of being without their smartphones, and all the applications they find necessary for daily functioning, although they managed without these applications only a few years. As a result, the concepts of time and space have changed, as well as the teacher's ability to address parents as a group and as individuals. These changes require the development of a new tool to reexamine the changing function of the preschool teacher, and parameters such as the following: management, decision making, availability outside of working hours, mastering and implementing new technological skills, ethics and privacy, issues of overload, as well as asserting boundaries and limitations. The new social networking technology allows preschool teacher to communicate with parents either as a group or individually.

The most prevalent social network application in Israel today is WhatsApp, which originated as a messaging application for mobile phones. It is one of several messaging apps that have taken advantage of data plans on smartphones to provide a free alternative to texting. It allows users to send media and location-based messages to individuals or groups with a common denominator (for example, groups of teachers, parents, and families). The application is simple to download and operate, and only requires an internet connection and for all parties to have downloaded the application and to have joined the group in question.

How is this new technology being used by preschool teachers? According to preschool teachers, what are the advantages and disadvantages in using this app to communicate the

parents and to manage the preschool? In view of the above changes, in what ways has parental involvement changed?

Do these changes justify the development of a new measurement tool?

This study presents and validates the Parents' Involvement WhatsApp Inventory (PIWI), which is a questionnaire that examines the preschool teacher's use of the WhatsApp app to communicate with parents.

Literature Review

Parental involvement

Parental involvement can come in many forms and may be along various continua; for example, it could range from involvement to indifference. Epstein (2016) posits a normative approach that views parental involvement as positive.

Research has been demonstrated again and again that positive communication between school and home can increase students' motivation to learn, increase achievement, and well-being (Galindo & Sheldon, 2012). This is considered as even more important in early childhood education (Murray et al., 2015; Kim et al., 2013). There are different types of parental involvement. For example, when a parent helps a child to use scissors and developing motoric skills at home, this could also be considered to be within the realm of parental involvement. However, the nature and the quality of the relationships between school, parents, and children is imperative for positive outcomes. There are some disagreements among researchers as to which practices of parental involvement are important and how to facilitate participation by all families (Epstein, 2016, p. 3; Nzinga et al., 2009). The home and the school environment are seen as "overlapping spheres of influence." Partnerships between the parents and teachers are required to improve the wellbeing of the child (Epstein, 2016, p.16).

Getting families more involved in the transition to preschool has the potential to positively influence students' achievement, school experiences, and social and emotional development in school (El Nokali et al., 2010; Fan & Chen, 2001; Pianta & Walsh, 1996;

Taylor et al., 2004). A longitudinal analysis in Australia found that those parents who were generally more involved in educational activities with their children at home were also more involved in activities related to their child's education in preschool (Murray et al., 2015).

As noted by Patrikakou (2016), schools can maximize parent involvement and positively contribute to enhancing parent-child relationships, for example by using the school websites. This would allow parents to follow their child's progress and receive information about activities in the school. In addition, parents feel more involved when they are informed about what is going on in the school and in their own child's education (Zieger & Tan, 2012).

In many cases, parents are more involved in early childhood education because they have more direct contact with the teacher. Due to their children's young age parents usually drop off and pick up the child and therefore has daily contact with the preschool teacher. When an issue related to their child comes up, some parents are wary of calling the teacher after work hours; WhatsApp allows them to send the teacher a message, which is less intrusive than a phone call.

Another approach to parental involvement is based on overt and covert conflicts. The scale in this case ranges from caring to conflict. This political approach views the teacher and the parent as arguing about the same issue, namely, the child, but from different perspectives (Rosenblatt, & Peled, 2002). However, these two approaches are based on the classic approach to parental involvement and have not been affected by all the changes in technology—especially mobile technology—that have changed the way we communicate and have also affected parent involvement and the relationship between parents and children (Patrikakou, 2016).

The WhatsApp application

WhatsApp is a popular instant messaging application for cell phones that allows users to exchange messages in real time. It became an alternative to SMS messaging because it was offered as a free service at a time when SMS messaging had to be purchased in packages or paid for individually, which could be very costly. The application is

available in various devices, including laptops, smartphones, and tablets. It must be noted that this application is not used to the same extent all over the world. In Israel, as well as in other countries, this app is used extensively. In other countries other options, such as SMS messages, are more popular.

What made this app so valuable was the use of push notifications, which Apple launched in June 2009. Koum, the inventor of WhatsApp, managed to update the app so that each time the user changed their statuses, it would ping everyone in the user's network. WhatsApp was not the first cross platform messaging service, but it was unique in that it used users' phone numbers as logins, unlike apps such as Skype or Gtalk, which required users to sign up for accounts.

WhatsApp has several features that make it especially popular for connect with groups of people. Firstly, it allows users to communicate via various communication media such as text, pictures, audio, and video messages. In addition to the basic messages, WhatsApp users can create unlimited groups of up to 100 members, which allows them to conduct discussion groups. Another important feature of WhatsApp is that it allows offline messages. This means that all messages that are sent when the recipient's device is turned off or when it is in a no-service zone are automatically saved and reproduced when the device is turned on or when reception is restored (Rambe & Bere, 2012). Finally, WhatsApp utilizes phone numbers and is simply integrated with the users' contacts.

WhatsApp has grown to become the most popular social network in many countries, its use surpassing Facebook. In a study with a large sample ($N = 2,418$ WhatsApp users), Montag and colleagues (2015) recorded WhatsApp behavior over a four-week period. The results showed that the use of WhatsApp accounted for 19.83% (= 32.11 min) of all smartphone behavior (cf. Facebook only 9.38% = 15.19 min). The mean of overall daily smartphone usage was 161.95 minutes. Females used WhatsApp for significantly longer periods of time than males, and younger age was associated with longer duration of WhatsApp use.

People of all generations now use smartphone, especially since this app allows them to keep in touch with family and friends (Montag et al., 2015). While WhatsApp is mainly used as a text-messaging service in terms of transmitted flows (more than 93%), video sharing accounts for approximately 36% of the volume exchanged in uplink and downlink,

and photo-sharing/audio-messaging accounts for approximately 38%.

A message sent on a WhatsApp group is seen almost immediately by most group members and response time is very fast compared to other forms of social media (Fiadino et al., 2015). In contrast, communication between the preschool teacher and the parents has traditionally been via letters and notes given to the children— some of which never reached their destination—and occasional phone calls.

The use of technology to communication with parents in the preschool

Some preschool teachers in Israel use their Internet sites to post information for parents. In addition, although emailing and SMS messages are also used, but many preschool teachers now use the WhatsApp application to communicate individually or with all the parents.

When the current study was conducted, WhatsApp's broadcasting feature was not yet available. This feature allows the teacher or group administrator to send out a notice to everyone but replies only reach the administrator and not the other members of the group. When this study was conducted, all replies reached all group members. The lack of the broadcasting feature can be daunting for the unseasoned teacher and may threaten their professional status since they may feel intimidated by parents forming pressure groups (Erdreich, 2021). This especially pertains to preschool parent groups on WhatsApp that do not include the preschool teacher. Here the parents discuss what is going on in the preschool and often what they think of the preschool teacher!

WhatsApp groups evoke ambivalence in the preschool teacher's managerial practices. Specifically, instrumental ambivalence addresses pedagogical decisions; substantive ambivalence pertains to the need to engage in public relations; and critical ambivalence concerns the professional discourse between parents and the preschool teachers regarding accountability (Davidson & Turin, 2021).

Gong & Wallace (2012) report that students described several distinctive capabilities regarding the use of mobile technology in education and some of their findings are applicable to the use of WhatsApp between a preschool teacher and parents. These include improved communication with the teacher, convenience, and diffusion of the information

transmitted. Rambe and Bere (2012) compared the use of the WhatsApp social network with the use of a learning management system (LMS). Students preferred WhatsApp because it is free and allows ready access and multitasking. Rambe, Chipunza and Bere (2013) demonstrate some educational advantages to using WhatsApp. Their results show how the app can be used for role play in problem solving and advising peers on complex academic matters. It also allowed increased access to educational resources regardless of distance.

The above studies clearly indicate that mobile technology is an effective aid that teachers can use to improve the level of interaction among students. In the case of preschool teachers, who were the subjects of the current study, WhatsApp can be used effectively to communicate with parents. instrumental intimacy' with teachers – an emotional connection for the purpose of the child's education. WhatsApp communication between parents and the preschool teacher facilitates instrumental intimacy, that is, an emotional connection between the parents and the teacher for the specific purpose of optimizing the child's education (Erdreich, 2020). However, online interactions lack features that are crucial for human relations, such as eye contact, body language, and voice (Subrahmanyam & Greenfield, 2008). Some researchers have expressed doubts regarding the influence of integrating technology in the interaction and involvement of students. Other research points out the limitation of the small screen on cell phone devices (Liu, 2009)

Below is a list of the perceived advantages and disadvantages of using the WhatsApp application for communication between parents and preschool teachers. These points relate to cognitive, attitudinal, and informative aspects of using the tool (Addi-Raccah & Yemini, 2018; Davidson & Turin, 2021; Posey-Maddox & Haley-Lock, 2020; Urien et al., 2019).

The advantages of using WhatsApp in the preschool to connect with parents are as follows:

- Most prevalent messaging system and social network
- Most parents (95%) have the app
- Messages received immediately
- One message for all parents
- Can be used for announcements
- Useful for sharing pictures and videos

- Allows immediate content in emergencies
- From the parents' point of view, increased accessibility of the preschool teacher
- Increased parental involvement and knowledge of what goes on in the preschool
- Simplicity of use allows accessibility for participation of parents with limited computer skills

The disadvantages of using WhatsApp in the preschool to connect with parents are as follows:

- Could exacerbate or ignite conflicts
- Irrelevant messaging
- A waste of time
- Results in the overuse of smartphones
- Teacher's constant exposure to parents' messages
- Lack of direct access to parents without smart phones and the need for alternative channels (Patrikakou, 2016)

Method

Population and sample

The participants in the study were 324 preschool teachers who worked with children aged 3-6. The participants had voluntarily responded to the questionnaire that had been sent to WhatsApp groups of preschool teachers all over the country. The demographics of the sample are presented in Table 1 below.

The range of the ages of the teachers in the sample was 24-60. The average age of the teachers in the sample was 41.8 and the median age was 42. The standard deviation (SD) for the age of the teachers is 9.2. The teachers' years of work experience in the field ranged between 0–38 years. The median for years of teaching experience was 15; the average was 15.6; and the SD was 8.9.

Table 1. *Demographics*

Variable	N	Percentage		
Total	324	100%		
Gender:				
Female	320	98.5%		
Male	4	1.5 %		
Religious Affiliation:				
Jewish secular	237	73.15%		
Jewish religious	58	18 %		
Arab (Moslem, Christian & Druze)	29	8.95%		
Location:				
Towns	224	71.7%		
Rural areas	102	18.3%		
Academic Qualifications				
B.Ed	191	59.8.%		
M.Ed	105	31.4 %		
other	28	8.8 %		
	Range	Average	Median	SD
Age:	24-60	41.9	42	9.2
Teaching experience in years	0-38	15	15.6	8.9

The sample is representative of preschool teachers within the Israeli educational system.

Most of the teachers in the sample had a BA or MA degree in early childhood education. Only four male preschool teachers responded to the questionnaire, but this is reflective of the ratio of male to female preschool teachers in Israel. In Israel, most preschools are not part of an elementary school and constitute separate entities. Most of the preschool teachers served as the main teacher in the preschool and as manager. The remaining teachers served as teaching assistants in preschools.

Procedures

The questionnaires were distributed through emails and social network programs. All the explanations were included within the questionnaire. The responses were all voluntary and the participants did not receive payment. The questionnaire allowed for comments and suggestions. A few teachers used this feature and added comments.

Ethics

Precautions were taken to ensure that the questionnaire was anonymous and information to this extent appeared on the questionnaire. The participants received clarification that the data supplied would only be used for this specific research project.

Research tool

The structure of the PIWI tool contains both the traditional and new features of parental involvement, which can be classified according to the following areas:

- A means to deliver basic information
- Type of content permitted between the preschool teacher and the parents (e.g., pictures, clips, and pictures of other children)
- Real-time communication
- Time boundaries for communication
- Parents' expectations as opposed to the preschool teacher's ability to meet the parents' expectations.
- Convenience and satisfaction using WhatsApp
- The teacher's authority and threats to this authority.
- The types of decisions made by the preschool teacher
- The degree of the preschool teacher's comfort in using the WhatsApp tool
- Overload of interactions between parents and the preschool teacher
- Ethical issues

The PIWI tool was constructed based on two assumptions—firstly, that parental involvement is completely different to what it was a decade ago, and secondly, that the type and content of parental involvement has changed. Parental involvement is now characterized by many new features that did not exist in the classic model of parental involvement. Because the WhatsApp application is used for communication between preschool teachers and parents, the PIWI tool analyzing this interaction needs to also cover

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all the features offered by WhatsApp. The PIWI tool includes three dimensions, namely, the cognitive aspect, the attitudinal aspect, and the informative aspect from the perspective of the preschool teacher. The following are examples of items from the questionnaire for each of the three dimensions:

Table 1. *The PIWI tool*

		Component						
		1	2	3	4	5	6	7
1. Satisfaction								
(att)	Q37 Having used the Whatsapp application for a period of time, I can say that I'm pleased with it	87	09	- 03	04	02	06	11
(cog)	Q47 After using What'sApp, I think this media really helps to connect with parents	83	02	- 07	0	02	06	15
(att)	Q9 I believe that using WhatsApp improves the communication with the parents	81	- 08	- 14	15	0	12	06
(att)	Q21 I feel very comfortable using Whatsapp	79	20	- 05	06	- 04	08	- 03
(cog)	Q15 I use What'sApp because it's easy to use	76	26	01	17	- 02	- 02	- 05
(cog)	Q36 think that using the What'sApp media helps me manage my kindergarten more efficiently	75	- 09	- 07	17	07	10	09
(cog)	q39 I intend to continue using Whatsapp next year	75	20	- 02	- 09	- 06	- 07	19
(cog)	Q33 I take advantage of Whatsapp to make requests and give instructions connected to the kindergarten	73	16	04	0	14	05	07
(cog)	Q16 I use the WhatsApp application because the tool is also user friendly for the parents	73	23	04	12	- 02	03	- 06
(cog)	q10 I think the parents are happy with using this media for communication with the kindergarten teacher	73	- 03	- 06	0	04	23	05
(cog)	Q4 I make considerable use of the option of sending text messages to the parents	70	05	19	10	17	03	- 05
(cog)	Q20 I use Whatsapp because of the speed of the communication	69	29	04	20	06	0	- 05
(cog)	Q17 Using Whatsapp saves considerable working time	66	08	- 02	24	06	- 05	- 07
(att)	Q46 After using Whatsapp I think that my private space has been damaged	51	- 10	- 01	37	10	32	- 10
(inf)	Q6 Parents complain that the Whatsapp is a nuisance	- 45	- 03	03	41	18	- 04	12
(cog)	Q50 after using whatsapp I considered closing the group	- 44	05	- 06	31	25	16	- 24
(att)	Q18 Using Whatsapp is time consuming at the expense of working with the children in the kindergarten	- 35	- 16	- 08	24	11	18	26
2. Safety network								
(cog)	Q24 I refrain from taking part in discussions between the parent	- 04	68	17	04	- 07	05	11
(cog)	Q25 I refrain from taking a stand in arguments between parents	02	65	16	14	09	- 02	0
(cog)	Q22 When there is a problematic message , I deal with it in a private communication	20	62	- 04	02	08	18	01
(cog)	Q32 When there is a need to discuss a personal issue I request turning immediately to a private channel of communication (private whatsapp, telephone or email)	35	61	03	10	09	18	16
(cog)	Q23 I prefer to check everything in depth before replying to the group whatsapp	31	60	05	08	02	20	18
(cog)	Q26 I don't encourage parents to "chat" on the group whatsapp about topics unrelated to the kindergarten	10	58	09	05	29	- 12	- 22
(cog)	Q29 I spend considerable time composing the content of my messages	13	43	- 09	13	10	32	21
3. Media usage								
(cog)	Q2 My whatsapp group only using text.	03	02	70	0	15	08	23
(cog)	Q3 I make considerable use of the ability to send pictures of the children to their parents	40	07	- 70	05	11	- 08	- 08
(cog)	Q40 In the future I will only use whatsapp to send messages to parents	19	10	69	06	12	13	- 04
(cog)	Q5 I make considerable use of the function to send video clips to the parents	20	- 02	- 65	07	20	01	06
(cog)	Q28 My connection with the parents on whatsapp is very formal	17	29	47	12	16	04	22
(cog)	Q8 Most of my messages to the parents are for emergency use only	- 25	10	41	26	27	- 05	07
(cog)	Q7 I make considerable use of sending voice messages to parents	12	- 12	- 32	23	08	02	18

- The cognitive aspect: “I avoid taking sides during arguments between parents.”
- An attitudinal item: “I believe that the use of WhatsApp improves the communication with the parents.”
- An informative item: “Parents that don’t have the WhatsApp application take responsibility to update themselves.”

The PIWI questionnaire contained 56 items, which included the content and features mentioned above. The items were sent to expert reviewers in the field of parental involvement. As a result, some items were eliminated, others were added, and some were changed. A second review was undertaken to obtain the additional perspective of preschool teachers in the field. This resulted in some items being modified and minor changes made. The final questionnaire contained 52 items (see Table 2).

Validation and reliability of the measurement

Reliability was performed with the procedure of *reliability if item deleted*. In accordance with these results, certain items were taken out of the questionnaire. To validate the questionnaire structure, a validity factor analysis was performed. Seven factors that included all the items were found. Three of these factors were removed because the correlation of Alpha Cronbach reliability was less than .5

The first factor found was named *satisfaction*. This factor contains 17 items that represent satisfaction with using the social media WhatsApp application. Four items within this factor were negative items. Reliability of this factor was Alpha Cronbach = .927. Examples in this section are Q21 (*I feel very comfortable using WhatsApp.*) and Q36 (*I think that using WhatsApp helps me manage my preschool more efficiently.*). This factor was the strongest and most dominant among all the other factors and contained the largest number of items (17) in comparison to the other factors. This factor contains most of the emotional items in the questionnaire together with cognitive items.

The second factor related to items connected to the safety network and restrictions a preschool teacher devises to protect herself in her relationships with the parents. This factor contained seven items. Reliability was Alpha Cronbach = .76. Examples of this factor

include Q24 (*I avoid taking part in discussions on WhatsApp between the parents,*) and Q22 (*When there is a problematic post, I deal with it directly with the parent.*)

The third factor yielding an Alpha Cronbach's score of .725 were items connected to media usage. There were six items in this factor, two of which were negative, including Q.2 (*In our WhatsApp group we only communicate with text messages.*).

The fourth factor involved items connected with the preschool teacher's responsibility and status within the WhatsApp group. There were six items within this factor. Two of the items scored less on reliability, and when taken out, alpha Cronbach was .593. This was still considered too low to use for reliability. An example of this factor is Q.35 (*In the group WhatsApp I take less risks than I would in a private WhatsApp communication.*). The fifth factor concerns the boundaries of using the group WhatsApp. It contains four items one of which was negative with alpha Cronbach = .671. Examples in this area include Q11 (*I don't restrict the times when parents can write in the WhatsApp group*).

The sixth factor entitled privacy includes six items—one negative—which are connected to ensuring confidentiality and the welfare of the children, for example Q42 (*I am not willing to discuss on the Group WhatsApp issues pertaining to specific children; for example, mentioning children by name, mentioning health or behavioral issues of specific children.*). The alpha Cronbach for this factor was .455 and was too low to use for reliability. Accountability was the seventh factor, including Q50 (*I take responsibility to update the parents who do not have the WhatsApp application.*) There were five items in the section, including one negative item. This item was taken out of the factor, as the reliability was too weak. The alpha Cronbach for factor seven is .389.

In the factor analysis received, there was no category that specifically related to the area of decision making, which was deemed to be an important predictor for parental involvement. Two items in the questionnaire pertained to decision making, namely, Q31 (*I answer using WhatsApp also in instances that require complex decision making.*) and Q30 (*I prefer to use WhatsApp only in instances what simple decisions need to be made.*). The two items on decision making yielded an alpha Cronbach of .714. This became our fifth valid category.

The next step was to create the new variables and analyze correlations among the remaining five valid categories (satisfaction, boundaries, safety network, media type and

decision making). See Table 2.

The results show that there was a correlation in all cases except for the connection between “decision making” and “limiting media usage”. The only negative correlation was found between the “satisfaction” and “limiting media usage” factor. The purpose of this procedure was to ensure that each of these five variables are independent from each other. The results in Table 2 show that this is the case.

Table 2. *Intercorrelation and Reliability of Scale Scores*

		2	3	4	5	Alpha
1	Satisfaction	.239 ^{***}	.328 ^{***}	-.139 [*]	.347 ^{***}	.93
2	Boundaries		.320 ^{***}	.247 ^{***}	.155 ^{***}	.67
3	Safety network			.210 ^{***}	.241 ^{***}	.76
4	Media type of usage				.004	.73
5	Decision making					.71

*p<.05 **p<.03 ***p<.01

The purpose of these new variables was to bring the added dimension of the communication between preschool teachers and the parents to see whether there is a correlation between the beliefs/attitudes, rationale, and the informative aspect of the relationship.

The findings show that there are positive correlations between the three variables within the range of $R = .404$ to $R = .607$. This means that the correlation between the three variables regarding the level of the coefficient shows that the three variables are dependent and interdependent respectively. This means that these variables can be used as dependent or independent predictors for other variables related to the area of parental involvement; for example, conflict or shared type of involvement (Rosenblatt & Peled, 2002).

Discussion

The purpose of this study was to design a new tool that could examine the interactions between parents and educational institutions today regarding boundaries of time and space, online communication, and the vast quantity of information communicated.

Traditional explanations of parent involvement do not take the advances of the computer

age into account in analyzing the communications between the parent and the educational system (Epstein, 2016; Galindo & Sheldon 2012; Murray et al., 2015) in the computer age. At a time when social networks form the basis for social, work, and educational interactions, parental involvement has changed, and the need has arisen to reanalyze the area of parent involvement taking the technological tools and applications that exist and are used today into consideration. In this study, the PIWI research tool was developed, taking the current characteristics of parent involvement into account. The literature includes a wide range of research that divides parent involvement in early childhood education according to three main perspectives, namely, the cognitive, the attitudinal (emotional) and the informative.

The medium chosen for this research is the social network WhatsApp, which is the most widely used social network in Israel and is also the preferred form of communication between schoolteachers, preschool teachers, and parents. This study examines parental involvement in preschools under the assumption that the parents' interaction with teachers would be more intense for a child just entering the educational system than for older children.

After constructing the original 56-item PIWI questionnaire, checking for validity with colleagues, and carrying out an exploratory factor analysis, five dimensions were found. These dimensions included 41 questions that show the characteristics of the interaction between teachers and parents for the three perspectives noted above.

The dimensions included in the final questionnaire were the following:

- Satisfaction with using the WhatsApp tool as a tool for communication between the preschool teacher and the parents
- A safety network for the preschool teachers (i.e., the teachers' need to protect themselves in the interaction with the parent concerning ethical and legal issues)
- App usage - the use of WhatsApp by the preschool teacher; for example, limiting hours for sending messages
- The preschool teacher's responsibility to provide rules and restrictions for using the app, for example, regarding the use of pictures and issues of privacy.
- Decision making – represents the decisions made by the preschool teacher when facing dilemmas

The findings from the study validate the structure of the questionnaire and demonstrate the current form of parental involvement. It should be noted that the results presented here are initial results that need to be replicated.

Implications of the study

- This PIWI questionnaire can contribute to a better understanding of additional variables that characterize the communication between parents and educational institutions (including elementary and junior high schools), such as school effectiveness and types of parental involvement, including cooperative involvement as opposed to conflictual involvement, the ethical climate in the school, and educational leadership (Rosenblatt & Peled, 2002).
- The proposed PIWI tool allows for the examination and the improvement of the communication process between parents and educational institutions using modern technology.
- The study provides a contemporary research tool that is regularly updated to map the relationships between the educational institution and the community.
- According to the findings, both parents and preschool teachers found the use of the application for communication to be both convenient and effective. The satisfaction index was found to be dominant and consistent for all teachers.
- The WhatsApp application is not dependent on time and space and allows communication anytime and anywhere. These features and their implications are incorporated into the proposed PIWI tool.
- The use of the PIWI tool brings various ethical issues to the forefront, for example, the implications of publishing children's photos and videos on a public platform.

Recommendations for future research

As mentioned above, the PIWI tool based on social networking has broad research potential. The tool needs to be tried out and applied in different educational settings to examine parental involvement and the communication between parents and educational

institutions. Future research could expand knowledge about the professional responsibility of preschool teachers, as reflected in communication with parents on WhatsApp. In addition, it would also be of interest to examine the use of the app in educational settings with diverse populations that benefit from the parents' involvement, such as special education. A future study would also devise a questionnaire to examine the parents' perspective and their views on how to improve the interaction between parents and preschool teachers. Such a questionnaire should also establish what the parents' needs are in terms of the extent of communication they expect to have with preschool teacher and the extent to which they feel they can have a positive impact on their child's education.

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