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Parental homework support and technostress in the family context

Apoyo parental en las tareas escolares y tecnoestrés en el contexto familiar

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Abstract

Participation of parents in their elementary school children's homework is essential for several reasons: it fosters a positive attitude towards learning, helps to establish routines of study and responsibility, allows to know the progress and difficulties of children and also strengthens the relationship between parents and children. The objective of this research was to describe the participation of parents in their children's homework, as well as their level of technostress, through a quantitative, non-experimental, cross-sectional and descriptive study with 107 fathers and mothers from the administrative area of a Mexican public higher education institution. As results, a mean of 3.51 points (always) was obtained in the variable support for their children's autonomy; 2.54 points (almost always) in cognitive stimulation; and 2.72 points in technostress. In conclusion, parental involvement in the studies of elementary school children is crucial for their academic success and integral development; the level of stress related to the use of educational technology in homework may vary according to the individual and the circumstances.

Parental involvement, Homework, Techno-stress

Resumen

La participación de los padres y madres de familia en las tareas escolares de sus hijos de educación primaria es esencial por varias razones: fomenta una actitud positiva hacia el aprendizaje, ayuda a establecer rutinas de estudio y responsabilidad, permite conocer el progreso y las dificultades de los niños y también fortalece la relación entre padres e hijos. Esta investigación tuvo como objetivo describir la participación de padres de familia en las tareas escolares de sus hijos, además de su nivel de tecnoestrés, a través de un estudio cuantitativo, no experimental, transveral y descriptivo con 107 papás y mamás del área administrativa de una institución de educación superior pública mexicana. Como resultados, se obtuvo una media de 3.51 puntos (siempre) en la variable apoyo a la autonomía de sus hijos; 2.54 puntos (casi siempre) en estimulación cognitiva; y 2.72 puntos en tecnoestrés. En conclusión, la participación parental en los estudios de las y los hijos de primaria es crucial para su éxito académico y desarrollo integral; el nivel de estrés relacionado con el uso de la tecnología educativa en las tareas puede variar según la persona y las circunstancias.

Participación parental, Tareas escolares, Tecnoestrés

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1. Introduction

In recent decades, the importance of parents' active involvement in their children's education has been recognised as a determining factor in their academic success and personal development. Parents play a crucial role in supporting and motivating children in their learning process, and their involvement in schoolwork has become a fundamental aspect of family dynamics. However, this involvement is not without its challenges, especially in the digital age in which we find ourselves. In this context, it is crucial to investigate how parents engage in their children's homework and how the use of technology impacts their experience.

The present study focuses on examining parents' involvement in their children's schoolwork and the impact of the technostress they experience when providing academic support in the digital age. The rapid advancement of technology has transformed the educational landscape, introducing new digital tools and platforms that aim to improve the teaching-learning process. However, this transition to digital education is not without its challenges, and parents face particular challenges when trying to help their children with tasks involving technology. It is therefore essential to understand how technostress influences parental involvement in homework and what strategies can be implemented to overcome these obstacles and foster effective collaboration. Furthermore, despite technological advances, there is a digital divide that affects different socio-economic groups and can influence parents' ability to adequately support their children in educational settings. Access to electronic devices, internet connectivity and digital resources can vary significantly from household to household, posing additional challenges in terms of equal educational opportunities. It is therefore necessary to explore parental involvement and what measures can be implemented to ensure equitable access to digital tools.

2. Problem statement

Carro et al. (2014), have identified low parental expectations together with low parental educational attainment, large number of siblings and family disruption, as family-dominant factors that impact on educational exclusion, particularly on school dropout.

Mayorquin et al. (2019), agree that parental involvement in their children's school activities results in gains in academic achievement; over time parental involvement has become a national priority and schools have been encouraged to make changes in their policies.

Tirado-Hurtado (2020) mentions that worries are a main reason for stress in parents in times of pandemic (up to 70%) along with manifestations of impatience (47%), fear (45%) and irritability (45%), resulting in parents feeling more stress since the beginning of the COVID-19 pandemic.

For this reason, this research aims to find out parents' level of technostress and their involvement in their children's academic activities in order to answer the question: what is the parents' involvement in their children's studies and their level of technostress?

3. Objectives

To characterise the different forms of support parents give to their children in their school work.

To identify the level of stress related to parents' use of educational technology.

4. Type of study

The present research is framed as a quantitative methodological study, which implies that it is based on the analysis of numerical data and the use of statistical techniques to obtain conclusions and generalisations. This study follows a non-experimental design, which means that no variables are manipulated and no control groups are established. Furthermore, this study adopts a cross-sectional approach, also known as trans-sectional, which implies that data are collected at a single point in time, without follow-up over time. Finally, the scope of this research is descriptive, which implies that its main objective is to describe and characterise particular phenomena or situations, without seeking causal explanations or establishing causal relationships (Hernández-Sampieri & Mendoza-Torres, 2018).

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5. Participants

The population consisted of workers in the administrative area of a Mexican public university who had their children studying in primary school.

Sample

Non-probabilistic convenience and snowball sampling was used; the sample size (n=96) was calculated based on a confidence level of 95%, a margin of error of 10% and using Wimmer's (2018) sample size calculator. The participants at the close of the survey were 107 fathers and mothers.

6. Instruments

A search for scales previously used for each of the variables covered by this research was carried out and each of them is described below.

Support for autonomy

The scale "Support for autonomy" developed by Gonida and Cortina (2014), adapted by Valdés, Grijalva and Parra (2020) was used. It measures parental involvement in terms of providing facilitating cues, encouraging children to pay attention in case of making mistakes or facing difficulties, asking them to reflect on the task and its solution, as well as promoting self-regulation practices (Gonida & Cortina, 2014). The survey consists of a total of seven items, for example: "when my child makes a mistake in his/her homework, I encourage him/her to review and correct it" (α = 0.70). A five-point Likert-type response format ranging from "0 = never" to "4 = always" was used.

Cognitive stimulation

The "Cognitive stimulation" scale developed by Gonida and Cortina (2014), adapted by Valdés, Grijalva and Parra (2020), was used. It measures parental involvement in actions that seek to empower their children. These actions include guiding children to look for additional homework-related information in other books or on the Internet, providing additional information related to schoolwork.

And assigning additional exercises similar to schoolwork to practice (Gonida & Cortina, 2014). It consists of a total of eight items, e.g., "I advise my child to review his/her school material (notes, books, guides, etc.) to solve homework assignments correctly" (α = 0.79). A five-point Likert-type response format ranging from "0 = never" to "4 = always" was used.

Technostress

The "Technostress" scale of Tarafdar et al. (2007), adapted from Ochoa (2023), was used. It measures the level of stress experienced by parents due to the use of information and communication technologies to support their children's schoolwork (Brod, 1984; Weil & Rosen, 1997). The survey consists of a total of five items, for example: "I often find it too complex to understand and use technology" (α = 0.64). A five-point Likert-type response format ranging from "0 = Strongly Disagree" to "4 = Strongly Agree" was used.

7. Results

Characterisation of forms of homework support
Descriptive statistics (mean and standard deviation), as well as skewness (-2 to +2) and kurtosis (-7 to +7) indices were used to determine normality (Byrne, 2010; Hair et al., 2010).

Autonomy support

Seven items were used to measure parental involvement in terms of providing facilitating cues, encouraging children to pay attention in case of making mistakes or facing difficulties, inviting them to reflect on the task and its solutions, as well as promoting self-regulatory practices. The average obtained on this scale was 3.51 points, which in the scale used means "always".

As can be seen in table #1, the item with the highest mean was item 2 (I explain a school task to my child when it is difficult for him/her) which obtained a mean of 3.80 points (always); on the other hand, item 5 (when my child solves a task wrongly, I ask him/her to describe how he/she solved it to make it easier for him/her to understand his/her mistake) was the item with the lowest mean of the scale with a mean of 3.08 points (almost always).

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A normal-like distribution is observed for all variables except for item 7.

	Ítem	*M*	*DE*	Mín	Máx	Asimetría	Curtosis
1	When my child makes a mistake on homework, I encourage him/her to check and correct it.	3.67	.53	2	4	-1.30	.73
2	I explain a homework assignment to my child when he/she finds it difficult.	3.80	.49	2	4	-2.43	5.24
3	When my child does not know how to solve a homework assignment, I prompt him/her to identify the known elements and build on them to find the solution.	3.49	.65	1	4	-1.10	1.05
4	When my child does not understand how to solve a task, I solve an example first in order to make it easier for him/her to understand.	3.30	.76	1	4	-.70	-.51
5	When my child solves a task wrongly, I ask him/her to describe how he/she solved the task in order to make it easier for him/her to understand his/her mistake.	3.08	.95	0	4	-.82	.04
6	I guide my child on how to do tasks that are difficult for him/her.	3.57	.67	2	4	-1.28	.37
7	When my child cannot solve a task, I encourage him/her to read the instructions carefully.	3.66	.72	0	4	-2.69	8.20

Table 1 Mean, standard deviation, minimum, maximum, skewness and kurtosis for the autonomy support scale

Cognitive stimulation

Eight items were used to measure parental involvement in actions aimed at empowering their children. These actions include guiding children to look for additional homework-related information in other books or on the Internet, providing additional information related to school work, and assigning additional exercises similar to school work for practice. The average score obtained on this scale was 2.54 points, which on the scale used means "almost always".

As can be seen in table #2, the item with the highest mean was item 8 (I advise my child to review his/her school material, notes, books, guides, among others, to solve homework correctly) which obtained a mean of 3.37 points (almost always); on the other hand, item 12 (I assign my child additional homework to that assigned by the teacher) was the item with the lowest mean of the scale with a mean of 1.61 points (sometimes). A normal-like distribution is observed for all variables.

	Ítem	*M*	*DE*	Mín	Máx	Asimetría	Curtosis
8	I advise my child to check his/her school material (notes, books, guides, etc.) in order to solve homework assignments correctly.	3.37	.91	0	4	-1.48	1.70
9	I use the computer with my child to complete homework assignments.	2.41	1.10	0	4	-.29	-.46
10	I guide my child in searching for information on the Internet to get help for his/her homework.	2.76	1.09	0	4	-.57	-.29
11	I provide my child with additional homework-like exercises for practice.	2.31	1.12	0	4	-.20	-.42
12	I assign my child additional homework to that given by the teacher.	1.61	1.11	0	4	.55	-.07
13	I show my child books to improve understanding of the homework.	1.99	1.10	0	4	.06	-.22
14	I discuss homework issues with my child in order to improve his/her learning.	2.93	.79	1	4	-.33	-.35
15	I suggest to my child to look for information (books, Internet, etc.) in order to get help for his/her homework.	2.94	1.06	0	4	-.97	.71

Table 2 Mean, standard deviation, minimum, maximum, skewness and kurtosis of the cognitive stimulation scale

Identifying the level of stress related to the use of educational technology

Four items were used to measure the level of stress experienced by parents due to the use of information and communication technologies to support their children's homework. The average obtained on this scale was 2.72 points, which on the scale used means "agree".

As can be seen in table #3, the item with the highest mean was item 16 (I know enough about technology to help my children with their homework) which obtained a mean of 3.31 points (agree); on the other hand, item 19 (I think other parents know more about the use of technology than I do) was the item with the lowest mean of the scale with a mean of 1.61 points (neither agree nor disagree). A distribution similar to the normal distribution is observed for all variables.

	Ítem	*M*	*DE*	Mín	Máx	Asimetría	Curtosis
16	I know enough about technology to help my children with their homework.	3.31	.70	1	4	-.85	.71
17	I don't need a lot of time to understand how to use some of the technology my children need for their homework.	2.97	.93	0	4	-.94	.56
18	It is easy for me to find time to improve my technology skills to help my children.	2.67	1.06	0	4	-.43	-.67
19	I think other mums and dads know more about using technology than I do.	1.83	1.06	0	4	.12	-.27
20	I often find it too complex to understand and use technology.	2.83	1.03	0	4	-.85	.21

Table 3 Mean, standard deviation, minimum, maximum, skewness and kurtosis of the technostress scale

The summary of the means, standard deviation, minimum and maximum values, skewness and kurtosis of the 3 variables studied in this research can be seen in Table 4.

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	Variable	*M*	*DE*	Mín	Máx	Asimetría	Curtosis
1	Support for autonomy	3.51	.42	2.00	4.00	-.81	.51
2	Cognitive stimulation	2.54	.66	.50	4.00	-.31	.95
3	Technostress	2.72	.62	1.20	4.00	.05	-.31

Table 4 Mean, standard deviation, minimum, maximum, skewness and kurtosis of the scales of variables

8. Conclusions

Parental involvement in their children's studies, in some parents are very involved in their children's education, while others may have more limited involvement. Parental involvement in the studies of primary school children is crucial for their academic success and comprehensive development, i.e. it is essential to support and guide children during their early years of education. Education is defined as "a permanent process, which covers the different stages of people's lives and aims to achieve their spiritual, ethical, moral, affective, intellectual, artistic and physical development, through the transmission and cultivation of values, knowledge and skills" (Ministry of Education, 2009).

In the findings of this research, it was determined that providing children with facilitating clues and giving them stimuli helps them to pay attention when they make mistakes and face difficulties, and it was also taken into account how they reflect on the solutions to the tasks, as well as solving them in a particular way; another of the findings found in the research is that when children make mistakes in a task, their parents almost always ask them to explain the task to them.

On the other hand, the level of stress related to the use of educational technology in homework can vary according to the individual and the specific circumstances. Some people may experience a high level of stress due to various factors, such as lack of experience with technology, pressure to adapt quickly to new tools, or concern about lack of equitable access to technology; in the present research findings, parents commented that they do understand technology, so stress may be lower than those who have no knowledge of technologies.

Parental involvement can influence different aspects of technology use support; some parents can help their children navigate and use educational technology.

If parents are familiar with the tools and applications used in their children's education, they can provide technical support and help them overcome potential obstacles. This can reduce students' level of technostress by knowing that they have someone who can help them with technology.

Parents, students and individual teachers have different views on the need to set homework (Valle et al., 2016). Doing this type of extracurricular homework every day helps to create habits of work, self-improvement and personal effort, teaches students to be responsible and develop discipline, connects parents to their children's education, reinforces and contextualises learning in the classroom, stimulates children's reasoning and memory and fosters autonomy and makes it possible for the student to learn to work on their own and therefore develop the ability to plan and search for information on their own. In addition, many parents do not have the education to provide adequate supervision.

Each child is unique and may have different needs and learning styles. Tailoring participation to the individual needs of children is important to provide them with the necessary support in their academic journey, the present study highlighted that giving them homework support creates positive effects on their academic performance.

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Annex 1

Instrument

ITSON moms/dads' involvement in their children's homework, technostress and technological infrastructure at home

1. Who is answering this survey?
I am the mom
I am the father

2. Year your son/daughter is in
First
Second
Third
Fourth grade
Fifth grade
Sixth grade

3. Age of your son/daughter

4. Sex of your son/daughter
Female
Male

5. Does my son/daughter have a study or work area to do his/her homework at home?
Yes
No

6. My son/daughter has an assigned schedule for homework assignments
Yes
No

7. Mother's highest level of education
Primary
High school
High school
Bachelor's degree
Master's degree
Doctorate

8. Father's highest level of education
Elementary school
High school
High school
Bachelor's degree
Master's degree
Doctorate

9. How do you consider your level of use of technology to support your children's homework?
None
Low
Medium
High

Instructions. Select the option that represents the frequency with which you performed the following activities related to your son/daughter's homework during your last bimester. There are no good or bad answers, you are only asked to be honest.

Support for autonomy (7 items). It involves making sure that children identify mistakes and difficulties and explore with them strategies for solving homework tasks.

Gonida & Cortina (2014). Adapted from Valdés, Grijalva & Parra (2020). In Valdés-Cuervo, Á., Grijalva-Quiñonez, C., Parra-Pérez, L. (2020). Motivational beliefs of mothers and students' purpose of learning in homework. Their relationship with autonomy support and control. Journal of Psychodidactics, 25, 100-108.
https://doi.org/10.1016/j.psicod.2020.05.002

[0] Never
[1] Almost never
[2] Sometimes
[3] Almost always
[4] Always

1. When my child makes a mistake on his/her homework, I encourage him/her to check and correct it.

2. I explain a homework assignment to my child when he/she finds it difficult.

3. When my child does not know how to solve a homework assignment, I tell him/her to identify the known elements and build on them to find the solution.

4. When my child does not understand how to solve a task, I solve an example first in order to make it easier for him/her to understand.

5. When my child wrongly solves a task, I ask him/her to describe how he/she solved it in order to make it easier for him/her to understand his/her mistake.

6. I guide my child on how to perform tasks that are difficult for him/her.

7. When my child cannot solve a homework assignment, I encourage him/her to read the instructions carefully.

Cognitive stimulation (8 items). It involves guiding children in the search for additional information and homework-like exercises in order to improve homework-related skills.

Gonida & Cortina (2014). Adapted from Valdés, Grijalva & Parra (2020). In Valdés-Cuervo, Á., Grijalva-Quiñonez, C., Parra-Pérez, L. (2020). Motivational beliefs of mothers and students' purpose of learning in homework. Their relationship with autonomy support and control. Journal of Psychodidactics, 25, 100-108.
https://doi.org/10.1016/j.psicod.2020.05.002.

[0] Never
[1] Almost never
[2] Sometimes
[3] Almost always
[4] Always

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1. I advise my child to review his/her school materials (notes, books, guides, among others) to solve assignments correctly.

2. I use the computer with my child to complete homework assignments.

3. I guide my child in searching for information on the Internet to get help for his/her homework.

4. I provide my child with additional homework-like exercises to practice.

5. I assign my child additional homework to that assigned by the teacher.

6. I show my child books to enhance understanding of the homework.

7. I discuss homework-related issues with my child in order to enhance his/her learning.

8. I suggest my child to look for information (books, Internet, etc.) in order to get help for his/her homework.

Technostress (5 items).

Tarafdar, M., Tu, Q., Ragu-Nathan, B., & Ragu-Nathan, T. (2007) The Impact of Technostress on Role Stress and Productivity. Journal of Management Information Systems, 24(1), 301-328. http://dx.doi.org/10.2753/MIS0742-1222240109

[0] Strongly disagree
[1] Disagree
[2] Neither Agree nor Disagree
[3] Agree
[4] Strongly agree

1. I know enough about technology to help my children with their schoolwork.

2. I do not need a lot of time to understand the use of any technology my children need for their homework.

3. It is easy for me to find time to improve my technology skills to help my children.

4. I think other moms and dads know more about using technology than I do.

5. I often find it too complex to understand and use technology.

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