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# Factors that bias teacher expectations: Findings from Chile

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**Abstract**   It is well-known that teacher expectations tend to be biased by factors such as student socio-economic status (SES) and gender. However, much less research has been devoted to understanding how teacher characteristics may impact their own expectations of the students. The present study investigated teacher expectations for 343 Chilean teachers (240 in-service and 103 pre-service). We first designed and validated an instrument to measure expectations; then we assessed the effect of teacher gender and experience, and student gender and school-SES in the formation of teacher expectations. The data were analysed using hypothesis and data-driven analyses. The results showed that SES had an effect on teacher expectations ($\eta2$= .03 to .12); there was a higher probability that teachers from high-SES schools would have positive expectations of their students. However, negative expectations were equally distributed across teachers working in high and low-SES schools. There was also no evidence of the effect of teacher or student gender on teacher expectations. With respect to teacher experience, the findings were clear cut; both pre-service and in-service teachers shared identical expectations of their students. These findings have important implications regarding teacher training programmes since the expectation bias is observed very early during training.

**Factores que sesgan las expectativas docentes: hallazgos en Chile**

**Resumen**   Es bien sabido que las expectativas docentes tienden a estar sesgadas por factores como el nivel socioeconómico de los estudiantes (NSE) y el género. Sin embargo, se ha investigado menos cómo las características de los docentes pueden afectar sus propias expectativas de los estudiantes. El presente estudio investigó las expectativas de 343 docentes chilenos (240 en servicio y 103 alumnos en prácticas). Primero se diseñó y validó un instrumento para medir expectativas; luego se evaluó el efecto del género y experiencia del profesor, y el género del estudiante y NSE de la escuela en la formación de las expectativas del profesor. Los datos fueron analizados mediante técnicas dirigidas por hipótesis y por datos. Los resultados mostraron un efecto del NSE de la escuela en las expectativas docentes ($\eta2$ = .03 a .12), con una mayor probabilidad de que los profesores de escuelas con alto NSE tengan expectativas positivas de sus estudiantes. Sin

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embargo, las expectativas negativas fueron distribuidas equitativamente entre los profesores que trabajaban en escuelas con bajo y alto NSE. Tampoco hubo evidencia del efecto de género de los profesores o estudiantes en las expectativas del profesor. Respecto a la experiencia del profesor, los hallazgos son claros; tanto los estudiantes en práctica profesional como los profesores en servicio mostraron idénticas expectativas hacia sus estudiantes. Estos hallazgos tienen implicaciones importantes respecto a los programas de formación docente ya que el sesgo de las expectativas se observa tempranamente desde la formación.

Teacher expectations may be understood as the belief a teacher has in the achievement potential of their students. The significance of this lies in the fact that they have the power to determine both the level of educational content and the way it is imparted (Rosenthal & Jacobson, 1968; Rubie-Davies, Flint, & McDonald, 2012). The expectations construct was first developed by Merton (1948) based on a sociological perspective under the term *self-fulfilling prophecy*. He showed that false beliefs towards something or someone determined behaviours that made these beliefs real. Two decades later, Rosenthal and Jacobson (1968) were among the first researchers to apply the self-fulfilling prophecy to the school context. Although their findings have been widely criticized (see Good, Sterzinger & Lavigne, 2018), they laid the groundwork for more research in this field to be able to understand; for example, that when a teacher has high expectations of their students, their academic achievement also tends to be higher. In contrast, when a teacher's expectations are low, students' results tend to be poorer (Rubie-Davies, Peterson, Sibley & Rosenthal, 2015; Rubie-Davies & Rosenthal, 2016). To date, the consensus has been that teacher expectations may be biased by student gender (Boerma, Mol, & Jolles, 2015; Tiedemann, 2000) and socio-economic status (SES) (Auwarter & Aruguete, 2008; Del Río & Balladares, 2010; Regalla, 2013; Sweatt, 2000; van den Bergh, Denessen, Hornstra, Voeten, & Holland, 2010).

Teacher expectations have been studied primarily in countries such as New Zealand (Rubie-Davies, Hattie, & Hamilton, 2006; Speybroeck et al., 2012), the USA (Boerma et al., 2015; Sorhagen, 2013), and Germany (Tiedemann, 2000). However, in less-developed countries, such as those in Latin America, the subject has not been researched in any depth. In fact, to the best of our knowledge, there has been only one Chilean study to directly and empirically address teacher expectations for pre-service teachers (see Del Río & Balladares, 2010). Furthermore, the majority of studies looking at teacher expectations worldwide have focused on the effect of factors such as student SES and gender in the formation of expectations (Rubie-Davies, et al., 2011; Watson, et al., 2015) and have overlooked other important variables, such as the characteristics of the teachers themselves (age, experience, gender, etc.). Hence, there is a need to explore teacher expectations in Latin American countries and assess to what extent teacher characteristics can shape teacher expectations of students' academic achievement. For example, in Latin America – and especially in Chile – there have been no empirical studies that have considered teacher expectations as a possible cause of poor student performance, particularly among those from more vulnerable backgrounds. Chile is one of the OECD countries with the highest level of economic disparity (OCDE, 2011), and this is reflected in student performance at school. Low-SES students perform more poorly than those from high-SES schools (Mayol, Araya, Azócar, & Azócar, 2011; OCDE, 2016). Furthermore, the distribution of students across the different types of school (public, private-subsidised, and private) is very different to what is found in other countries. In Chile, the type of school each student attends is determined not randomly, but according to SES (González, 2017). In other words, low-SES children attend public schools (low-SES schools), while medium- and high-SES children attend private-subsidised or private schools (or medium-high-SES school) (Donoso & Arias, 2012). From the point of view of the Chilean education system, there is a need to establish the classification as the degree to which teacher expectations are biased is based on the type of institution in which they work. This, in turn, is linked to the socio-economic characteristics of the students.

## The influence of student and school SES and gender on teacher expectations

Student SES and gender are factors that may affect both teacher expectations and, in turn, students' academic achievement (Auwarter & Aruguete, 2008; Barbarin & Aikens, 2015). In a review of results from studies into SES conducted over the past 35 years, Jussim and Harber (2005) found that the effect of teacher expectations on student performance is, to a large extent, explained by social variables. In particular, these studies' findings suggest that students from socio-economically deprived backgrounds are considered by their teachers to have a less promising future than those students with more favourable socio-economic characteristics. These expectations might lead teachers to carry out differentiated educational practices, which will ultimately impact their students' academic achievement. For example, teachers who believe that their low SES students will not achieve the course learning outcomes, will set less demanding pedagogical goals for them in comparison to their high SES peers (Good & Lavigne, 2018; Kuklinski & Weinstein, 2001; Lavigne & Good, 2019; Rubie-Davies, Hattie, & Hamilton, 2006; Rubie-Davies, 2010).

In more recent studies conducted in the Netherlands, it has again been confirmed that students' socio-economic characteristics play an important role in teacher attitude, shaping expectations of their students (e.g., de Boer, Bosker, & van der Werf, 2010; Speybroeck et al., 2012). More specifically, teachers generally have lower expectations of low-SES students, and these low expectations may have a

negative impact on academic achievement in academic areas, such as language and mathematics. These findings are in line with the results from previous studies from the USA (Barbarin & Aikens, 2015; Kuklinski & Weinstein, 2001) and New Zealand (Rubie-Davies, 2006), revealing the presence of this phenomenon across the developed world.

It should be noted that, although the above findings are important, they have only been reported in highly developed and culturally similar countries. In less developed countries with different cultures from those already studied, very little research has been conducted into teacher expectations. For instance, in Latin America, particularly in Chile, there has been no research looking at teacher expectations an the main factors that affect them. It is also worth noting that the well-studied variable, student SES, is not as informative as school SES, which shows a larger effect on student achievement (Gustafsson, Nilsen, & Hansen, 2018). In fact, most of the variation in student performance between schools is accounted for by school SES (OECD, 2016). In practice, this means that higher concentrations of low-SES students have a negative impact on overall student achievement (Lauen & Gaddis, 2013).

The other factor that strongly influences teacher expectations is student gender. This is worrying since differences in teacher expectations between boys and girls may also lead to a gender gap in academic performance. For example, in a longitudinal study conducted in the USA, Robinson-Cimpian, Lubienski, Ganley, and Copur-Gencturk (2014) found that teachers consider male students to have better mathematical abilities than their female classmates, and that this resulted in boys achieving better grades than girls, particularly between the third and fifth grades. By contrast, regarding reading skills in the Netherlands, Boerma et al. (2015) found that teachers tend to perceive girls to be better at reading than boys. These results confirmed earlier findings in Germany by Wolter, Braun, and Hannover (2015), who also found a gender bias in teacher expectations of reading abilities: more positive expectations for girls than for boys. In summary, these findings suggest that teacher expectations are biased by gender; girls are identified as being better than boys in areas to do with "letters", and the reverse is true in areas involving "maths" or "sciences".

Although the studies above seem conclusive in identifying a gender gap in teacher expectations, Del Río and Balladares (2010) in Chile failed to find a significant gender effect on pre-service teacher expectations. It is worth mentioning, however, that Del Río and Balladares collected data based on hypothetical cases instead of real students, so their results should be interpreted with caution. More research is needed to fully understand gender bias in pre-service and in-service teachers in Latin America.

### The influence of teacher gender and experience on teacher expectations

As seen earlier, several studies have addressed the relationship between teacher expectations and student SES or gender, for the most part in the Netherlands and other developed countries such as Germany and New Zealand (e.g., Babad, 1993; Boerma et al., 2015; Brophy, 1982; Cooper & Good, 1983; de Boer, et al., 2010; Peterson, Rubie-Davies, Osborne, & Sibley, 2016; Sorhagen, 2013; Speybroeck et al., 2012). However, very few studies have dealt with the way in which certain characteristics of teachers themselves, such

as gender and teaching experience, may influence the formation of their own expectations. It is known that a teacher's characteristics – for example, their gender – have a certain degree of impact on the academic achievement of their students (e.g., Watson et al., 2015). It stands to reason, therefore, that these characteristics may also affect expectations. The study conducted in New Zealand by Watson et al. (2015) looked into the relationship between teacher gender and expectations of their students' performance in mathematics. The results revealed that male teachers have lower expectations of their students' (both boys and girls) performance in mathematics than their female colleagues. The same pattern was observed for reading in a more recent study (Watson et al., 2017).

Regarding teacher experience, there is very little research looking at the relationship between this and teacher expectations. There are only two recent studies that have investigated pre-service teacher expectations at different time points during their teacher training programmes. Both studies found that pre-service teachers tend to develop a set of expectations early in their training (Del Río & Balladares, 2010; Mizala, Martínez, & Martínez, 2015). In particular, Del Río and Balladares (2010) presented a series of four hypothetical student stories to pre-service teachers, changing the student's gender and SES in each case. The participants were required to read the stories, and answer questions based on a Likert scale. The items on the scale were the same for each of the situations. The results showed that pre-service teachers in their last year of study had more positive expectations than those in the first year, and that there were no differences according to student gender. These findings imply that teacher expectations begin to be formed from the very start of teacher training, and appear to become increasingly positive over time. However, as the study only involved pre-service teachers, it remains unclear how expectations evolve throughout a teacher's career. Furthermore, as Del Río and Balladares used hypothetical cases, we cannot be certain as to how teacher expectations of their own students would develop in the real world.

In the present study, we set out to assess how teacher expectations about students' academic performance are influenced by student characteristics: gender and school SES; and by teacher characteristics: experience and gender. In order to carry out the study, we first designed and validated a questionnaire that contained the factors of interest and was suited to the social context, providing greater robustness and thoroughness in the analysis of the phenomenon as suggested by Dakduk, González, and Malavé (2010).

## Method

### Participants

The sample comprised 343 teachers categorised into two groups according to their experience (in-service teachers [N=240] and pre-service teachers undergoing their teaching internship in either preschool, primary, and secondary institutions [N = 103]). Participants came from 13 teaching institutions, which were divided into high and low-SES schools according to their school vulnerability index (SVI), which is calculated annually by the National Board of School Aid and Scholarships (JUNAEB for its acronym in Spanish)

(Ministerio de Educación de Chile, 2017). The SVI can range from 0% to 100%: the higher the percentage the higher the school's vulnerability. The mean SVI for low-SES schools was 82% (range = 75% - 89%), whereas high-SES schools had a mean SVI of 53% (range = 42% - 62%). Distribution by school SES, teacher gender, and experience are shown in Table 1. There was no difference in gender distribution as a function of experience either in low-SES schools ($\chi^2$ (1) = 2.54, p = .132) or in high-SES schools ($\chi^2$ (1) = 1.69, p = .193). In both cases, there were more female than male teachers.

Table 1.   Sample distribution in the present study according to teacher status, teacher gender, and school SES

| School SES | In-service teachers | | Pre-service teachers | |
|---|---|---|---|---|
| | Male | Female | Male | Female |
| Low-SES schools | 29 | 76 | 19 | 22 |
| High-SES schools | 45 | 90 | 22 | 40 |
| Total | 64 | 166 | 41 | 62 |

Teachers' reported experience was categorised between 1 and 3 years (23.6%), between 4 and 7 years (17.5%), between 8 and 15 years (16%), and more than 15 years (12%). Pre-service teachers were categorised as having no experience (30%). There were no differences in teachers' level of experience as a function of school SES ($\chi^2$ (1) = 9.19, p = .056) or gender ($\chi^2$ (1) = 9.27, p = .055).

## Materials

*Teacher expectations questionnaire*. A questionnaire was created based on adaptations and translations of items taken from various existing instruments relating to beliefs and expectations (Auwarter & Aruguete, 2008; Del Río & Balladares, 2010; Regalla, 2013; Sweatt, 2000; Tiedemann, 2000; van den Bergh et al., 2010). The instrument incorporated elements linked to differences in academic performance as a function of student gender, as well as differences in terms of area of learning and those aspects commonly related to positive and negative expectations of student academic achievement and attitudes. The initial questionnaire comprised 22 questions and used a 7-point Likert scale (1 = *completely disagree*, 7 = *completely agree*). The final questionnaire contained a total of 14 questions.

## Procedure

The instrument was applied as a paper-and-pencil exercise on an individual, face-to-face basis at each of the schools. Time and location were agreed in advance with head teachers. In each case, the teacher reads the instructions, and once necessary clarifications had been provided, a time of approximately 10 minutes was given for responses.

## Results

In the first phase, both exploratory and confirmatory factor analyses were performed to assess construct validity and internal consistency reliability of the instrument. The exploratory factor analysis (EFA) resulted in six factors that explained 58% of variance (see Appendix 1). A confirmatory factor analysis (CFA) was then conducted on the structure obtained from the EFA. With regard to the CFI and TLI validation indices for the instrument, previous studies suggest that index values greater than or equal to .90 are considered acceptable (Hu & Bentler, 1999), indicating that the fitness indices obtained in this study are adequate. In terms of the RMSEA index, which refers to the amount of variance that is not explained by the model, values are considered to be adequate when lower than .07 (Steiger, 2007), and this was the case in the present study. The results indicated a satisfactory fit of the data to the proposed structure: $\chi^2$ (62) = 152.02, $p < .001$, CFI = .936, TLI = .906, RMSEA = .068. The analysis of internal consistency produced an overall Cronbach's Alpha ($\alpha$) of .73, suggesting that the scale presents an acceptable level of reliability, as indices fit within the recommended range (see George & Mallery, 2003); which was also the case for each of the 6 factors (.78, .73, .61, .83, .65, and .68, respectively).

The factor scores were noted for the second phase of analysis, which would address the second research objective and verify whether there are differences between teacher expectations (biased and unbiased) as a function of school SES (low school SES versus high school SES), teacher experience (in-service versus pre-service) and teacher gender (male versus female). A multivariate analysis of variance (MANOVA) was conducted using the intergroup factors "school SES" (low school SES versus high school SES), "gender" (male versus female) and "teacher experience" (in-service versus pre-service teachers undergoing teaching internship). The dependent variables comprised the factorial dimensions obtained. The associated descriptive statistics are shown in Table 2.

The results showed that there was no multivariate effect for the three-way interaction "school SES x gender x group", $\lambda$ = .977, $F$(6, 271) = 1.07, $p = .275$, $\eta2 = .023$; or for the two-way interactions "school SES x gender", $\lambda$ = .987, $F$(6, 283) = .53, $p= .378$, $\eta2 = .010$; "school SES x group", $\lambda$ = .985, $F$(6, 271) = .67, $p = .672$, $\eta2 = .015$; and group x gender, $\lambda$ = .990, $F$(6, 271) = .46, $p = .835$, $\eta2 = .010$. In terms of the main effects, none was found for gender, $\lambda$ = .966, $F$(6, 271) = 1.60, $p = .147$, $\eta2 = .034$ or experience, $\lambda$ = .978, $F$(6, 271) = 1.03, $p = .404$, $\eta2 = .022$, but an effect was found for school SES, $\lambda$ = .884, $F$(6, 271) = 5.95, $p < .001$, $\eta2 = .116$. The univariate contrasts indicated that the differences between institution types were found in: "positive expectations of academic achievement", $F$(1, 275) = 9.82, $p < .001$, $\eta2 = .03$, "expectations biased according to gender and area of learning", $F$(1, 276) = 9.86, $p < .001$, $\eta2 = .03$, "positive expectations of student attitude", $F$(1, 276) = 11.32, $p < .001$, $\eta2 = .04$ and "Negative expectations of academic achievement", $F$(1, 276) = 28.34, $p < .001$, $\eta2 = .09$. The effect sizes are considered to be between medium and moderate as reported by (Cohen, 1988). In summary, teachers working at low school SES present more negative expectations in terms of the academic achievement of their students, as well as greater bias according to gender and area of learning than their counterparts in high school SES.

Based on these results, we conducted a third phase of analysis to establish whether the a priori classification of

Table 2. Group means and standard deviations for extracted factors as a function of School SES, teacher experience, and teacher's gender

| Factors | Teacher | | School SES | | | |
| | Experience | Gender | Low-SES | | High-SES | |
| | | | M | SD | M | SD |
|---|---|---|---|---|---|---|
| Positive expectations of academic achievement | In-service | Female | -.164 | 1.010 | .203 | 1.015 |
| | | Male | -.759 | 1.047 | -.046 | .881 |
| | Pre-service | Female | -.198 | 1.167 | .257 | 1.037 |
| | | Male | -.482 | .787 | -.128 | .850 |
| Expectations biased according to gender | In-service | Female | -.352 | 1.077 | .226 | .891 |
| | | Male | -.601 | .938 | .142 | .981 |
| | Pre-service | Female | -.053 | .985 | .068 | 1.102 |
| | | Male | -.315 | 1.236 | .003 | .898 |
| Expectations biased according to area of learning | In-service | Female | .140 | .992 | -.150 | 1.093 |
| | | Male | .362 | .653 | -.321 | 1.098 |
| | Pre-service | Female | .324 | .791 | -.099 | 1.026 |
| | | Male | .201 | .559 | -.130 | .702 |
| Positive expectations of student attitude | In-service | Female | -.144 | .829 | -.075 | 1.192 |
| | | Male | .267 | .893 | -.491 | .935 |
| | Pre-service | Female | .119 | 1.128 | -.036 | 1.005 |
| | | Male | .320 | .688 | .371 | .621 |
| Negative expectations of academic achievement | In-service | Female | .308 | .963 | -.307 | .922 |
| | | Male | .709 | .715 | -.251 | .713 |
| | Pre-service | Female | .515 | 1.162 | -.160 | .948 |
| | | Male | .493 | 1.110 | -.058 | 1.008 |
| Differing expectations according to gender | In-service | Female | -.122 | .940 | .009 | 1.139 |
| | | Male | .008 | .706 | -.257 | 1.085 |
| | Pre-service | Female | .143 | .814 | -.045 | 1.025 |
| | | Male | .024 | .617 | .296 | .773 |

the groups as a function of school SES could be obscuring other relationships between teachers and their reported expectations. In order to visualise the natural associations between teacher characteristics and their expectations, we used a data-driven two stage cluster analysis. The standardised scores of those expectations shown in the previous analysis to be significant in teacher differentiation were used. This technique allows for teachers to be grouped according to their expectations, and for the distribution of each group to be studied in terms of gender, experience, and school SES. The method uses the log-likelihood function, which is appropriate for continuous and dichotomous variables. The cluster analysis showed that teachers were grouped into two clusters (see Table 3).

Cluster 1 comprised 189 (60.4%) participants, while cluster 2 gathered 124 (39.6%) participants. In-service and pre-service teachers with the highest levels of positive expectations regarding the performance and attitudes of their students were grouped in cluster 1 along with those with the lowest levels of negative expectations. In-service and pre-service teachers with the lowest levels of positive expectations regarding the performance and attitudes of their students were grouped in cluster 2 along with those with the highest levels of negative expectations. Both clusters presented a moderate bias in performance expectations as a function of student gender and area of learning. Subsequently, the distribution of the clusters as a function of school SES and teacher experience and gender were studied. The results showed no differences between clusters as a function of teacher gender: $\chi^2$ (1) = .393, $p$ = .531. In both cases, there was a greater proportion of female than male teachers. No differences were found as a function of teacher experience (pre-service versus in-service): $\chi^2$ (1) = 1 .021, $p$ = .312. In both cases there was a smaller proportion of pre-service teachers. Finally, a difference was found between clusters in terms of the distribution of their members as a function of institution type.

In summary, the results of this analysis largely match those obtained from the MANOVA. In the previous analysis, teachers presented no major differences in expectations as a function of their gender or experience. The cluster results confirm this finding: the high- and low-expectation clusters comprised the same proportion of male and female teachers as well as the same proportion of in-service and pre-service teachers ($\chi^2$ (1) = .393, $p$ = .531, $\chi^2$ (1) = 1 .021, $p$ = .312, respectively). However, the results concerning the main effect of school SES only partially coincide with those from the previous analysis, which found that teachers

Table 3.   Clusters compositions based on factors scores, teacher gender and status, and School- SES

|  | Cluster 1 (N=189) | | Cluster 2 (N=124) | |
|---|---|---|---|---|
|  | M | SD | M | SD |
| Positive attitude | .486 | .765 | -.761 | .846 |
| Positive performance | .601 | .558 | -.929 | .817 |
| Gender bias by area | -.048 | 1,112 | .103 | .783 |
| Negative performance | -.516 | .705 | .744 | .929 |
| % Teacher gender | 70.9% Female | | 67.5% Female | |
| % Teacher status | 67.2% In-Service | | 72.6% In-service | |
| % School-SES | 27.7% Low-SES | | 52.4% Low-SES | |

working in high school SES presented more positive and less negative expectations than their counterparts in low school SES. However, the findings of this last phase of analysis demonstrate that, while the probability of having more positive expectations and working in high school SES was 70%, the probability of having more negative expectations and working in low school SES was 50%.

## Discussion

The present study had two main objectives: Firstly, we designed and validated a questionnaire to measure teacher expectations in a Latin American context. Validated questionnaires addressing some of the dimensions relevant to this work – for example, positive and negative expectations of academic achievement according to area of learning – have not previously been created. Secondly, we assessed the effect of student gender and school SES, as well as teacher experience and gender on the formation of teacher expectations.

With regard to the first objective, the results of the analyses using a six-factor questionnaire offered satisfactory validity and reliability indices, allowing for an evaluation of the dimensionality of the construct, as is the usual process for this type of scale (e.g. Lacave, Molina, Fernández, & Redondo, 2015). The factors were: positive expectations of academic achievement, expectations biased according to gender and area of learning, expectations of academic achievement biased according to area of learning, positive expectations of student attitude towards learning, negative expectations of–academic achievement, and expectations of academic achievement biased by gender. Given that the reliability and validity of the questionnaire were at least within the acceptable range, it is clear that the questionnaire could be used in the future as a validated and reliable instrument to evaluate teacher expectations in Chile and possibly in other similar Latin American contexts.

The second and main aim of this study was to assess the effect of school SES, student gender and teacher characteristics (experience and gender) on the formation of expectations. The results of the MANOVA indicated that there were significant differences in teacher expectations as a function of school SES. Teachers who worked in low school SES presented less positive expectations in terms of the performance and attitude of their students and more negative expectations regarding their future careers than

those teachers working at high school SES. These findings are in line with previous studies showing that, in most cases, expectations are explained by social variables (Jussim & Harber, 2005). It is important to note, however, that these results differ from those by Carvalho and Abreu (2018), who found no significant differences between teacher expectations and student SES. The effect of student gender on teacher expectations was measured based on the scores given by teachers for dimensions relating to this bias. The results obtained were in line with previous findings, suggesting student SES and gender bias regarding the formation of teacher expectations of their students (Barbarin & Aikens, 2015; Carvalho, & Abreu, 2018; Meissel, Meyer, Yao, & Rubie-Davies, 2017; Sorhagen, 2013; Robinson-Cimpian, et al., 2014; Tobisch & Dresel, 2017). Another revealing finding was that bias motivated by student gender does not exists independently but in combination with that relating to area of learning. Teachers working at low school SES presented expectations that were biased to a greater degree by these two factors than their counterparts at high school SES. Public school teachers tend, more than private-subsidised school teachers, to expect girls to do better than boys at reading and language, and that the reverse will be true for mathematics. It is interesting that the study conducted by Del Río and Balladares (2010) into teacher expectations in Chilean pre-service teachers found no differences in expectations as a function of student gender. These differences in results may be due to the fact that their study involved hypothetical cases, which distanced the participants from the real-world classroom context.

According to our findings, teacher expectations in Chile might be biased by student characteristics. However, it is unknown whether this bias is present from the outset, or becomes stronger over the course of a teaching career. As mentioned earlier, previous studies in other countries have not focused on the effect of teachers' own characteristics on their expectations, and the contributions of the present study are, therefore, relevant. The results concerning teacher characteristics indicate that teacher expectations are not affected  by the gender of the teacher or their level of experience. In other words, regardless of the school SES in which they work or whether they are pre-service or in-service teachers, male and female teachers form the same proportion of positive and negative expectations of their students. These findings do not match those of the few studies to have addressed this issue. Watson et al. (2015) showed that the gender of teachers in New Zealand

did affect expectations of their students' performance in mathematics. Male teachers had lower expectations than their female colleagues, regardless of student gender. Similarly Watson et al. (2017) showed that male teachers presented lower expectations of both boys and girls than their female colleagues. Considering the findings of the present study, it could be inferred that the gender-related discrepancies between teachers in New Zealand and Chile may be the result of cultural differences between the two countries. Hence, transcultural studies are needed in order to provide a more accurate observation of these patterns. The results regarding teacher experience in the formation of expectations are also highly relevant as they reveal the existence of the same degree of bias for pre-service and more experienced teachers. This suggests a need and opportunity within higher education to begin working towards the eradication of bias in expectations.

It is worth mentioning that the results obtained with MANOVA were only partially confirmed using a data-driven approach. First, the cluster analysis showed that the proportion of teachers with negative and positive expectations were equally distributed by teacher gender and experience, which is in line with the non-significant effect of these two factors on teacher expectations as shown by the MANOVA. A clear tendency for high school SES teachers to have high expectations of their students (a 7 out of 10 probability), also fits the MANOVA results. However, the cluster analysis showed that teachers who have lower expectations of their students are almost equally distributed across public (52.4%) and private subsidised (48.6%) schools. These findings suggest that while negative expectations are, to a certain degree, personal to each teacher, positive expectations are affected by social constructs, in this case, school SES.

Besides the relevance of the current results, it is important to acknowledge a limitation. The fact that EFA and CFA were carried out with the same sample could diminish the stability of CFA results. Even though our sample was large enough for CFA, it was too small for the data to be split in half, so one half was be used for EFA and the other for CFA. It is important that future investigations be conducted with larger sample sizes to replicate and expand upon the present findings.

## Conclusion

The results of the present study have important implications not only for the Chilean education system, but also for research into the subject of teacher expectations in general. Firstly, the study has produced the first validated and reliable instrument to evaluate teacher expectations in Chile. Secondly, in terms of bias based on school SES, the study confirms findings from other countries concerning student SES, but only when they apply to high school SES. In other words, low expectations are not derived from the SES of the school in which the teacher works. Student gender and teacher characteristics do not play a relevant role in the teacher expectations, which seem–to be specific to Chile, so a transcultural study is needed to further understand this issue. Finally, an important contribution to the subject both in Chile and other countries was that bias is present in teachers from the earliest stages of their training, so there is the need and opportunity to effect appropriate interventions and reverse the phenomenon, particularly in the case of bias formed in a context of social vulnerability.

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Appendix 1    Items and factor loading from the exploratory factor analysis

| Items | Factors | | | | | |
|---|---|---|---|---|---|---|
| | F1 | F2 | F3 | F4 | F5 | F6 |
| Item 5: "My students want to do the best they can in class" ["Mis estudiantes están motivados por hacer lo mejor en la clase"] | **.887** | .043 | .004 | -.066 | .119 | .001 |
| Item 11: The majority of my students have a positive attitude to learning" ["La mayoría de mis estudiantes tienen una actitud positiva hacia el aprendizaje"] | **.757** | .036 | -.018 | .065 | -.065 | -.022 |
| Item 19: "The majority of my students are capable of learning the content covered in class" ["La mayoría de mis estudiantes son capaces de aprender los contenidos entregados en clases"] | -.126 | **.936** | .115 | -.039 | .123 | -.111 |
| Item 18: "The majority of my students will successfully complete this school year" ["La mayoría de mis estudiantes terminará de manera exitosa este año escolar"] | .144 | **.455** | -.047 | .033 | -.098 | .036 |
| Item 13: "My students have the necessary academic ability to achieve their year group's objectives" ["Mis estudiantes tienen las habilidades académicas necesarias para lograr los aprendizajes esperados del curso"] | .167 | **.419** | -.047 | -.021 | -.082 | .098 |
| Item 22: "My male students will achieve better SIMCE results in mathematics than in reading" ["Mis estudiantes hombres obtendrán mejores resultados SIMCE en matemáticas que en lectura"] | -.068 | .053 | **.888** | -.101 | -.065 | .043 |
| Item 20: "My female students will achieve better SIMCE results in language than in mathematics" ["Mis estudiantes mujeres obtendrán mejores resultados SIMCE en lenguaje que en matemáticas"] | .080 | -.024 | **.535** | .375 | .015 | .002 |
| Item 10: "My students will perform better in the SIMCE language test than in the SIMCE mathematics test" ["Mis estudiantes rendirán mejor en la prueba SIMCE de lenguaje, que en la prueba SIMCE de matemática"] | -.067 | .011 | .017 | **.690** | .030 | .079 |
| Item 15: "My students will be more successful in subjects that require verbal skills than in those demanding mathematical skills" ["Mis estudiantes tendrán mayor *éxito* en ramos que requieran habilidades verbales, en relación a los que requieran habilidades matemáticas"] | .050 | -.023 | -.008 | **.633** | .004 | -.060 |
| Item 12: "It is likely that my students will go on to work in non-professional occupations" ["Es probable, que mis estudiantes, en el futuro, terminen desempeñándose en ocupaciones no profesionalizadas"] | -.130 | .188 | -.078 | .077 | **.671** | .041 |
| Item 1: "There is a high likelihood that my students will go on to drop out of the education system" ["Existe una alta probabilidad de que mis estudiantes, en el futuro, deserten del sistema educativo"] | .143 | -.090 | -.017 | -.003 | **.639** | -.008 |
| Item 21: "It is likely that, within the next two years, the majority of my students will have to re-take a year" ["Es probable que en dos años más la mayoría de mis estudiantes repita de curso"] | .024 | -.236 | .089 | -.059 | **.409** | -.023 |
| Item 14: "In two years' time, 70% of my students—particularly the girls—will have an adequate level of reading comprehension" ["En dos años más, el 70% de mis estudiantes, especialmente en el caso de las niñas, tendrán un adecuado nivel de comprensión lectora"] | -.066 | -.027 | -.131 | .125 | -.035 | .765 |
| Item 17: "In two years' time, 70% of my students— particularly the boys—will have a good level of mathematical ability" ["En dos años más, el 70% de mis estudiantes, especialmente en el caso de los niños (hombres), mostrarán un buen nivel en la resolución de cálculo aritmético"] | .052 | .003 | .199 | -.134 | .069 | .628 |

Note: F1= Positive expectations of student attitudes to learning; F2= Positive expectations of academic achievement; F3=Expectations biased according to gender and area of learning; F4=Expectations biased according to area of learning; F5=Negative expectations of academic achievement; F6=Expectations biased according to gender.