What Works in Education?

Using Evidence to Improve Education

Are programmes dealing with teachers' expectations for their students effective?

Marc Lafuente Martínez

Some studies have suggested that poor student performance may be exacerbated by teachers' low expectations. This leads us to consider the extent to which teachers' initial expectations for their students' learning may change and to what extent this may help students to improve their academic performance and other personal and emotional aspects. This study is interested in the effectiveness of programmes that deal with teachers' expectations of their students. We raise the following questions: Are programmes that seek to improve and adjust teachers' expectations for their students effective? What are the characteristics of the most beneficial programmes? For which teacher and student profiles are these programmes most beneficial? Is their implementation recommended in the Catalan education system?

"For too long, education has been subject to inertia and based on traditions, and educational changes have been grounded in unfounded intuitions and beliefs. The 'What Works' movement irrupts into the world of education with a clear objective: to promote evidence based policies and practices. Ivàlua and the Bofill Foundation have come together to push this movement forward in Catalonia."

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Are programmes dealing with teachers' expectations for their students effective?

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Motivation

The Catalan education system continues to show inequality in student outcomes based on their socio-economic status and the academic results previously achieved. Several indicators point to a persistent inequality that is causing stagnation in results that may have worsened due to the economic crisis resulting from the COVID-19 pandemic [1]. In 2018, Catalan students with a high socio-economic status who took the PISA tests obtained 81 more points in mathematical competence, 76 more points in scientific competence and 78 more points in reading comprehension than students with low socio-economic status [1].

In the spheres of policy, practice and educational research, there is interest in reducing these structural inequalities by meeting social justice criteria aimed at improving the socio-economic future not only of disadvantaged individuals, but also of society as a whole. For example, there is a commitment to reduce school segregation. To this end, the Catalan Ministry of Education, the Parliament of Catalonia, the Catalan Ombudsman, most municipalities with large population centres and other bodies in the educational community have signed a pact against school segregation in Catalonia [2]. Although many of this initiative's actions have to do with aspects such as student admissions and school funding, there is also interest in implementing other measures related to teacher training that may help in the attempt to lower educational inequality.

Educational research has shown that teachers' expectations of their students' learning and behaviour can be influential in their educational outcomes. According to some meta-analyses, this influence ranges between a small [3] and a moderate [4] effect. In their original 1968 study, Rosenthal and Jacobson [5] suggested that when teachers have different initial expectations about their students' learning, the students may end up confirming those expectations through a chain of processes that recall the "self-fulfilling prophecy" or "Pygmalion effect". Pygmalion, a figure from Greek mythology narrated in Ovid's *Metamorphosis*, was a sculptor who fell in love with a sculpture he made in the form of a woman, until she became a real *woman*. Brophy and Good [6] and Wang et al. [7] state that the processes involved are as follows:

Figure 1.
Mediating processes in the self-fulfilling prophecy or Pygmalion effect.
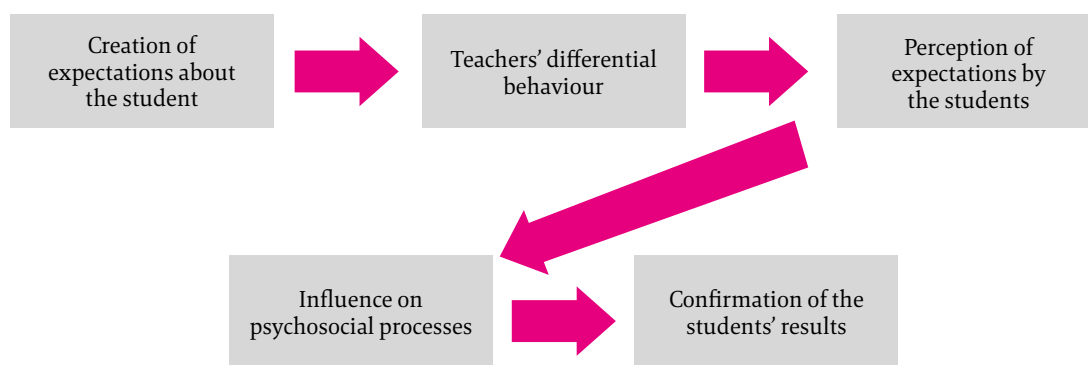
Source: Wang et al. (2018) [7].

- **Creation of expectations about the students:** teachers can establish some initial expectations about the learning of a certain student or group of students based on initial observations made in the classroom, access to the students' previous results, their appearance, etc.

- **Teachers' differential behaviour based on their expectations:** depending on teachers' initial expectations, this can give a range of learning opportunities to students, such as by asking questions and giving the floor to students who enjoy higher expectations, giving them more clues and time to respond, proposing more motivating and demanding tasks, giving them more accurate and positive feedback and so on. The opposite can happen with students for whom teachers have worse expectations.

- **Awareness of students' expectations of teachers:** students who are subject to teachers' good and bad expectations may become aware of how they are treated differently.

- **Influence on psychosocial processes:** students become aware of the different ways that teachers treat them and can internalise their expectations in both a positive and negative sense. The constellation of students' affective and cognitive variables can act for or against this internalisation. For example, students with low self-esteem and a negative academic self-concept will tend to better internalise their teachers' negative expectations, and vice versa. The quality of the interaction between students and teachers and the socio-affective climate can be improved or made worse depending on the expectations held and the students' internalisation of them.

- **Influence on student outcomes:** finally, the behaviour of students who have internalised their teachers' expectations may tend to meet them by putting in the corresponding effort and persistence in learning, stronger or weaker motivation towards learning, etc.

Research reviews of this phenomenon over the past 50 years [3] [7] [8] [9] [10] [11] show that reality is much more complex than theory. The Pygmalion effect is not a mechanical process activated if teachers have set up initial expectations for their students. Its fulfilment depends on many different factors related to the teachers, the school and its culture and the students themselves. For example, students may oppose the internalisation and fulfilment of both positive and negative teacher expectations [8].

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Although some studies have found that teachers systematically have positive and negative expectations of their students, [8] most studies suggest that teachers' expectations are in general highly correlated with students' final outcomes [3] [10]. Moreover, this correlation is higher the longer the teacher has taught that student. Therefore, it seems that the biased expectations are not the general norm in the classroom, but rather an occasional phenomenon affecting certain teachers and

students. However, biased negative expectations are likely to have a significant impact on educational inequalities because, when present, research clearly indicates that they systematically affect students with low socio-economic status and poor previous academic outcomes, with an ethnic minority and/or immigrant status, and with learning disabilities [3] [7] [8] [9] [12]. Systematically biased expectations against this type of student can be present both for the individual student considered and in any group in which this student appears such as at the level of the working group, classroom or school. Similarly, some reviews [7] [13] document gender-negative expectations of students, which would affect girls in subjects such as math and science, and boys in language.

Biased negative expectations are likely to have a significant impact on educational inequalities.
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Some studies in our country also suggest that negative expectations are held towards certain types of students [14] [15]. Although the qualitative nature of these studies does not allow us to grasp the effect size of the impact, they document systematically negative expectations associated with a particular student labelled as "not interested" that is associated with low social and economic status and this often coexists with the assignment of those students to stable skills-driven tracks described as "low outcome", which in turn produces systematically low expectations for these students.

The study of the impact of teachers' initial expectations on their students' learning does not in any way seek to blame teachers or accuse them of a lack of professionalism [8] [11]. Studies clearly show that the vast majority of teachers strive to ensure that their students improve their skills on a daily basis [10]. However, research shows that the Pygmalion effect occurs through unconscious and unintended processes and that in some cases, the lack of information about students and the social complexity of the classroom reproduces this phenomenon based on negative and biased expectations about a certain part of the student body. Documentation of the contexts in which there is a negative bias about students seeks to improve teachers' skills and help them to reverse the phenomenon if it occurs.

Focus and questions of the review

This review focuses on programmes and initiatives that seek to correct teachers' biased expectations about their students' learning and improve them overall, including improvement in communicating these expectations and adapting teaching strategies. Only programmes that focus primarily on teachers' expectations and how they communicate them to students are studied, and not the expectations of other educational actors such as peer groups or families.

Programmes that focus primarily on other aspects such as the creation of new centres or school networks, the updating of pedagogies, the creation of new curricula, the use of new materials or assessment systems, etc. are not considered, nor are those that only address teachers' expectations of their students in a residual way. Likewise, only programmes that are based on teachers' initial "natural" or "spontaneous" expectations are considered, without inducing any artificial manipulation. For example, a

study in which research staff provided teachers with false information stating that some of their students have high or low learning abilities to manipulate their expectations [5] would not be included in this review. Programmes that promote certain images of academic aptitude or intelligence by working primarily with students (for example, the growth mindset) or that work on teachers' affectivity without any obvious or explicit relationship about their expectations are not considered either (e.g., programmes focused on mental awareness or mindfulness).

In research, there is a type of initiative that aims to review teachers' expectations about their students' learning and to adress biased expectations and improve them in general by giving back practical information. This can take place through video observations or recordings of classes and external assessments of students, for example (see Box 1).

According to some meta-studies [12], programmes to review and improve teachers' expectations can be of three main types depending on the focus of the change:

- **Teacher behaviour:** the objective is to promote the use of certain behaviours associated with teachers who typically have high expectations of their students.

- **Awareness of the effect of expectations:** the objective is for teachers to be aware of the effects of having biased or inappropriate expectations for particular groups of students and to make them reflect on the consequences of these expectations on students' learning and their socio-affective processes.

- **Beliefs underlying teachers' lower expectations:** the objective is to reveal and change teachers' beliefs that support their biased expectations.

Box 1.
A programme to review and improve teacher expectations (Ding and Rubie-Davis, 2019)

Ding and Rubie-Davies (2019) [16] conducted a programme to review and improve teachers' expectations in China based on the Teacher Expectation Student Achievement (TESA) programme [17]. The aim of this programme is to promote the behaviour of teachers who typically express high expectations about learning.

The study focuses on eight foreign language teachers and their 229 students (age 14) at a secondary school. The researchers set up a training programme for four randomly assigned teachers. Four other teachers were assigned to the control group and did not receive any training.

The programme lasted four and a half months. During this time, the teachers of the experimental group were initially videotaped during one of their classes. These teachers participated in a seminar explaining the effect of their expectations on students' academic performance. They then participated in a seminar explaining and differentiating the behaviour of teachers who typically express high expectations from those who do not. A seminar was dedicated to working in depth on each of the three aspects related to the behaviour of teachers with high expectations:

• the assignment of demanding tasks (which were mostly communicative activities such as games, role-playing games, presentations, etc.; taking care to distribute tasks evenly; facilitating the task by providing clues and resources for completing it; and granting students autonomy in their decisions about learning);

• providing careful feedback (providing positive feedback on student performance and suggesting corrections; praising students to encourage positive beliefs about their own self-concept, while reasoning such praise; and listening actively to all students);

• and the establishment of personal considerations (getting closer to all students by moving around in the classroom; using courteous words and gestures with all students; and showing personal interest and strategies to correct inappropriate behaviours, like the establishment of a contract).

During these seminars, excerpts from the videos recorded at the beginning of the programme were shown and the aspects for each teacher to improve were discussed. Through analysis of the videos, the teachers found that they used more positive behaviours in their relationships with the students of whom they had high expectations than those of whom they had low expectations.

Each teacher kept a personal portfolio reflecting on the aspects that they performed adequately and the aspects of their teaching that they were committed to changing in the future. The programme ended with a session discussing all these aspects together.

Box 1. (cont.)

After the programme finished, its impact was measured by comparing the results of the learning and the self-concept of the students from the test and the control group.

The study asked the teachers about the expectations they had for their students' academic performance and stratified the students into three groups: students whose teachers had high expectations for them, students whose teachers had medium expectations and students whose teachers had low expectations. By analysing the results of the training programme based on these three groups, it was found that in comparison with the control group, the students who benefitted the most were the ones subjected to low expectations, as both their academic performance (d = 0.88) and self-concept (d = 1.12) improved with a large effect size. Students subjected to medium expectations benefitted the second-most, improving their academic performance (d = 0.82) and self-concept (d = 0.88) with a large effect size. Lastly, students subjected to high expectations improved their academic performance (d = 0.47) with a medium effect size, but no significant changes were observed in their self-concept (d = 0.02).

After the programme, it was confirmed that teachers were more attentive and respectful to all the students, especially after signs of bad behaviour. Students previously subjected to low expectations also received more recognition and more opportunities to participate in class from the teacher. A longitudinal analysis shows that students subjected to low expectations first improved their academic self-concept and then their performance.
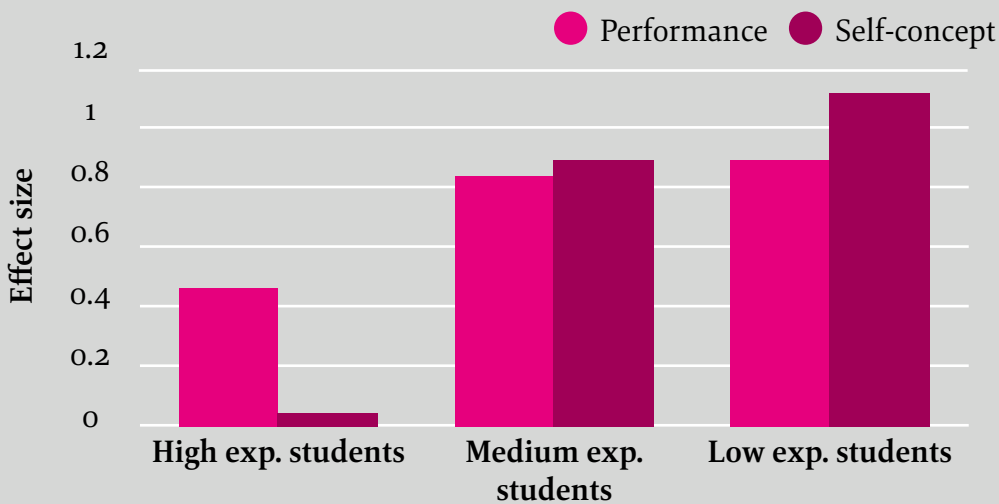

Figure 2. Magnitudes of effect in the study by Ding and Rubie-Davies (2019)

Questions considered in the review

In this review of the empirical evidence, we raised the following questions:

1. *Are programmes that attempt to improve and adjust teachers' expectations of their students effective?* The effects of these programmes on successfully changing teachers' expectations and on students' academic performance and personal and socio-affective aspects will be summarised.

2. *What are the characteristics of the most beneficial programmes?* The analysis will focus on the mediating variables that make these programmes more effective.

3. *For which profile of teachers and students are these programmes most beneficial?* A summary of factors associated with both teachers and students that appear to be most associated with the success of these programmes will be provided.

4. *Is their implementation in the Catalan education system recommended?* According to the evidence found, it will be stated whether it is appropriate to apply such programmes to the Catalan education system, together with a series of considerations or recommendations in this regard.

Review of the evidence

This review followed a systematic research procedure. First, research was conducted on reviews (both meta-analyses and qualitative reviews) produced by prestigious international organisations conducting reviews of scientific evidence such as the Education Endowment Foundation in United Kingdom and the What Works Clearinghouse in the United States. Research was then also carried out on reviews of scientific databases: Web of Science, ERIC and ScienceDirect. As a result of this first step, a significant review was found that includes both a meta-analysis and a qualitative review of 19 studies produced between 1973 and 2017. Table 1 shows the main conclusions and the effect sizes (see Table 1).

Table 1.
Reviews identified and main conclusions

Review	Number of studies included and period	Context	Type of review	Summary of key effects and factors
De Boer et al., 2018 [12]	19 studies 1973-2017	19 studies from the United States and 2 from New Zealand on improving teachers' expectations and correcting biases	Meta-analysis and narrative review	**Teachers' expectations after the programmes: g = 0.38** **Students' academic performance after the programmes: g = 0.3** Half the studies follow a combination of behavioural intervention and awareness-raising. There are no differences on effectiveness according to the type of programme. Characteristics of the most successful programmes: - The teachers are active in designing and implementing their own classroom strategy and are supported by training staff. - The programmes manage to make teachers aware of the need for change. - Based on previous observations, specific and individualised feedback is provided to each teacher on the different ways they treat each type of student.

Source: author's creation. In bold are the statistically significant results (CI (confidence interval) = 95%. g = Hedges' estimator). Values of around 0.2 or lower indicate a small effect; values of around 0.5 show a medium effect and values of around 0.8 or higher demonstrate a large effect.

To update and expand on this review, research was conducted on primary studies published in the last 10 years in the same sources mentioned above. Both experimental and quasi-experimental studies with quantitative measures using a control group were included. In all the reviewed studies, the bibliographic references were reviewed to identify possible studies not previously found. A total of eight valid studies were found, two of which were already in the review identified in the previous research effort. The main findings were collected and the effect size was calculated if it was not included in the study (see Table 2).

Table 2.
Primary studies identified and main conclusions

Reference	Type of programme and period	Subjects and context	Summary of key effects and factors
		Experimental designs	
Ding and Rubie-Davies, 2019 [16]	Behaviour modification + Awareness of the effects of expectations Two seminars and two work sessions for 18 weeks	Eight teachers and 229 students of foreign language (English) in secondary school (age 14) in China	Compared to the control group: Students subjected to low expectations benefit the most: **academic performance: d = 0.88; self-concept: d = 1.12** A longitudinal analysis allows us to see how improving self-concept leads to an improvement in performance, not the other way around. Students subjected to medium expectations: **academic performance: d = 0.82; self-concept: d = 0.88** Students subjected to high expectations: **academic performance: d = 0.47**; academic self-concept: d = 0.02
Neuenschwander et al., 2021 [18]	Behaviour modification + Awareness of the effects of expectations + Beliefs underlying biased expectations Twenty-four weeks	66 teachers and 860 students of mathematics and language (German) in 4th, 5th and 6th grade in primary school in Switzerland	**Mathematics teachers' expectations for immigrant students: d = 0.22** Mathematics teachers' expectations for students with low socio-economic status: d = 0.02 Teachers' expectations in German for immigrant students: d = 0.03 Teachers' expectations in German for students with low socio-economic status: d = 0.03
McDonald and others, 2016 [19] Rubie-Davies et al. 2015 [20]	Behaviour modification + Awareness of the effects of expectations Four work seminars + follow-up later during the course (Thirty-six weeks)	84 teachers and 2408 primary school students (aged 6 to 13) from New Zealand	**Mathematics performance: d = 0.24** Reading performance: d = 0.04 Increases student autonomy by creating flexible groups where students decide on learning activities and the peers with whom they want to work.
Cheon et al. 2019 [21]	Behaviour modification Three three-hour seminars + practical follow-up	32 high school physical education teachers and 2,313 students (age 15) in South Korea	Higher results for teachers who promote autonomy and intrinsic motivation in communicating expectations. Student results: **Perception of autonomy: d = 0.3** **Perception of teacher control: d = −0.48** **Goals for developing one's own skills: d = 0.19** **Physical self-concept: d = 0.24** **Problematic relations: d = −0.26**
Rubie-Davies and Rosenthal, 2016 [22]	Behaviour modification + Awareness of the effects of expectations Four seminars and follow-up during the course (thirty-six weeks)	65 teachers and 1,278 primary school students (aged 7 to 12) from schools in New Zealand	**Mathematics performance: ES = 0.086** **Boys' performance: d = 0.05** **Girls' performance: d = 0.23**

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Table 2. (cont.)

Reference	Type of programme and period	Subjects and context	Summary of key effects and factors
Ritzema et al. 2016 [23]	Behaviour modification + Beliefs underlying biased expectations Different activities to correct and improve expectations about students with a total duration of one course (thirty-six weeks)	35 teachers and 361 2nd and 3rd grade primary school students in the Netherlands	Teachers improve expectations for 25.4% of students. **Mathematics performance of students with improved teachers' expectations: d = 0.80** The effect is positive on students with low initial results, but negative on students with high initial results.
Quasi-experimental designs			
Jahan and Mehrafzoon, 2019 [24]	Behaviour modification + Awareness of the effects of expectations Ten one-hour sessions	30 secondary school students in Iran	**Student involvement: d = 1.59** **Student self-efficacy: d = 1.38**

Source: author's creation. In bold are the statistically significant results (CI (confidence interval) = 95%. d = Cohen's estimator. ES = effect size, as given at publication). Values of around 0.2 or lower indicate a small effect; values of around 0.5 show a medium effect and values of around 0.8 or higher demonstrate a large effect.

Are programmes that try to adjust and improve teachers' expectations for their students effective?

First, the available evidence for this is clearly quite meagre, which makes us cautious about the conclusions that we can draw today and leads us to recommend conducting further studies on this issue, especially within our cultural sphere, as no study has been identified in southern Europe.

The review of studies indicates that programmes that promote a general review and improvement of teachers' expectations for their students **have a slight effect on both improving teacher expectations and subsequent student academic performance**. The meta-analysis by De Boer et al. [12] indicates that such programmes improve teachers' expectations by a slight effect size: 0.38. The authors also conclude that the students' academic performance improves after the programmes with an equally slight magnitude: 0.3. Both measurements are statistically significant. However, these results are not uniform across the different studies, which leads to the conclusion that the effectiveness of this type of programme is not always guaranteed and that it is therefore sensitive to the conditions of implementation and various contextual variables. Likewise, the achievement of slight effects reflects that the changes sought among both teachers and students are difficult to achieve.

Programmes that promote a review of teachers' expectations for their students have a slight effect on both improving teacher expectations and subsequent student academic performance.

The review of primary studies backs up these conclusions. The average of the impact values has a slight effect, obtaining a great variability of results, from great sizes [23] [24], to null and statistically insignificant effects [18] [20] [22]. The reviewed studies document positive effects on teachers' expectations in mathematics [18]. The identified evidence also shows positive results on students' academic performance in mathematics [20] [22] [23] and language in primary school [25]. In secondary school,

there is documented improvement in various areas [26] [27], such as language [27], foreign languages [16] and history [8]. One study [27] shows an increase in student retention in the following year.

The impact of these programmes is usually measured just after they end, so its impact is unknown over the medium and long term. According to one study [27], the positive effect measured in the short term is not sustained one year after the programme ends.

On potential negative effects, one study [23] highlights that the programme later lowers the academic performance of students with high initial outcomes for whom the initial expectations have changed (see Box 2). Another study [27] documents an increase in absenteeism after the programme.

However, some studies document that these programmes have a positive impact on various personal and socio-affective factors for adolescent students. For example, a positive impact is reported on their self-concept [16] [22], their self-efficacy and involvement [24], their perception of autonomy and the establishment of goals for developing their own skills [21] and a decrease in problematic relationships and [21] disciplinary problems [27].

Some studies document that these programmes have a positive impact on various personal and socio-affective factors for adolescent students.

What are the characteristics of the most beneficial programmes?

The programmes analysed often combine more than one of the three following aspects: changes in teacher behaviour, awareness-raising about the effect of teachers' expectations and challenging of biased beliefs. According to the review by De Boer et al. [12], the combination of behavioural approaches and awareness-raising about the effects of the expectations is the most common (half the programmes studied in that review). According to that review, **no differences can be established based on the aspects involved**. The identified primary studies also confirm this assessment: half the studies combine a programme aimed at changing teachers' behaviour with challenging their biased beliefs towards some students.

While we cannot confirm which combination is the most effective, our review of the evidence suggests that the aspect based on **teachers' change in behaviour is key to these programmes.** For example, one factor of success is to actively involve teachers in designing the changes that they will implement in the classroom in the future to express more favourable expectations to all students and create optimal learning opportunities for all [12]. Therefore, the elements of change are not imposed, but are planned by the teachers themselves with the support of the training staff in these programmes. Another key ingredient of effective programmes is a focus on their classroom and not on general situations. Effective programmes are

One factor of success is to actively involve teachers in designing the changes that they will implement in the classroom.

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not really based on theory or on showing general research results, but rather on **using the specific results that certain students in the classroom have achieved in other programmes or in evaluations conducted by other professionals** to help teachers to change their behaviour. The most effective programmes **give teachers specific feedback on how they act differently depending on the type of students in their classroom, based on previous observations** made about their daily teaching. The most effective programmes manage to create a need for teachers to change, which can be achieved by providing information about their biased expectations and the consequences they may have on their teaching and future student outcomes.

The most effective programmes manage to create a need for teachers to change.

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The duration of the programmes is quite variable and the literature mentions programmes ranging from one week [28] to two and a half years [29]. The small number of studies **does not enable us to evaluate the most effective duration**, but we can say that most of the studies reviewed include a series of seminars (usually four that last between two to four hours) spaced out through a quarter, followed by monitoring the teacher's performance throughout the year and a closure in the end. As such, these **programmes usually stretch across two or three quarters of the year**.

For which teacher and student profiles are these programmes most beneficial?

Regarding the characteristics of teachers, studies have documented positive and significant effects on the correction of biases and the rise in expectations of **secondary school teachers in initial education** [30]**, and active primary school teachers in mathematics** [18] [23] **and in various fields** [31].

Studies have documented positive and significant effects on the correction of biases and the rise in expectations of secondary school teachers in initial education and active primary school teachers in mathematics and in various fields.

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Although some studies suggest that teachers' low expectations stabilise over time [8], much of the literature [3] [32] [33] indicates that biases are more common in teachers who start teaching students they do not know, and that those biases diminish as teachers become better acquainted with the possibilities and limitations of all their students. The small number of programmes carried out and the information they provide do not clarify whether teachers who start teaching students they do not know benefit most from these programmes.

The students who benefit most from these programmes, improving their academic performance and other personal and socio-affective factors the most, have **low socio-economic status** [25] [26]**, are ethnic minorities** [27] **and are of immigrant origin** [18]. Studies also show that students who benefit the most from these programmes **were subjected to the lowest expectations before they started** [16] [23].

Regarding gender, one study shows that **programmes focused on mathematics benefit girls more than boys** [22]. These results are in line with the scientific literature on the Pygmalion effect, indicating that when there are biases in teachers' expectations and different treatment of students in school, they are often associated with key variables such as the students' socioeconomic status, ethnicity, immigrant origin or gender [12] [8] [7] [9] [3] [13] [7].

The students who improve their academic performance and other personal and socio-affective factors the most have low socio-economic status, are ethnic minorities and are of immigrant origin. Students who benefit the most from these programmes were subjected to the lowest expectations before they started.

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Can we recommend their implementation in the Catalan education system?

Based on the results shown in this review, we can conclude that **programmes aimed at correcting biases and improving teachers' expectations for their students can be perfectly included within the Catalan education system's teacher training** for the purpose of improving teaching skills and subsequently boosting students' learning outcomes. In this regard, we must highlight some important points:

- **It is a poorly-studied type of programme for which there is scarce accumulated evidence.** Therefore, we recommend conducting more studies, especially experimental and longitudinal studies with diverse populations to more reliably establish the effectiveness of these kinds of programmes. Over the next few years, the accumulated evidence may change the meaning of the conclusions of this report.

- **The effects of such programmes are generally small on the general population of teachers and students.** Research to date has had a slight effect on improving teachers' expectations and an equally small effect on students' learning outcomes and other personal and socio-affective processes. Therefore, it does not seem to be a programme that can produce by itself a major impact in terms of equity of the education system. The pursuit of greater equity in the education system depends on the implementation of a much broader programme that includes other types of measures in combination with it.

- We recommend this type of programme because even though it has a slight effect on the general population, **it seems that the greatest effects are concentrated in the population with the worst previous educational outcomes**, students with low socio-economic status, members of ethnic minorities and students of immigrant origin. Therefore, **this type of programme seems appropriate for teachers who teach in classrooms or schools with a significant proportion of such students.**

We recommend this type of programme because it seems that the greatest effects are concentrated in the population with the worst previous educational outcomes.

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- The research suggests that not all types of programmes work the same way. It is important to have programmes with a component **focused on changing the teachers' behaviour.** Thus, the most effective programmes externally evaluate

the students' learning and notify the teachers of their results to remove biases, provide the teachers with personalised feedback based on previous observations and the external student evaluation and give the teachers an active role in designing and implementing changes in their teaching practice. Moreover, programmes that focus on theoretical content and deal with the Pygmalion effect from a general perspective do not seem to yield good results. Therefore, we recommend implementing programmes that include this external student evaluation, provide personalised feedback and give teachers an active role in deciding which changes to implement in their daily teaching practice.

- The research documents positive results in both primary and secondary education, as well as in teachers in initial education and active teachers. Therefore, **we believe it is feasible to study the implementation of such programmes in both primary and secondary school.** The programmes can also be adapted to be implemented in the teachers' initial education (undergraduate or Master's degree and immersion of residency programmes) as well as in the continuous development for active teachers with significant teaching experience.

The programmes can also be adapted to be implemented in the teachers' initial education as well as in the continuous development for active teachers.

- Much of the literature on the Pygmalion effect suggests that biases in teacher expectations do occur, especially during the first weeks and months when teachers teach students they do not know. Although we cannot confirm this conclusion based on the evidence in the programmes, it seems more prudent to **recommend that this type of training take place during the first quarter, when teachers teach students they do not know.**

Box 2.
A programme to correct biased expectations with the use of student evaluation results (Ritzema et al., 2016)

Ritzema et al. (2016) [23] ran a programme in the Netherlands for 35 2nd and 3rd grade teachers. The study focused on the effects of teachers' expectations for 361 students, and how those expectations changed through the feedback provided throughout the programme.

At the start of the programme, the teachers built a rubric with five different levels of achievement on the content and skills of their mathematics curriculum for that course: below minimum, minimum, basic, competent and advanced. Teachers were given a set of 30 standardised mathematic assessment questions and chose the questions that students should be able to solve for the last four levels. According to this rubric, the teachers then had to specify the level of achievement that they thought each student would reach at the end of the year (explanation of the initial expectation).

Box 2. (cont.)

The students solved a set of 30 maths questions and their results were given to the teachers so they could compare and identify differences between each student's actual results and the expectations they initially had for them. The teachers worked collaboratively and each shared their main conclusions. The teachers also proposed specific teaching and socio-emotional strategies to support certain students.

After obtaining all this information, each teacher had to assign a level of achievement for each student at the end of the year, maintaining or changing the initial expectation. At this point, the programme was still in the first quarter and the students' final results were requested in May or June.

The teachers improved their expectations of 25.4% of the students and their expectations fell for 2.9% of the students. At the end of the year, the teachers used the same 30 questions from the beginning of the year to assess the students in mathematics and compared both groups: the students for whom their expectations had improved and the students for whom their expectations had remained the same.

The study finds that students for whom teachers' expectations had improved got better results at the end of the year than in the first maths test and the effect size is considered large (d = 0.80). The study distinguishes between students with the lowest levels of achievement and those with higher levels. Low-achieving students whose teachers' expectations for them had improved performed better than those for whom their teachers' expectations remained the same. However, the analysis of the students with good results shows that students for whom their teachers' expectations did not change got better results than students for whom their expectations improved.

Summary

Programmes aimed at correcting biases and overall improving teachers' expectations for their students have a slight impact on improving those expectations and an equally slight impact on the students' academic achievement. Some studies report a positive impact, not only in terms of learning outcomes, but also in terms of students' personal and socio-affective aspects such as their self-concept or self-efficacy and a decrease in conflict in their relationships. Research on this type of programme is very limited and we recommend conducting further studies that confirm or reject this impact in the future. Studies on these types of programmes yield mixed results, which suggests that their effectiveness depends on their main constituent parts.

It is important that these programmes seek to change teacher's behaviour, provide external information about their students' potential to learn, provide classroom observations and give feedback on possible ways that teachers may treat students differently so they can correct them. It is equally important to give teachers the

opportunity to design and implement the changes in their teaching practice that they deem necessary. These programmes usually follow up on the teachers over the course of two or three quarters. Some studies document positive results in several areas in both primary and secondary school. A positive impact is also documented for teachers in initial education and active teachers with long experience in the classroom.

The review of studies on the Pygmalion effect prompts us to recommend this type of programme during the first quarter, when teachers teach new students.

Strengths	Limitations
• In general, programmes that correct teachers' biases and improve their expectations are effective. • The programmes show benefits for both teachers (by improving expectations) and students. • The programmes are effective both for teachers in initial education and active teachers. • The programmes show benefits in students' academic achievement and certain personal and socio-affective aspects. • Studies have documented these programmes' effectiveness in both primary and secondary schools. • The programmes target students with worse previous outcomes and low socio-economic status since their effectiveness is focused on these kinds of students.	• The number of studies on programmes that correct teachers' biases and improve their expectations is very limited. • The programmes have a slight effect on the teachers' expectations and the students' learning. • It does not seem to be a type of programme that guarantees on its own a great impact on boosting equity in education. • The studies often show mixed results and depend on compliance with certain factors. • The programmes require personalised processes (e.g., prior observations, feedback, external student evaluation) and follow-up. • The programmes require time to be implemented and followed through, as they often extend over two or three quarters. • These programmes are especially likely to be effective when focusing on teachers who begin teaching new students.

Notes

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