

Parental involvement and educational achievement: A consideration of this relationship in baccalaureate students

Involucramiento parental y logro educativo: un acercamiento a su relación en estudiantes de bachillerato
Envolvimento dos pais e nível de educação: uma abordagem à sua relação com estudantes do ensino secundário

父母参与及学业成就：探索两者在高中生身上的关系

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Abstract

The aim of the present study was to determine the relationship between parental involvement (communication, motivation and reading promotion) and educational achievement in baccalaureate students. A quantitative, cross-sectional, non-experimental and correlational study was conducted with 13,478 parents or legal guardians and students undertaking the educational stage under study in Mexico in 2018. A questionnaire was administered to parents or legal guardians, in which they provided information about their children. The questionnaire included items to measure factors pertaining to communication, motivation and reading promotion. The validity and internal consistency of each factor was established using exploratory and confirmatory factor analyses, according to the resulting Cronbach's alpha (α) and McDonald's omega (ω) coefficients, respectively. Educational achievement was determined according to student reading, mathematics and science outcomes in PISA 2018. In order to empirically verify the proposed theoretical model, a structural equation modelling approach was taken and, from this, the empirical model was obtained. Based on the above, educational achievement was found to be directly related with communication and reading promotion. Likewise, an indirect relationship was obtained between motivation and educational achievement. The relationship between the factors examined in the present study and educational achievement is not sufficiently considered in baccalaureate students. It is, therefore, important to recognise family as a valuable entity with a meaningful impact in the school environment.

Keywords: communication, family, reading, motivation, school performance.

Resumen

El objetivo del presente trabajo fue determinar la relación existente entre el Involucramiento parental (Comunicación, Motivación y Fomento lector) y el Logro educativo en estudiantes de bachillerato. Fue un estudio cuantitativo, transversal, no experimental y correlacional que estuvo conformado por 13,478 madres, padres y/o tutores y estudiantes que cursaban el nivel educativo en mención en México en el año 2018. Fue aplicado un cuestionario para madres, padres y/o tutores, en el cual, brindaban información acerca de sus hijas e hijos. De este cuestionario fueron seleccionadas preguntas para medir los factores de Comunicación, Motivación y Fomento lector, determinando validez y consistencia interna de cada factor a través de los análisis factoriales exploratorio y confirmatorio y los coeficientes alfa (α) de Cronbach y omega (ω) de McDonald, respectivamente. El logro educativo se midió a través de los resultados del estudiantado en lectura, matemáticas y ciencias en PISA 2018. Para comprobar empíricamente el modelo teórico propuesto, se aplicó el modelaje con ecuaciones estructurales. Una vez que se aplicó dicho modelaje se obtuvo el modelo empírico. Con base en lo anterior, se encontró una relación directa entre la Comunicación y el Fomento lector con el Logro educativo, asimismo, se obtuvo una relación indirecta entre la Motivación y el propio Logro educativo. Por consiguiente, se da por sentada la relación entre los factores analizados y el Logro educativo en estudiantes de bachillerato, de ahí la importancia de reconocer a la familia como un ente valioso que tiene impacto en el ámbito escolar.

Palabras clave: Comunicación, familia, lectura, motivación, rendimiento escolar.

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Resumo

O objetivo deste estudo foi determinar a relação entre o Envolvimento dos Pais (Comunicação, Motivação e Incentivo à Leitura) e a Realização Educativa nos alunos do ensino secundário. Foi um estudo quantitativo, transversal, não experimental e correlacional que foi composto por 13 478 mães, pais e/ou tutores e estudantes que frequentavam o nível educativo em questão no México, em 2018. Foi aplicado um questionário a mães, pais e/ou tutores, no qual estes forneciam informações sobre os seus filhos. A partir deste questionário, foram selecionadas perguntas para medir os fatores de Comunicação, Motivação e Incentivo à Leitura, determinando a validade e consistência interna de cada fator através da análise exploratória e confirmatória dos coeficientes alfa (α) de Cronbach e Omega (ω) de McDonald, respetivamente. A realização educativa foi medida através dos resultados dos estudantes em leitura, matemática e ciências no PISA 2018. Para testar empiricamente o modelo teórico proposto, foi aplicada a modelação com equações estruturais. Uma vez aplicada esta modelização, obteve-se o modelo empírico. Com base no acima exposto, foi encontrada uma relação direta entre Comunicação e Incentivo à Leitura e Realização Educativa, e foi encontrada uma relação indireta entre Motivação e a própria Realização Educativa. Por conseguinte, a relação entre os fatores analisados e os resultados escolares dos alunos do ensino secundário é tida como certa, daí a importância de reconhecer a família como uma entidade valiosa que tem um impacto no ambiente escolar.

Palavras-chave: Comunicação, família, leitura, motivação, desempenho escolar.

摘要

该研究旨在确定父母参与（沟通、激励和阅读推广）与学业成就在高中生身上的关系。这是非实验性、非相关性的研究，采用定量、横向研究方法对 2018 年墨西哥高中阶段的学生及其父母或监护人，共计 13478 人进行分析。我们对父母或监护人进行了问卷调查，就其孩子的信息进行询问。我们对该问卷中的问题进行了精心地挑选，以便更好地测量沟通、激励和阅读推广这三大因素。通过探索性因素分析、确认性因素分析、克隆巴赫系数、麦当劳的欧米伽系数确定因素的效度和内部一致性。使用 2018 年国际学生能力评估计划中的阅读、数学和科学衡量学生的学业成就。为了实证检验提出的理论模型，研究使用了结构方程，从而得到了经验模型。在此基础上，研究发现沟通和阅读推广与学业成就间有直接的联系，而激励与学业成就间的联系为非直接联系。研究证实了分析因素与学业成就在高中生身上的关联，也表明了家庭这个重要的存在，在学校领域也发挥着非常深刻的影响。

关键词: 沟通、家庭、阅读、激励、学业成就

Children and adolescents have a basic right to education as it equips them with the knowledge required for their development, the tools to identify and enact other rights, and the chance to reach their maximum potential both personally and academically (UNICEF, s.f.). In order to guarantee this right, the state must ensure a number of conditions are met in the school-aged population, including access to life-long learning (INEE, 2019a).

However, when it comes to providing opportunities for learning achievements the Mexican state falls short given that many students do not attain the competencies needed for academic development (INEE, 2018). This is a serious situation because these competencies form the basis for the

obtainment of further competencies at later educational stages (SEP, 2016).

It is well known that poor learning outcomes have detrimental and cumulative implications, leading to low wages, low productivity, informal employment, risk behaviour, etc. Unfortunately, the actions taken by the Mexican state have not been enough to improve this situation. One potential approach to tackle this is for other stakeholders to join forces (DOF, 2020).

An example of such stakeholders is seen in researchers. Researchers play an important role by examining educational achievement and its association with different factors. These factors are tightly inter-related in a way that is difficult to partial out (González-Pienda, 2003;

INEE, 2005). This means that the issue is complex as it is comprised of multiple dimensions that require immediate attention (González-Medina & Treviño-Villarreal, 2018; Reyes-Carretero et al., 2014; Treviño-Villarreal & González-Medina, 2020).

Specifically, researchers have shown that parents, who are also stakeholders, contribute to the learning achievement and academic performance of their children (Chaparro Caso-López et al., 2016; Rodríguez-Pichardo & González-Medina, 2018). This turns them into pillars of the educational system and makes it essential that they maintain adequate communication with their children and assume responsibility over their education (Juárez, 2019).

In addition to this, it has been said that work aimed at improving educational achievement at different educational stages, including baccalaureate, should consider and attend to the family environment of students (Benítez, 2015). In this sense, viewing parental engagement as a vital cog to ensuring achievement makes it a priority issue (Gaviria, 2014).

A large amount of literature exists regarding the relationship between family and school, however, few articles explore this issue at the baccalaureate level (Infante-Blanco & Padilla-González, 2020). Thus, the present article is important in serving to address this gap.

In addition, it is necessary to perform research to boost interest into the aforementioned line of research in Mexico. Indeed, the General Law of Education (Ley General de Educación) (2019) states in Article 3 that the state shall promote the active participation of parents, students and other stakeholders, whilst, Article 78 outlines that parents should be co-responsible for their children's education by supporting their learning, reviewing the progress of their performance and striving, at all times, for their positive development and wellbeing.

Family and its role in education

Briefly, school helps develop enjoyment and curiosity for learning, however, this task should be also extended to the home setting (INEE, 2019b). This is because within this space the family, in its global sense, orients future learning approaches as the basic unit of society and the main context in which relationships are formed (Gobierno de Chile, 2006; Martínez-Vasallo, 2015; Rodríguez-Triana, 2018; Sánchez-Villal et al., 2020). Thus, these two distinct contexts are vital and complimentary (Ruiz-Quiroga, 2010), with good synergy being needed between the two (Guzón-Nestar & González-Alonso, 2019; Hernández et al., 2017; Pire-Rojas & Rojas-Valladares, 2020).

As previously described, parental engagement has a positive effect on student performance and achievement (Arciniegas-Daza et al., 2018; Herrera-Martínez & Espinoza-Freire, 2020; López-Espinoza, 2015; Madjar et al., 2015; Morales-Castillo & Aguirre-Dávila, 2018; Park & Holloway, 2017; Unda-Costa, 2019). Parental engagement is understood as the active participation of parents in all aspects of their children's learning (Laboratorio de Investigación e Innovación en Educación para América Latina y el Caribe, s.f.), throughout their lives (Patrikakou, 2008), both at home and in all aspects of their academic progress. Given the great influence of the family, such achievement will, therefore, not be attained through schoolwork alone (Ruiz de Miguel, 2001). The following sections will describe the role of family on academic achievement.

Communication and educational achievement

Communication refers to the correspondence or dealings between two or more people (Real Academia Española, 2021a). Now, in order for communication between people to be achieved, a reciprocal exchange is required (Comité Editorial Salus, 2016). This will result in benefits (Raimundi et al., 2017), meaning that effective communication should be encouraged within the family. When performed correctly it

constitutes an action that allows all individuals to be heard and creates an ideal environment of trust and understanding (Sánchez-Escobedo & Valdés-Cuervo, 2011; Sistema Nacional DIF, 2021).

One of the aforementioned benefits of communication for families is increased support between parents and children, including teenagers. This stimulates development and results in better performance (Acuña-Echeverría et al., 2018; de León-Sánchez & Silió Sáiz, 2010; Romagnoli & Cortese, 2015; Ruiz-García et al., 2012; Villalobos-Martínez et al., 2017).

Authors such as Ayra-Arias & Ortiz-Huaynate (2017), Cabello-Núñez & Sucso-Avedaño (2010), Guzmán-Arteaga & Pacheco-Lora (2014), Lam & Ducreux (2013) & Zambrano-Mendoza et al. (2019) found that the type of communication seen at home between students and their family was related with academic achievement. Further, Guajala-Aguilar (2014), Mera-Martillo (2019) and Sánchez-Escobedo & Valdés-Cuervo (2011) related communication with academic grades in a group of students including teenagers.

Further, Fernández-Alonso et al. (2017) found that the type of involvement of parents in their adolescent children's education influenced outcomes with, for example, showing interest in their child's work and studies, and asking questions about their courses favouring positive outcomes.

Similarly, López-Espinoza (2015) acknowledged that one of the dimensions of parental engagement to have the greatest effect on the academic achievement of adolescent students was discussing their grades. Regueiro et al. (2015) highlighted that some students obtained better academic outcomes when they discussed school matters with both parents, in other words, when they had good communication.

Motivation and educational achievement

With regards to motivation, this is an important factor throughout life, especially in the educational context (Rubio-Rodríguez,

2013). Motivations can be influenced by others when they act to stimulate them or increase their interest in something, leading them to conduct themselves in a certain way (Real Academia Española, 2021b). In the same way, motivation is one of the most valuable drivers of learning and, as a result, its importance has been examined in the family setting (Mayorquín-Reyes & Zaldívar-Colado, 2019; Renta-Davids et al., 2019).

In this regard, Ruiz de Miguel (2001) argues that a climate of affection within the family setting that promotes both the emotional balance of students and their self-confidence, whilst also reinforcing positive aspects of school is linked to academic achievement. Similarly, Rodríguez-Pichardo & González-Medina (2018) found that having parents who support and encourage their children at school was related to academic achievement.

Martínez-Chairez et al. (2020) carried out a recent study in which they found the educational support provided by parents to be related to academic achievement. They further highlighted the importance of parents using encouraging words with children regarding their schoolwork, whilst also participating and involving themselves in their children's academic process.

Beneyto-Sánchez (2015) found that greater stimulating behaviour in parents led to better academic outcomes for their children. Likewise, Robles-Rosales (2020) revealed the relationship between parental academic support and academic performance in middle schoolers. Specifically, this support encompassed praise from parents for achieving good outcomes and informing children that their actions were meaningful.

Regueiro et al. (2015) highlighted that students achieved better academic outcomes when, amongst other things, they were motivated by their parents and received emotional support when conducting tasks. Similar findings were reported by Lastre-Meza et al. (2018) and Ortiz-Duarte (2021), who concluded that some factors such as providing advice and guidance to children regarding their

academic activities also determined academic performance. In addition, Álvarez-Bermúdez & Barreto-Trujillo (2020) argued that bad family relationships could result in poor performance in high-school students.

Reading promotion and educational achievement

Reading constitutes a communication process in which an association is formed between the material and the reader who, due to their reading capacity, undergoes a process of synthesis, organisation and evaluation of the information in order to make it their own and give it its own meaning (Gutiérrez-Valencia & Montes de Oca-García, 2004).

In this sense, reading is a valuable tool at every educational level because it allows students to develop academically, improve cognitive and intellectual performance, and face the challenges of a globalised world (Flores-Guerrero, 2016; González-Medina & Treviño-Villarreal, 2020). Consequently, study plans and programs include reading promotion and consider it a part of their main objectives (Díaz-Ramiro et al., 2021).

Reading promotion, also referred to as reading motivation, refers to the promotion or encouragement of reading. This topic is of the utmost importance to society and education (Sedano-Fernández, 2015). All individuals involved in educational processes, including the family, should engage in reading promotion (Trimiño-Quiala & Zayas-Quesada, 2016) because, as mentioned above, active parental participation and involvement in the learning processes of their children impacts their academic performance (Martínez-Chairez et al., 2020; Razeto, 2016).

Research has highlighted the role played by family attitudes towards reading on the level of development achieved by children in certain subjects (Gil-Flores, 2009). Sánchez-López (2013) examined the relationship between parental involvement in educational matters and academic performance in elementary school children. In this case, parental involvement included exerting control over

reading habits (parents read to their children and had their children read aloud to them) and visiting cultural venues such as libraries or book fairs.

Similarly, Robles-Rosales (2020) confirmed the relationship between parental involvement in their children's academic life and their academic performance. They administered a questionnaire to students that addressed issues such as reading and, particularly, whether their parents read with them or encouraged them to read, and whether they had educational materials such as books at home.

As a consequence of the fact that interest and capacity for reading favours better student performance, the Ministry of Education of Ecuador (2020) calls for parents to commit to encouraging their children to read at home.

Izquierdo-Rus et al. (2019) performed a study with elementary school-aged children of the determinants of reading promotion in the family setting. Findings from this work revealed that the most relevant parental models, when it comes to improving student performance, focused on supervised learning exercises and targeted proposals. Such proposals included the promotion of parental involvement in reading promotion activities and the creation of libraries in the academic community to give access to families.

Connected factors: communication, motivation and reading promotion in the family

According to some authors, communication, motivation and reading promotion are inter-related. According to Cudris-Torres et al. (2017), adequate family communication is an important factor for young people and is related with motivation to achieve a goal.

Montenegro-Andrade (2020) highlighted the relationship between extrinsic motivation and reading habits among students. In this sense, extrinsic motivation was boosted by parents exhibiting a sense of pride in the goals achieved by their children, rewarding

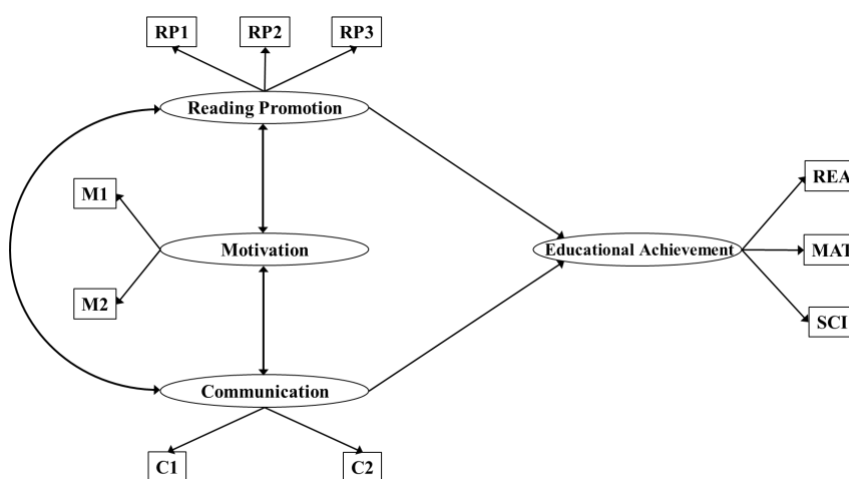
achievements and supporting their children to complete homework tasks. With regards to reading habits, this was conceptualised with regards to reading engagement during time off and inspiration for reading.

The Andalusian Teaching Federation (Federación de Enseñanza de CC.OO. de Andalucía, 2011) and Mayorga-Fernández & Madrid-Vivar (2014) have associated reading promotion with family communication. Specifically, Corchete-Sánchez (2014) argues that books provide the perfect medium for encouraging communication between children and adults. Likewise, Mendoza et al. (2014)

found a relationship between reading habits and parental communication.

It is patent that the family has an influence on the educational development of students, particularly, communication at home, motivation and learning support strategies are key inter-connected factors (Bazán-Martínez, 2014). Thus, the aim of the present study was to identify the relationship between parental involvement and educational achievement in baccalaureate students in Mexico. The theoretical framework applied is presented in Figure 1.

Figure 1. Theoretical model of the relationship between parental involvement and educational achievement



Methods

A quantitative study was performed that was based on empirical methods and used multivariate statistical techniques for data analysis (Maldonado-Pinto, 2018). The study provided a cross-sectional snapshot of a single point in time. It was non-experimental, in the sense that participants were not manipulated, and correlational, in the sense that relationships were established between the elements mentioned in the theoretical model (Sampieri, 2018).

Sample

The sample was composed of 13,478 students, parents or legal guardians. The sample included 6,739 students undertaking

baccalaureate studies during 2018 in Mexico. A total of 3,520 (52.2%) were females and 3,219 (47.8%) were males. The parent or legal guardian group was composed of 5,254 (78.0%) women, 1,391 (20.6%) men and 94 (1.4%) individuals who did not specify their gender. The mean age of students was 15.8 ± 0.3 years. Probabilistic, stratified and two-stage sampling was performed of students and schools.

Instruments

Mexico was one of 17 countries in which a questionnaire was administered to parents or guardians requesting information about their involvement in their children's school and learning (OECD, 2019). Seven questions were selected from this questionnaire to measure

communication (C) (2 questions), motivation (M) (2 questions) and reading promotion (RP) (3 questions). These questions stem from an exhaustive literature search and, in order to ensure that they measured the aforementioned factors, their validity and internal consistency were determined through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), alongside Cronbach alpha (α)

and McDonald's omega (ω) coefficients (González-Medina & Treviño-Villarreal, 2020; Palacios-Rodríguez & Illescas-Martínez, 2021; Treviño-Villarreal & González-Medina, 2020). The questions for each factor and their respective response options are presented in Table 1. Each question used an ordinal scale.

Table 1. Factors, questions and response options

Factor	Question	Response option
Reading promotion	How often do you perform these activities with your child?	<ul style="list-style-type: none"> • Never or almost never. • Once or twice a year. • Once or twice a month. • Once or twice a week. • Every day or almost every day.
	• I help my child with reading and writing assignments (RP1).	
	• I go with my child to the library or bookstore (RP2). • I talk to my child about what they are reading (RP3).	
Communication	How often do you perform these activities with your child?	<ul style="list-style-type: none"> • Never or almost never. • Once or twice a year. • Once or twice a month. • Once or twice a week. • Every day or almost every day.
	• Talk about how your child is doing in school (C1). • Spend time talking with my child (C2).	
Motivation	What is your level of agreement with these statements?	<ul style="list-style-type: none"> • Totally disagree. • Disagree. • Agree. • Totally agree.
	• I encourage my child to make an effort in school and I congratulate them for their achievements in school (M1).	
	• I encourage my child to believe in themselves (M2).	

Source: Redacted by the present authors using information from PISA 2018.

In order to determine validity and reliability, the responses provided by a group of 560 parents or guardians of students enrolled on baccalaureate studies in Mexico in 2018 were analysed. Minimum response requirements were met for all questions (Black & Babin, 2019). EFA applied varimax rotation.

Outcomes are presented in Table 2. In addition, the Kaiser Mayer Olkin (KMO) value was 0.749, p-value associated with the Bartlett sphericity test was < 0.001 and the percentage of explained variation was 71.9%. CFA outcomes are presented in Figure 2.

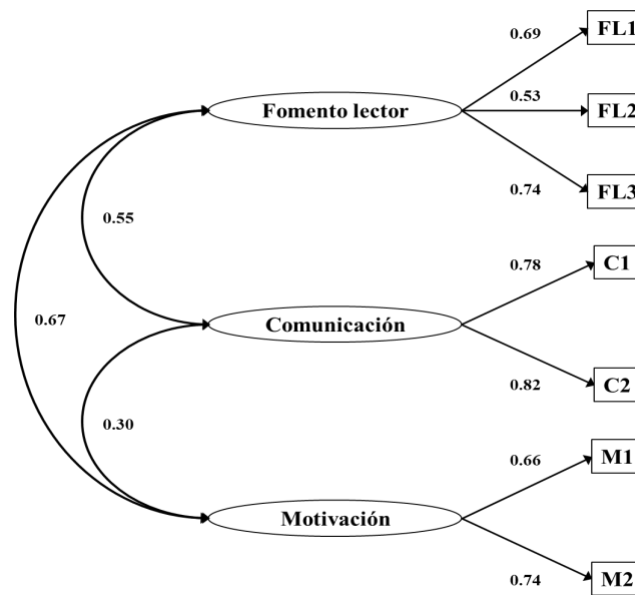
Table 2. Exploratory factor analysis outcomes (rotated component matrix)

Questions	Reading promotion	Communication	Motivation
How often do you perform these activities with your child?			
• I help my child with reading and writing assignments (RP1).	0.838	0.039	-0.045
• I go with my child to the library or bookstore (RP2).	0.758	0.057	0.263
• I talk to my child about what they are reading (RP3).	0.664	0.111	0.402
How often do you perform these activities with your child?			
• Talk about how your child is doing in school (C1).	0.065	0.888	0.164
• Spend time talking with my child (C2).	0.075	0.879	0.184
What is your level of agreement with these statements?			
• I encourage my child to make an effort in school and I congratulate them for their achievements in school (M1).	0.095 0.241	0.207 0.159	0.821 0.793
• I encourage my child to believe in themselves (M2).			

Source: Redacted by the present authors using information from PISA 2018.

Extraction method: Principal components analysis.

Figure 2. Confirmatory factor analysis



Notes: $\chi^2/df.$ = 2.1, CFI = 0.982, IFI = 0.981, TLI = 0.954, RMSEA = 0.052

EFA and CFA outcomes reveal that the questions posed adequately measured each of the proposed factors. With regards to internal consistency, this was deduced from reliability outcomes pertaining to each factor in accordance with the aforementioned

coefficients. These outcomes are presented in Table 3. Based on all of the coefficients produced, it can be concluded that all factors provided an acceptable measure of their proposed construct (Hayes & Coutts, 2020).

Table 3. Factor reliability

Factor	Cronbach's alpha (α)	McDonald's omega (ω)
Reading Promotion	0.788	0.808
Communication	0.750	0.800
Motivation	0.780	0.801

Source: Developed by the present authors.

EFA and CFA outcomes, together with the Cronbach alpha (α) and McDonald's omega (ω) coefficients suggest that the items used to measure communication, motivation and reading promotion were valid and reliable.

PISA 2018 outcomes for reading (REA), mathematics (MAT) and science (SCI) provided evidence of educational achievement (González-Medina & Treviño-Villarreal, 2020).

Data gathering and analysis

The PISA test was conducted in Mexico between the 23rd of April and the 11th of May 2018. Data were gathered by OECD and made available to the public in December 2019.

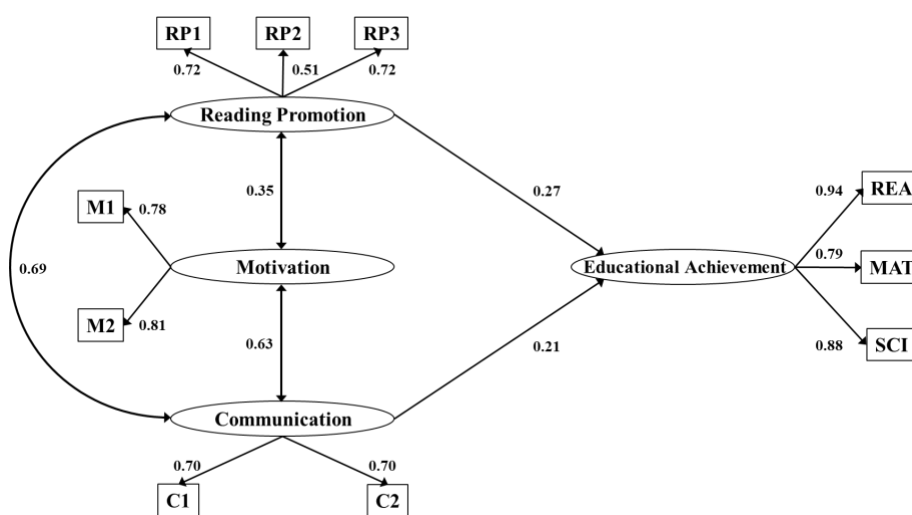
In order to empirically test the proposed theoretical model, a structural equation modelling approach was taken. Goodness of fit of the model to the empirical data was also tested in line with reference values: χ^2/df (< 5 ; Hair et al., 1999), Tucker Lewis index (TLI; > 0.9), normalised fit index (NFI; > 0.9) (Hox & Bechger, 1998) and root mean square error of

approximation (RMSEA; < 0.08) (Escobedo et al., 2016). The parsimony normed fit index (PNFI) was also used, with acceptable values being considered as those close to one (Sivo et al., 2006). All outcomes were statistically significant with $p < 0.05$. Data processing was performed using SPSS 27 and AMOS 27.

Results

The empirical model shown in Figure 3 was produced following application structural equation modelling. Goodness of fit and parsimony statistics produced sufficient evidence to be able to conclude that the model acceptably represented the empirical data.

Figure 3. Empirical model



Notes: $\chi^2/df. = 3.6$, CFI = 0.986, IFI = 0.987, TLI = 0.974, RMSEA = 0.025

Standardised regression weights relating educational achievement with reading promotion and communication were 0.27 and 0.21, with both of these being significant. This shows that students whose parents or legal guardians helped them with reading and writing work, took them to a library or bookstore, discussed what they were reading or how they were doing at school with them, or spent time talking with them at least once a week had better educational achievement.

Communication was significantly correlated with reading promotion and motivation (0.69 and 0.63, respectively). In other words, parents or legal guardians who spent time talking to their children about how they were doing at school, helped them with reading and writing work, took to them to a bookstore or library and discussed what they were reading at least once a week also reported encouraging their children, congratulating

them for their achievements and instilling confidence in them.

Lastly, a significant correlation was found between motivation and reading promotion (0.35). This shows that students whose parents or legal guardians agreed or totally agreed that they encouraged their children to make an effort, congratulated them for their achievements and encouraged them to believe in themselves also rated highly for reading promotion.

Discussion and conclusions

Given the findings produced in the present study a relationship can be confirmed to exist between parental involvement and educational achievement in baccalaureate students.

The communication factor, in particular, was related with educational achievement. Similar findings have been reported by Acuña-Echeverría et al. (2018), Ayra-Arias & Ortiz-

Huaynate (2017), Cabello-Núñez & Susco-Avenidaño (2010), de León-Sánchez & Silió Sáiz (2010), Guajala-Aguilar (2014), Guzmán-Arteaga & Pacheco-Lora (2014), Lam & Ducreux (2013), Mera-Martillo (2019), Romagnoli & Cortese (2015), Ruiz-García et al. (2012), Sánchez-Escobedo & Valdés-Cuervo (2011), Villalobos-Martínez et al. (2017) and Zambrano-Mendoza et al. (2019), who highlighted that family communication favoured better academic grades, performance and academic achievement.

Authors such as Fernández-Alonso et al. (2017) have shown that the specific type of communication maintained between parents and their children is related with educational achievement with favourable outcomes being related with parents asking students about their classes. Further, López-Espinoza (2015) revealed that dialogue between parents and their adolescent children about their grades had a positive effect on their academic performance. Thus, it is essential that parents talk to their children about how they are doing at school and set time aside to converse at least once a week.

In the present work, reading promotion was also related with educational achievement. Gil-Flores (2009) produced similar findings. Similarly, Sánchez-López (2013) highlighted that parental engagement (which includes, amongst other things, parents talking about reading, reading stories or books to their children and taking them to libraries or book fairs) was related with the academic performance of their children.

In their research, Robles-Rosales (2020) has also the existence of a relationship between parental engagement (including parents reading to their children, encouraging them to read or bringing books into the house) and their children's academic results. In this sense, it is fundamental that parents help their children with reading and writing assignments, talk to them about what they are reading, and take them to visit libraries and bookstores at least once a week.

Turning attention to other aspects of the study, motivation and educational achievement were indirectly related through communication and reading promotion. Similar findings were reported by Ruiz de Miguel (2001) who associated the academic performance of children with confidence promotion within the family unit and positive reinforcement of learning acquired at school. Likewise, research conducted by Rodríguez-Pichardo & González-Medina (2018) revealed that children's educational achievement was higher when parents encouraged them in school-related matters.

Additionally, other research has also reported similar evidence to that found by the present investigation. Such prior evidence confirmed that academic achievement or performance is related with parental academic support (for example, by praising their children when attaining certain achievements) (Robles-Rosales, 2020), motivation and parental emotional support (Regueiro et al., 2015), and guidance and advice (Lastre-Meza et al., 2018; Ortiz-Duarte, 2021).

Given these findings, it is important that parents encourage their children to work hard at their tasks and congratulate them for their achievements at school, whilst also encouraging them to have confidence in themselves as these actions undoubtedly improve communication as well as reading promotion and, as a result, lead to better educational attainment.

It also serves to mention that communication, motivation and reading promotion are inter-related. In this respect, Cudris-Torres et al. (2017) found a relationship between communication and motivation, whilst Montenegro-Andrade (2020) uncovered an association between motivation and reading promotion and, finally, the Andalusian Teaching Federation (Federación de Enseñanza de CC.OO. de Andalucía, 2011), Mayorga-Fernández & Madrid-Vivar (2014), Corchete-Sánchez (2014) and Mendoza et al. (2014) found a relationship between reading promotion and family communication.

Finally, communication, motivation and reading promotion are clearly connected and have an impact on outcomes in baccalaureate students. The family role on academic achievement is irrefutable and, as a result, both the school and the home provide settings in which learning is generated and reinforced. Focus on these settings, throughout life, is necessary for education to progress.

Based on the aforementioned, conversation spaces should be created for parents and children within schools in order to communicate the importance of promoting the factors supported in the findings produced in the present investigation. Such spaces should also be used to create and reinforce positive development of these factors.

The present study has a number of limitations. Firstly, young school drop-outs were not included in the study sample. Their views are likely important given that parental involvement regarding the examined factors could have a meaningful impact on improving their educational achievement. Another limitation is that outcomes were not examined according to school type and parental schooling level was not considered.

Future studies are urged to use longitudinal designs and larger samples. Further, other determinants of parental involvement should be considered. It would also be useful to create a valid, reliable questionnaire capable of gathering valuable information on the topic. Likewise, it would be informative to conduct independent analyses of reading, mathematics and science courses and their relationship with communication, motivation and reading promotion.

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