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# 7 Applying social psychology to the classroom

PASCAL HUGUET<sup>1,\*</sup> AND HANS KUYPER<sup>2</sup>

## Introduction

The classroom is the core unit of our educational system. It also illustrates many common social-psychological concepts and phenomena. Whenever we bring groups of people together for the purpose of learning, we have the opportunity to apply social-psychological principles that will further our educational goals. Applying these principles to the classroom may help increase students' commitment to learning, make their attitudes towards school more positive, reduce their feeling of failure and related negative affects or emotions, improve their level of aspiration as well as their grades, and much more. Clearly, education is – at least in part – applied social psychology.

In the past three decades, more and more researchers contributed to bridging the gap between social psychology and education, resulting in the emergence of a new scientific area, the so-called 'social psychology of education', 'educational social psychology' or sometimes even 'social educational psychology'. Is this area merely social psychology applied to a particular domain of interest? Or is it a subdiscipline of the field of education, looked at from the vantage point of the social psychologist? As noted by Feldman (1986), the most appropriate answer is that it represents an amalgamation of the two fields; it is not merely social psychology, nor is it simply education. Whatever it is called, this new area represents an interface of the two fields, which has produced a broad range of theories, research and data that speak to the interests of educators and psychologists.

Our purpose here is not to describe all the current themes of interest that characterize this interface. This would be impossible in only one chapter. Instead, our purpose is to focus on a limited set of social-psychological concepts and phenomena in relation to a major component of the classroom: evaluation. Like it or not, evaluation is as much a part of education as is learning. The classroom, in particular, is a place for multiple evaluations, whether positive or negative. Many of these evaluations are provided by the teacher, but they can also be ‘self-evaluations’, based on interpersonal comparisons the students are constantly making with each other. Today, there is ample evidence that these social comparisons contribute to students’ academic achievements. But exactly what does ‘social comparison’ mean, what do we know about it and about its consequences in the classroom?

Students’ ‘theories’ of intelligence are of particular interest here as well. Over time, students come to believe that their performance in a wide range of tasks is or is not narrowly constrained by innate attributes, and that they can or cannot change their level of intelligence. Are such beliefs another significant determinant of students’ academic achievement?

Likewise, over time, students develop positive or negative views about their abilities in such-and-such an academic domain (e.g., math), which become an integral part of their ‘academic self-concept’. Does this self-concept also make a difference, and how?

Students belong to social groups and may sometimes suffer from the negative stereotypes associated with these groups. Are these negative stereotypes a real problem for students, and why?

Finally, how students see themselves in the context of the classroom and how they behave in this context depend, at least in part, on the ‘classroom climate’. But exactly what does ‘classroom climate’ mean, and exactly why does this concept also matter?

As we will see, each of these research lines provides convincing evidence that basic social-psychological principles play an important role in ordinary classroom circumstances. Their practical implications will be presented, and some recommendations will be made with regard to the struggle against academic failure and dropping out of school.

## **Social comparison**

According to a widely accepted definition, **social comparison** is ‘the process of thinking about information about one or more other people in relation to the self’ (Wood, 1996, pp. 520–521). The theory itself was formulated in 1954 by Festinger. According to this famous social psychologist, most people want to evaluate their abilities and opinions, especially when there is no ‘objective reality’ (i.e., when a given ability or opinion cannot be measured or evaluated via objective means). In this case, people rely on ‘social reality’, by comparing their own abilities and opinions with those of others. Nowadays, it has become clear that people also compare themselves on many other types of dimensions. Chapter 11, for instance, shows the use of social comparison theory in the domain of mental health. In daily life, people are more or less free to engage in social comparison or not, but in some cases social comparison is almost forced (with sometimes important consequences on task performance and attention, see Monteil & Huguet, 1999; Huguet, Galvaing, Monteil & Dumas, 1999, Huguet, Dumas & Monteil, 2004). For instance, when the salary of a company manager appears in the news, it is difficult not to make a comparison with your own income. The class context clearly is a situation where social comparison is pervasive. Often grades are read out loud and clearly by the teacher, so that each student knows exactly where he/she ‘belongs’.

Some studies have shown that social comparisons occur even in the preschool years, during which they facilitate children’s adaptation to the rules at stake in their classroom. It is

indeed through comparing the way the nursery school teacher reacts to their actions and to the actions of other pupils that young children learn how to obtain certain rewards (praise, encouragement) and how to avoid certain punishments (scolding, withdrawal of privileges). In doing so, children learn the prevailing norms and values of this new environment – their playgroup – and, more generally, their nursery school.

Ruble and her associates have done careful and detailed observational studies of the development of interest in social comparison and social comparison capabilities in the primary school years and beyond. These have led Ruble (1983) to suggest that the capabilities necessary for making social comparison inferences about oneself (i.e., drawing conclusions about one's ability level in a given domain on the basis of comparison information) seem to be absent before the age of six or seven. After that, social comparison inferences become part of a pupil's self-knowledge. Children therefore pay an increasingly greater amount of attention to academic achievement and to the grades obtained by their peers, so they can rank themselves with respect to others in the various subject matters, a behavior that becomes especially prominent at the age of nine to ten (Dumas, Huguet, Monteil, Rastoul & Nezlek, 2005).

Depending on what they discover, students may experience the classroom as a pleasant or a frightening place. It has become clear that social comparison processes taking place in the classroom can trigger both positive and negative affects (e.g., pride versus jealousy; see Buunk, Kuyper & Van der Zee, 2005). In his influential chapter on social comparison and education, Levine (1983) offered evidence that the potential for damage to children's self-esteem is high in the classroom setting, as is the potential for children to adopt artificially low conceptions of their own abilities. There are many cases in which students may even want to avoid social comparison. In the classroom, however, the norms frequently require disclosure of one's own

achievements in a pattern of reciprocal disclosure with others (as in many other group settings). Fortunately, the discovery that a classmate's achievements surpass one's own is not necessarily painful or negative. It can also have a beneficial impact on one's performance. Observing another person who masters a task can reveal useful information on how to improve, a phenomenon referred to as 'learning by observation' or '**observational learning**' in the psychological literature. Seeing a classmate succeed may also increase the motivation to improve. As noted by Blanton, Buunk, Gibbons and Kuyper (1999), however, this latter reason is not as straightforward as the first, because it may be motivating to see other students doing better than oneself at a task for a variety of reasons. First, individuals may come to identify with their more successful comparison targets, leading to imitation of their successful actions. Second, seeing others succeed may lead individuals to set higher personal standards for evaluating their own success, which can motivate efforts towards these new and more challenging goals. Finally, observing others doing well can endow individuals with a sense of their own potential, and this can raise self-confidence and feelings of **self-efficacy** (i.e., students' judgement of their own capabilities with regard to a specific task). There is evidence today that the belief that one is able to perform a certain (new) task plays an important role in academic achievement. Schunk and colleagues, for example, found that feelings of self-efficacy made unique contributions to increasing academic attainment over and above various task instructions (see Schunk, 1989).

Festinger (1954) stated that there is a preference for comparison with *similar* others. However, there has been much discussion among social comparison researchers about what exactly Festinger meant by 'similar'. Nowadays, it is widely accepted that one should consider similarity on '**related attributes**', that is, attributes that are related to the performance of the task at hand (Goethals & Darley, 1977). If a young male adult wants to evaluate his running speed

accurately, he should compare himself with a *male* of about *his own age* who has about an *equal 'athletic posture'*, because these three attributes are related to running speed. He should not compare himself with his grandmother. The preference to compare oneself with others who are similar on related attributes is at the core of the **similarity principle**. In the case of physical as well as intellectual abilities, Festinger (1954) suggested that social comparison follows a **unidirectional drive upwards**. Applied to the classroom, this suggests that most students prefer to compare their grades (among other things) with peers who generally are *slightly* better than themselves (while being relatively similar on related attributes). This is, in fact, what was concluded in two field studies (Blanton *et al.*, 1999; Huguet, Dumas, Monteil & Genestoux, 2001b). As we shall see, these studies offered several results which we must recognize if teaching methods are to be optimized.

### **Upward social comparison in the classroom**

In Blanton *et al.*'s (1999) field study, Dutch secondary school children (age thirteen) filled in a social comparison questionnaire at the end of the second term (T1). They were asked to write the name of the classmate with whom they preferred most to compare their grades (comparison choice) in each of seven school subjects (math, biology, geography, etc.) and to rate their own performance level in these courses in relation to their classmates' performance level (comparative evaluation). The schools provided the grades of all students on the end of the second term (T1) school report and on the end of the year school report (T2). Several results are of particular interest here.

First, although all classes were coeducational, a vast majority of students (more than 90 per cent) deliberately compared themselves with students of their own gender. In a certain sense,

this is another manifestation of the similarity principle. However, in this case, the similarity is on a dimension that is not (necessarily) related to grades.

Second, a comparison between the T1 grades of the students themselves and those of their comparison targets showed that, on average, the target's grades were slightly higher than the own grades, which is in line with Festinger's predictions. A supplementary analysis of the grades showed that somewhat more students had nominated a comparison target with a higher grade (upward comparison) than with a lower grade (downward comparison). Taken over the seven courses, 44% of the social comparison choices were upward, 36% downward, whereas the other 20% were with a classmate with the same grade (lateral comparison). The supplementary analyses further showed that, although the range of the differences (own grade minus target's grade) was large, the grades of the upward targets were on average somewhat more higher than the grades of the downward targets were lower, in relation to the own grades.

The point of Blanton et al's study that has attracted most attention was the prediction of the T2 grades in multiple regression analyses, using the own T1 grades, the T1 grades of the comparison targets and the comparative evaluations as predictor variables. It appeared that, for each subject all three regression coefficients were positive. As could be expected, the coefficients for own T1 grade were by far the largest. The coefficients for the comparative evaluations and for the comparison target's T1 grade were small, but significant, so that it could be concluded that a favorable comparative evaluation and upward comparison can be beneficial for future achievement. Furthermore, choosing to compare upwards did not lower students' comparative evaluation, i.e., how the students evaluated their relative standing in each subject in their class. Huguet *et al.* (2001b) replicated and extended Blanton *et al.*'s findings in a number of important ways in a study of French students of the same age. First of all, Huguet et al. offered a



more detailed record of comparison choices. In Blanton *et al.*'s study, only the students' first nominations for each subject were analyzed. As Huguet *et al.* (2001b) pointed out, however, students probably compared their grades with those of a variety of other students. It could be, therefore, that social comparison with a more successful classmate did not lower students' comparative evaluation because they made up for a painful experience with a happy one, through the use of a **downward comparison** (i.e., comparison with a worse-off classmate) in their second choice. For this reason, Huguet *et al.* (2001b) included two comparison choice measures in each of seven school subjects (resulting in 14 comparison choices). The majority of students (above 60 per cent), however, compared upwards on the *two* choices in most subjects. Consistent with Blanton *et al.*'s own findings, higher grades were associated with higher comparison-level choices, and choosing to compare with someone who outperformed them in a course did not leave students feeling relatively less able in that course.

Blanton *et al.* (1999) reported indirect evidence that the individuals nominated as comparison targets were important in the lives of the students. Consistent with this, Huguet *et al.* (2001b) also found that students engaged in upward comparison with psychologically close others (i.e., their best friends, as Mussweiler & Rüter, 2003 would also expect). According to Buunk and Ybema (1997), individuals generally avoid identification with worse-off others (with whom they contrast themselves – especially when their self-esteem is threatened) and try to identify with others doing better (and see these others as similar to themselves). Also consistent with this, and with the hypothesis that upward comparison is motivated by a desire for self-improvement (Wood, 1996), Huguet *et al.* (2001b) found that most students reported that their performance in almost all subjects might become closer to that of their slightly more successful comparison targets in the future.

Lubbers, Kuyper, and Van der Werf (2009) explicitly tested the hypothesis of Mussweiler and Rüter (2003). In their research not only social comparison choices were obtained, but also sociometric choices (“Whom of your classmates do you like most?” and “With whom of your classmates do you meet most regularly outside school?”). If two classmates had nominated each other on both questions, their relation was considered as ‘friendship’. Using this definition, 35% of the students did not have a friend in their classroom, 43% had one friend, 18% two friends and 4% three friends. An analysis of the comparison choices showed that 43% were reciprocal, i.e. two students nominating one another as comparison target. Furthermore, of the students who had at least one friend in their classroom, 78% picked a friend as a comparison target, 17% chose a classmate with whom there was some liking (at least one, but not all four of the sociometric relations fulfilled) and only 5% chose a non-friend. This means a strong confirmation of the friendship hypothesis. Choosing a friend is a ‘routine’ social comparison (Mussweiler & Rüter), whereas choosing a non-friend can be considered ‘strategic’. It should be realized that, in case of reciprocal comparison choice, the degree of ‘upwardness’ of the one student is equal to the degree of ‘downwardness’ of the other. Another complication is that the similarity principle that is important for the choice of comparison targets is also important for the emergence of friendships – see also Chapter 6, especially the similarity-attraction hypothesis.

## **Students’ ‘Theories’ of intelligence and academic self-concept**

So far, we have argued that promoting upward comparisons is a valuable advice for teachers. In order for upward comparison to be a resource for change, however, the students making the comparison obviously need to believe that they are able to change. Without a mutable self-image, students can respond to upward comparisons only by feeling inferior, or by defensively discounting the social comparison domain or target.

## **Entity versus incremental theory of intelligence**

Dweck's impressive work on people's entity versus incremental theories of intelligence is of particular interest here (see Dweck, 1999, for a review). '**Entity theorists**', she reasoned, are people who believe that intelligence is an innate and stable property of a person. This typically leads the entity theorists towards the expectation that their general performance on a wide range of tasks is narrowly constrained by innate attributes. On the contrary, '**incremental theorists**' typically believe that performance can usually be improved by effort.

Consistent with this, Dweck and colleagues' research has shown that incremental theorists are much more resilient and optimistic in the face of failure than are entity theorists, including when failure comes from an upward social comparison episode. Dweck's research has generated robust effects simply by telling subjects about one of the two theories, either indirectly through stories or directly through bogus journal articles. Longer-term changes lasting several months have been produced merely by teaching subjects about incremental theories of intelligence and explicitly encouraging them to believe that their skills can improve.

Henderson and Dweck (1990) assessed students' theories of intelligence and confidence in their intelligence as they entered year eight and before they had received any formal performance feedback. Students were asked to rate the extent to which they agreed or disagreed (from six-point scales ranging from 1, 'strongly agree', to 6, 'strongly disagree') with a series of sentences, such as, 'you have a certain amount of intelligence, and you really can't do much to change it', or 'no matter who you are, you can change your intelligence a lot'. On the confidence measure, students chose between series of paired statements, one expressing low confidence and the other high confidence, for example, 'I usually think I'm intelligent' versus 'I wonder if I'm

intelligent'. Then, students' answers were examined in relation to their past grades (when they were in year seven) and their performances as year eight pupils.

Among the students with an entity theory, those who had done poorly in year seven continued to do poorly in year eight, and many of those who were high achievers in year seven were now among the low achievers. More surprising, this decline from high to low academic standing was mainly due to the students who had *high* confidence in their intelligence, indicating that confidence in intelligence is in fact problematic within an entity theory. In contrast, students with an incremental theory showed a clear improvement in their class standing. In general, those who had done well in year seven continued to do well. Many of those who had been among the low achievers in year seven were now doing much better, often entering the ranks of the high achievers.

These fascinating findings have some implications for our previous considerations on social comparison choices. They suggest that, in order to allow the poor or less capable students to learn from their more successful others (i.e., upward comparison targets), one should encourage them to see their abilities as malleable rather than fixed. Dweck has found that teachers can make a substantial difference by avoiding ability praise (e.g., 'you're very clever!'), which suggests the presence of innate attributes, and substituting effort praise ('you worked very hard on that!'). Students may also be exposed to the success stories of peers who initially struggled with a topic, but went on to master it.

These additional advices are of critical importance. Even students with high opinions of their ability would quickly disengage from a difficult task unless they also believed that their ability could improve. Over time, the entity theorists may disengage from all activities that in fact simply require effort, and thus their academic self-concept may suffer. As reported below,

an academic self-concept that is ridden with failure can, in turn, have huge negative effects on task performance.

### **Academic self-concept of failure and performance**

In Huguet, Brunot and Monteil's (2001a) quasi-experimental research (see Chapter 4 about the notion of quasi-experiments), students in year seven and year eight who were either doing well or failing in mathematics were given 50 seconds to study a complex, rather abstract geometric figure. They then had to reproduce the figure from memory on a sheet of paper (see Figures 7.1 and 7.2). Before beginning the task, they were told that their ability in either geometry or drawing was being evaluated. The children were randomly assigned to one or the other of these two conditions. Their performance was then assessed by judges who had no knowledge of the experimental conditions and of the students' ability level. The aim of this relatively simple study was to show that students' performance is closely tied to their self-representations in a given discipline. If simply mentioning geometry activates memories of failure, can this hinder their capacity to store and retrieve information?

The answer is a definite 'yes' (see Figure 7.3). In the geometry context, the poor students did far less well than the good ones, whereas in the drawing context, the poor students did so much better that they equaled the performance of the good students. Given that the task was exactly the same in the two experimental conditions (geometry versus drawing), it was the self-representations the children had constructed over time that proved to be the determining factor.

This study shows the strong impact of self-representations on cognitive output, which, as we can easily see, hinges on much more than just individual abilities. In our example, the required abilities rely on cognitive processes thought to be the expression of strictly neurobiological 'givens' (i.e., visual memory, visuospatial perception and organization).

Neuroscience enthusiasts who advocate a ‘hard’ kind of science will see in these results a reason for avoiding a sometimes excessive ‘biotropy’ (i.e., an overly biological perspective; see also our section ‘applied social psychology in context’).

Let’s take this a little further. If simply mentioning geometry suffices to lower the performance of students who do not excel in that area, then it follows, at a more general level, that a student’s academic past can at least partially account for his/her present difficulties (Monteil & Huguet, 1999; Selimbegovic, Régner, Sanitioso & Huguet, 2011). The more often a student fails, the more the context of that failure (not only the subject matter but also the person teaching it) acquires an autobiographic significance for that student that interferes with achievement, causing a loss of interest over time that cannot be readily ascribed to a lack of motivation in the ordinary sense of the term. Very rapidly, all the necessary conditions are set up – again, right there in the classroom – for a situation in which poor students acquire a reputation of being stupid or of low ability, bringing them a little bit closer each day to dropping out of school early.

However, saying that bad reputations ‘weigh heavy’ is not enough to account for their impact. In reality, their effect on cognitive functioning resides in the fact that they lend ‘instant accessibility’ to a self-concept of academic failure and the string of negative emotions it entails. What does instant accessibility mean here? Try to remember what you ate for dinner two days ago. The answer doesn’t pop right up. It’s available in memory, so you can come up with it, but only after some effort; it is obviously not readily accessible. Try now to remember your date of birth. You’ve retrieved it even before you finish reading this short sentence. Not only is this basic piece of self-knowledge available in memory, it is always immediately accessible, just like your first or last name. In the same way, *once a student’s poor academic reputation has been*

*forged in the context of the classroom, it acts as an ongoing reminder of the student's weak points and other inadequacies. This kind of self-knowledge is activated effortlessly and unwillingly every time a teacher proposes an activity associated with failure in the student's past (geometry or mathematics in our study). Unfortunately, the ongoing activation of such self-concepts engulfs these students in a sphere of failure, for at least two reasons. First, because it fosters within them pessimistic assessments of their chances of success and thus prevents them from getting involved to any serious extent in the proposed activity. Second, because even when these students do attempt to apply themselves, the highly accessible memory of their past failures, and their visions of getting lost again, use up so much of their attention that they are incapable of devoting themselves fully to the problem at hand.*

Hence the well-known difficulty teachers have in getting their poor students to stop looking out the window (or even to stay in their seats!) and to concentrate on their exercises in order to prevent those 'same old mistakes'. The temptation is great for teachers to see the behavior of these low achievers as the mark of their inability to do schoolwork, or at least as a reflection of what is often noted on students' reports as a 'genuine attention problem'. However, *the greatest obstacle generally lies elsewhere, namely, in the conditions under which cognitive abilities are expressed, not in the abilities themselves.*

Experimental results show (Huguet *et al.*, 2001a) that a student may have all the necessary skills and aptitudes for a given exercise but fail to implement them because the context is unfavorable. One must therefore proceed with caution before drawing the conclusion that so-and-so has such-and-such a learning disability. This problem is obviously a vital one for the schools, and for any educational system where the evaluation of knowledge is a common

practice. It must be acknowledged – and this is fundamental – ability is not directly observable, it can only be inferred from performance. Yet, as we have seen, the latter is closely linked to the ‘production’ context. Hence the need to take the context into account if we hope to gain insight into the reasons why certain students fail, and thus to be in a position to apply that insight to improving the effectiveness of remedial techniques for lagging students.

### **Academic self-concept of success and the BFLPE**

Let us elaborate further on the good students. Educators and parents often assume that, for these students, there are academic benefits associated with attending higher-ability schools (or classrooms). After all, academic achievement, aspirations and subsequent attainment are typically higher in these schools. As demonstrated by Marsh and colleagues, however, equally able students have typically *lower* academic self-concepts in *higher*-ability schools than in lower-ability schools. This effect, which has been identified in many studies on thousands and thousands of students all over the world (see Marsh & Hau, 2003), is called the ‘**big-fish-little-pond effect**’ (BFLPE). While students’ academic self-concept is positively influenced by their own academic accomplishments, the high ability levels of others in their immediate context negatively influence it (see Figure 7.4). The BFLPE, therefore, is a **context effect**.

There is now convincing evidence that the BFLPE also affects students’ academic choices, academic effort and subsequent achievement. Likewise, it seems that the BFLPE represents the counterbalancing, net effects of two opposing processes, one based on contrast between oneself and others and the other on assimilation.

**Contrast** is said to occur when the self-evaluative judgment shifts away from the background or context. If students indeed use the other students in their academically selective schools or classes (i.e., schools or classes where the average ability level of students is especially



high) as a basis of comparison, then participation in academically selective classes should result in lowered academic self-concepts, that is, a contrast or negative BFLPE (e.g., ‘there are a lot of students better than I am, so I must not be as good as I thought’).

**Assimilation** is said to occur when the self-evaluative judgment shifts towards the social context. For example, pride in selection for participation in academically selective settings might improve students’ academic self-concept (i.e., ‘if I’m good enough to be selected to participate in this prestigious program with all these other very clever students, then I must be very clever’).

Thus, attending higher-ability schools (or being placed in higher-ability classes) simultaneously results in a more demanding basis of social comparison for one’s own accomplishments (leading to a stronger negative contrast effect), and a source of pride (leading to a stronger positive assimilation effect). Ironically, some educational programs intentionally foster a highly competitive environment that is likely to exacerbate the BFLPE rather than to counteract it.

Wheeler and Suls (2005) raised the question how the BFLPE (upward comparisons resulting in lower academic self-concepts) relates to the findings of Blanton et al. (1999) and Huguet et al. (2001b) that upward social comparison is favorable for future academic achievement. This led to a re-analysis of the Dutch and French datasets, by Seaton et al. (2008) applying a BFLPE approach. The major conclusion of these analyses was that “lower self-evaluations associated with being in high-ability class (the BFLPE) can co-exist with – and are not moderated by – the upward social comparison choices with individual students that enhanced performance” (Seaton et al., p. 95). As the two original studies were not designed for testing the BFLPE, the re-analysis, although impressive, also suffered some weaknesses. The next step, therefore, was to integrate the two approaches, i.e. the dependent variables, in one study. This

integrative step was taken by Huguet, Dumas, Marsh, Régner, Wheeler, Suls, Seaton, and Nezlek (2009). Comparative evaluations and comparison choices for French and math were asked in the same way as before. Instead of the grades on school reports these authors used scores on standardized tests for these two subjects. Most importantly, the academic self-concept in these two subjects was measured with two six-item scales. An analysis of the self-concepts for French and math showed the usual BFLPE effects. Whereas the relationship between students' ability and self-concept was positive in both math and French, there were negative relationships between class-average ability and self-concept in math and French. Next, the comparative evaluations were added as a predictor. This had a dramatic, although expected, effect on the BFLPE: it disappeared almost completely. As the authors put it: "This study comprises the first evidence that the BFLPE (a) is eliminated after controlling for students' invidious comparisons with their class and (b) coexists with the assimilative and contrastive effects of upward social comparison choices on academic self-concept" (p. 64).

Finally, a study by Liem, Marsh, Martin, McInerney and Yeung (2013) showed, among other things, that splitting the class averages for boys and girls, or for Chinese versus non-Chinese students, i.e creating gender-specific and ethnicity-specific frames of reference had no additional effect over the overall class averages.

## **Comparative evaluations**

The comparative evaluations are also interesting in their own right, as they may reveal so-called 'Better-Than-Average' (BTA) effects. BTA is the phenomenon that people, on average evaluate themselves as more favorable than the average (or generalized) other person, which is (logically) impossible and therefore is called a bias. Kuyper, Dijkstra, Buunk, and Van der Werf (2011) studied comparative evaluations in five domains in a large sample of first year secondary

school students (age 12). Contrary to the expectation, no systematic BTA bias was found in four of the five domains, i.e. athleticism, ability to get high grades, likability and physical attractiveness. Only in the motivational domain (being eager to get high grades) the average comparative evaluation lay well above the scale midpoint. This indicated that the students perceived themselves as more motivated than their classmates. The explanation offered by the researchers was that, in school classes, it is not “cool” for many students to admit to your classmates that you like to have high grades, make your homework seriously, etc., so that they created a *collective illusion*, that they came to believe themselves. These authors also found significant effects of gender and ethnic minority status on the comparative evaluations. Boys had higher comparative evaluations than girls on all five dimensions, and ethnic minority students, especially from Moroccan and Turkish origin, had higher comparative evaluations than the Dutch majority group.

## **Stereotype threat: the role of negative stereotypes**

Another critical phenomenon here is ‘**stereotype threat**’ (Steele, 1997), or the threat that one’s performance will confirm – to others, to oneself or both – a negative stereotype associated with one’s own social group (e.g., for women and girls the stereotype that they are inferior to men and boys on math-related tasks). This threat unfortunately leads to poorer performance and thus produces the expected negative outcome. In Spencer, Steele and Quinn’s (1999) studies, for example, women with high math ability performed less well (than equally qualified men) on difficult math tests both when they were told that the test produced gender differences and when that information was not given, but performed as well as men when told that no gender differences had been found. There is now ample evidence that women and girls suffer from gender-stereotyped expectations on standardized math tests (see Huguet & Régner, 2007, for a

review). Huguet and Régner's (2007) findings indicate that girls in years seven–nine can exhibit a performance deficit in quasi-ordinary classroom circumstances *when they are simply led to believe that the task at hand measures mathematical skills*. In this new study, students (age eleven–thirteen) were faced with the same memory task as the one described earlier in this chapter (see Figure 7.2), which was characterized as a geometry test versus a memory game (Study 1) or as a geometry test versus a drawing test (Study 2). In both studies, whereas girls underperformed relative to boys in the relatively self-threatening geometry condition, they outperformed them in the more neutral condition (i.e., when the task was characterized as a memory game or a drawing test). Furthermore, stereotype threat occurred in girls working alone or in mixed-gender groups (i.e., presence of regular classmates), but not in same-gender groups (i.e., presence of only same-gender classmates), which has several implications for educational practices (see Box 7.3).

One may wonder whether students' beliefs about the two genders' math ability moderate their susceptibility to stereotype threat. Does this threat operate in girls who, for example, hold counter-stereotypic views about the two genders math ability? Unfortunately it does. Using the same paradigm as previously (geometry/drawing), Huguet and Régner (2009) found evidence of stereotype threat in middle school girls *who denied* the negative gender-math stereotype at the explicit level, that is, who attributed superior math skills to their own gender group and so displayed counter-stereotypic beliefs. Girls who denied the stereotype suffered from it nonetheless when they simply believed (even mistakenly) that the task they were going to take measured geometry skills. This is another illustration of how powerful the negative gender–math stereotype can be for girls at this early stage in their academic life. These additional findings support Steele's (1997) claim that stereotype endorsement is *not* a necessary condition for

stereotype threat to occur, which remained unclear in children. Perhaps more importantly, these findings can also be taken as evidence that stereotypic knowledge—that is integrated early during cognitive development—may prevail over newly acquired personal (counterstereotypic) beliefs that require higher cognitive maturity (Devine, 1989). Such personal beliefs, therefore, may not be strong enough in children to buffer them from stereotype threat.

As a matter of fact, even women at the top of Math-Science-Engineering (MSE) education, who can themselves be described as “counterstereotypic”, experience stereotype threat (e.g., Régner et al., 2010). In Régner et al.’s (2010) study, participants were outstanding students who entered prestigious engineering (graduate) schools. More than all other female students, those who enter these schools are immersed in an unwelcoming environment where they are still targeted by negative gender stereotypes and are massively underrepresented. Women indeed comprise no more than 20% of engineering school graduates in Western Europe and the United States. One may believe that these counter-stereotypic women excel in the highest MSE programs because they do not (or no longer) suffer from stereotype threat for some reasons, for example the development of efficient self-protective strategies. However, Régner et al.’s (2010) findings support the classic stereotype threat hypothesis. In their research, the engineering students performed the Raven’s advanced progressive matrices, a very difficult reasoning test measuring “fluid intelligence”. Unlike “crystallized intelligence”, which refers to acquired skills and knowledge, “fluid intelligence” is defined as the ability to reason logically on largely unfamiliar materials and problems. Because women are still thought to be less rational and more emotional than men—another powerful gender stereotype—there is clearly "a threat in the air" (following Steele’s 1997 own words) for women in the reasoning domain. Participants were told that the test was either “diagnostic” of logical reasoning ability or “diagnostic but gender fair,”

and were randomly assigned to one of these two conditions. Whereas women underperformed relative to men in the diagnostic condition, they performed as well as men in the diagnostic but gender fair condition. Women in the gender-fair condition also outperformed women in the diagnostic condition (a pattern moderated by participants' working memory capacity). Thus, Régner et al.'s (2010) findings indicate that women who excel in the highest MSE programs do so despite still suffering from stereotype threat (see Mazerolles, Régner, Morisset, Rigalleau & Huguet, 2012, and Chapter 2 for more information on social stereotypes).

## **Classroom climate**

Finally, although this chapter is necessarily very selective, it cannot be closed without mentioning phenomena related to the 'classroom climate' (Adelman & Taylor, 2005). **Classroom climate**, another significant determinant of students' behavior and performances, is the perceived quality of the classroom, also referred to as the 'atmosphere' or 'ambience' of this particular setting. As such, the classroom climate results from the combination of numerous factors (physical, material, organizational, economic, social and cultural factors, to name a few). It also ranges from hostile to welcoming and supportive, and can fluctuate daily and over the school year. Here, we simply focus on some of the teachers' practices, which can make this climate beneficial or a barrier to learning.

In a study in the Netherlands, one of us (HK) asked children at their very first day at secondary school to indicate how much they expected to like each one of ten different subjects (referred to below as 'expected liking'). About one month later, they answered another questionnaire, where they had to indicate how much they liked each subject, and also to judge each teacher on a number of aspects, which formed together a 'teacher-evaluation scale'. The 'expected liking' judgments can be considered to reflect the children's past history with the

subjects. A child who liked math at primary school will also expect to like it at secondary school. It appeared that the correlations between the expected liking and the expressed liking after one month were very low, rarely exceeding 0.30. On the other hand, the correlations between the expressed liking and the scores on the teacher-evaluation scale were much higher, up to 0.85. This means that teachers strongly determine whether their subject is liked. Or, in other words, one month being taught by a very good teacher (or a teacher perceived as such) can overrule all the six or more years of negative experiences with the specific subject. And vice versa, one month of lessons by a bad teacher (or one perceived as such) can overrule all the wonderful past experiences.

But the teachers themselves are rarely what pupils love or hate; it is rather the climate that they are partially or fully responsible for setting up in the classroom. We must acknowledge that classes where the atmosphere is highly unpleasant are ones where each child's scholastic standing is made conspicuous, for instance, when passing out tests that have been marked or when calling pupils up to the front, or, even worse, when students are systematically divided up into ability groups. In such settings, the risk of seeing the high achievers reject the low achievers is great, and the result is that both the former and the latter become irritable and aggressive, and less attentive to those around them.

The risk that the classroom climate will deteriorate can be substantially reduced if the teacher strives to minimize competition. This can be done in particular by scheduling activities where students can work collectively, without regard to their academic standing, where they can exchange opinions, reformulate problems together, and talk about the pros and cons of 'their' best solutions. At the same time, this kind of interactive pedagogy helps teach students some of

the most fundamental social skills, such as taking contradictory points of view into account, a process that is now known to play a key role in cognitive development (Doise & Mugny, 1998).

## **Applied social psychology in context**

In education, as in many other spheres of social life, social psychology generally offers a specific contribution to our understanding of relatively difficult theoretical or practical problems.

Take, for example, the origin of gender differences on standardized math tests, which has frequently been a topic of debate in the past three decades. These differences have been sometimes attributed to ability differences, themselves rooted in biological mechanisms (e.g., prenatal testosterone exposure). But as we have seen (see the section on stereotype threat), a number of social-psychological findings clearly run against this biological hypothesis. In Spencer *et al.*'s (1999) series of experiments, the very fact that falsifying the gender stereotype about math not only reduced the male advantage but eliminated it altogether runs counter to any biological account of gender differences in this domain. Consistent with this, Huguet and Régner (2007, 2009) offered evidence that girls can show a performance deficit when they simply come to believe that the task at hand measures mathematical skills (although it does not).

Taken together, such findings may prevent parents, teachers and policy makers from adopting a sometimes excessive biological approach. And this can make a huge difference regarding what should be done at the practical level: encouraging girls to see scientific disciplines and careers as self-relevant versus orienting them towards gender-'appropriate' occupations.

## **Final thoughts**

The results briefly discussed here point out the strong interrelationship between student achievement and the social and emotional dynamics in the classroom as they are defined by how



students compare themselves to their peers, how they perceive intelligence, how they self-evaluate in various academic domains, how they react to self-threatening stereotypes and how teachers conduct their classes. Yet, how much class time in teachers' colleges is devoted to these phenomena – and there are many others! – or more generally, to the behavioral sciences? Practically none in most cases, as a growing number of insightful teachers themselves have noted, complaining that as far as teaching methods are concerned, their training is inadequate (at least in some European countries). *By dogmatically treating the teaching profession as a sort of calling, we have ended up believing that being a good teacher requires no more than a love of teaching, a boundless passion discovered early. This is regrettable.*

Of course, most teachers do not have the luxury of being able to formulate and test relatively sophisticated theories and hypotheses about their classroom. They have to accomplish the practical task of teaching, which requires getting the job done through whatever conceptions and methods work best, under practical constraints that include physical resources, numbers and 'nature' of pupils, time pressure and so on. This is very clear. Most ordinary physicians everywhere in the world, however, are also faced with numerous constraints, and still their medical practices are scientifically grounded. Claiming that all the problems encountered in the teaching profession would vanish if we merely submitted them to scientific knowledge would be nonsensical. *But believing that they could be solved without the intervention of science would make even less sense.*

As Bruner (1990) noted, in spite of advances in the sciences, there remains the challenge of knowing when, where and how to apply our knowledge to the living context generated by 'the case' that we have before us (to borrow from medical jargon). And when education is at stake, that living context is a classroom, a classroom situated within a cultural whole that we must

strive to understand and whose impact on student achievement and behavior must be fully accounted for.

## **Conclusion**

We argued that education is – at least in part – applied social psychology. We thereby showed how the understanding of basic social-psychological concepts and phenomena can help further our educational goals. The first phenomenon is ‘social comparison’ (i.e., the process of thinking about self-related information in relation to one or more other people), a basic process that occurs even in the preschool years. Then we showed how the findings of two recent field studies can be used in order to improve students’ academic outcomes and inhibit negative social comparison inferences (i.e., concluding that one’s ability in a given domain is necessarily inferior to that of others, given some self–other differences in that domain). Phenomena related to students’ ‘theories of intelligence’ and ‘academic self-concept’ were also part of this chapter. We argued that students who have an ‘incremental’ conception of intelligence (i.e., who see their various abilities as open for change) have a better perspective than the students who seem to adhere to an ‘entity’ conception (i.e., who see their abilities as essentially innate and stable over time). In the same vein, we discussed a simple but important experiment which clearly shows how powerful the students’ academic history and related self-concept (i.e., how students self-evaluate in various academic domains) can be in the determination of their actual performance. A paradoxical effect of schools’ ability levels on students’ academic self-concept, namely, the big-fish-little-pond effect (BFLPE) and the action of negative stereotypes were also described. Finally, throughout the chapter, we made specific practical recommendations about how teachers could and how they should not behave in order to facilitate a more optimal learning environment, especially for the less capable or poorer students. These recommendations rely on the idea that

the social-psychological conditions under which students express their cognitive abilities matter as much as the abilities themselves. The conclusion is that the practical task of teaching in fact requires extensive scientific knowledge of social behavior, especially the phenomena examined at the interface of social psychology and education.

## **Glossary**

**Academic self-concept:** how the individuals self-evaluate in a number of self-relevant academic domains.

**Assimilation effect** (in the context of self-evaluation via social comparison): the self-evaluative judgement shifts towards the context, resulting in increased self-evaluation when comparison is made with more successful others or decreased self-evaluation when comparison is made with less successful others.

**Big-fish-little-pond effect (BFLPE):** the fact that the students in academically selective environments (i.e., schools or classes where the average ability levels of students is especially high) have lower academic self-concepts compared with students of equal aptitude who are educated in non-selective environments.

**Classroom climate:** the perceived quality of the classroom, also referred to as the ‘atmosphere’ or ‘ambience’ of this particular setting.

**Comparative evaluation:** the relative position attributed to the self on a dimension within a group.

**Context effect:** A context effect occurs as a higher level variable, e.g. school class or school, has an effect on a student level outcome variable, above the effect of predictor variables at the student level. For instance, if gender is taken into account at the student level, the proportion of boys in the classes, can have an additional effect.

**Contrast effect** (in the context of self-evaluation via social comparison): the self-evaluative judgement shifts away from the context, resulting in decreased self-evaluation when comparison is made with more successful others, and increased self-evaluation when comparison is made with less successful others.

**Downward comparison:** comparison with someone who is worse off or who performs worse on the dimension under comparison.

**Entity theorists** (about intelligence): people who believe that intelligence is an innate and stable property of a person.

**Incremental theorists** (about intelligence): people who believe that intelligence is malleable and open for change.

**Observational learning:** learning by observing how another person (model) performs a task.

**Related attributes:** the attributes that can be viewed as predictive for the positions on a given comparison dimension. ‘Applying’ the similarity principle, the comparison target can be similar on the core dimension (e.g., scores in tennis) or on dimensions that are related (or supposedly related) to the task at hand (attributes such as age, sex, level of practice, etc).

**Self-efficacy (perceived self-efficacy):** beliefs about one’s own abilities to perform specific tasks.

**Similarity principle:** a preference to compare oneself with others who are similar on related attributes.

**Social comparison:** the process of thinking about information about the self (e.g., my marks in math) in relation to one or more other people (others’ math marks).

**Social comparison target:** the person chosen for comparison in a given domain (e.g., math).

**Stereotype threat:** the threat that one's performance will confirm – to others, to oneself, or both – a negative stereotype associated with one's own social group.

**Unidirectional drive upwards:** in the case of social comparison of abilities, a preference to compare oneself with others who perform (somewhat) better.

**Upward comparison:** comparison with someone who is better off or who performs better on the dimension under comparison.

## Review questions

1. Exactly what do we know about social comparison principles and related consequences in the classroom?
2. How important is understanding social comparison principles in the struggle against academic failure?
3. Explain why students' conceptions about intelligence are a significant component of their academic achievement.
4. What do notions such as the 'BFLPE' and 'stereotype threat' mean, and exactly why are these notions important at the practical level?
5. Explain the notion of 'classroom climate' and why this notion is important for teachers.
6. Compare what is said about the effects of upward and downward comparison in this Chapter with what is said in Chapter 11.

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**Figure 7.1** *Children doing a geometry or drawing test*

**Figure 7.2** *The complex figure used by Huguet et al. (2001)*

**Figure 7.3** *Memory recall score of students (max = 44 points) by task context and academic standing*

**Figure 7.4** *The big-fish-little-pond effect (BFLPE): theoretical predictions (adapted from Marsh & Hau, 2003)*

**Box 7.1 Theory application: how to make use of social comparison principles.**

Our knowledge of social comparison principles (see the previous section) leads towards at least two recommendations. First, recall that no matter what the subject is, cross-gender comparisons are relatively rare in the classroom setting, almost as if they were meaningless for most students. This suggests that if using a student as an example to stimulate other pupils has any effect, it generally does so only for students of the same gender. *If girls rarely or never compare themselves to boys, and likewise for boys, any given student in the class – no matter how brilliant – cannot serve as an example for everyone.* This should not be taken as an argument for separating the two sexes. This is just a matter of fact, suggesting that *teachers take one exemplar of each gender as comparison standards for their students* (especially when the comparison dimension is gender stereotyped, see the section on ‘stereotype threat’ later in this chapter).

Second, to compare themselves with others, most students choose peers not only of the same gender but also ones they judge to be within their reach (i.e., *slightly upward* comparison targets). On this basis, it is not surprising that the less capable students typically disregard the examples of excellence forced upon them by teachers applying some psychological technique

that is at best naive, because it does not take the realities of students' comparison frameworks into account. But above all – and this breaks away from traditional teaching methods – our knowledge of students' spontaneous social comparison choices suggests that *even the less capable students can profitably be used as examples by teachers, not for the whole class, of course, but for those classmates who perform even worse*. It is truly amazing to find that, despite their attested failure, some less capable students continue to compare themselves slightly upwards. The least we can do is help them in this respect. Failure to take students' own standards into account, whether we like it or not, amounts to forcing them to compare themselves with the best students (as generally suggested by the teacher), and thereby run the risk of discouraging them. What happens then is quite simple: rather than comparing upwards, discouraged students focus on peers whose grades are even worse than their own. While reassuring, this downward comparison prevents all progress; and we have come full circle. Everyone remembers students stuck in the rut of failure, precisely because they were glad not to be the very worst in the class! As time passes, this situation feeds an **academic self-concept** (i.e., how the individuals self-evaluate in various academic dimensions) that is ridden with failure and has catastrophic effects on cognitive output (see next section).

### **Box 7.2 Application of a research technique**

By this time, the reader will have understood that to enable poor students to progress, it is not enough to concentrate on the areas where they are lacking, even if carefully targeted. Granted, this step is mandatory. But to have any chance of success, it must be accompanied by close consideration of the actual learning context. School behavior is like many other kinds of behavior: it can be changed only if and when the conditions that contribute to its occurrence also

change. If we ignore the fact that certain failures depend at least as much on the social and emotional setting (the classroom itself) as on the presumed low aptitude of the failing children, we are doomed to repeating the same things a thousand times, to giving the same advice over and over again, to reprimanding the same careless blunders time after time, without any noticeable consequences other than reciprocal annoyance and discouragement. Isn't this a daily experience of most teachers? One can hardly blame the teachers for it, given the difficulty of their occupation. *But the point is, to have an effective impact on poor students, one has to act upon the whole class. If failure in class is at least partly due to what other classmates think, then teachers should – rather, must – constantly pay attention to the reputation of poor students.* Several strategies are available for dismantling negative academic reputations, or, even better, for preventing them from being built up in the first place. For example, never publicly point out a student's inadequacies during oral testing or questioning in front of the class, or when handing back tests or having students write on the board. There is nothing worse for a poor student than to see or hear peers noticing or talking about his/her weaknesses or lack of ability. Eventually the day arrives when this scenario has become so familiar to poor students that they disregard it altogether. But by then the game is over, and lost. With time, as still other studies have shown (Monteil & Huguet, 1999, for a review), poor students' convictions about themselves fortify to the point where any success in a subject matter formerly associated with failure has the initial effect of troubling the child even more, especially if classmates find out about it. It is only when the teacher exercises a certain degree of discretion (when returning tests, for example) that this unusual event is sometimes followed by spectacular progress. On the other hand, students who are used to success or have developed positive views about themselves in such-and-such academic dimension want to be allowed to speak and to perform in front of others. They should

be given this opportunity, otherwise their achievement level may decline. Deprive good students of the classroom visibility they are accustomed to – for example, by no longer calling on them in class – and it will not be long before their grades start dropping, sometimes falling even lower than those of poor students.

**Box 7.3 Application of a research method: should the two genders be separated in the school setting?**

One implication of stereotype threat theory and research concerns the controversy about the merits of single-gender education over coeducation. The elimination of stereotype threat in the former setting may indeed be taken as a serious argument for separating the genders. After all, if such a separation could minimize the deleterious effects of gender stereotypes, why not make use of it? Several points must nevertheless be made here.

First, although single-gender education may help prevent stereotypes from taking effect downstream (i.e., in testing situations), it is ineffective if not detrimental upstream (i.e., stereotype formation and propagation), which is obviously not satisfactory. As indicated by numerous findings in the social-categorization literature, putting individuals into separate groups typically strengthens (or even creates) stereotypes rather than reducing them and the consequences they trigger. Clearly, if single-gender education leads to better performance in the classroom but generates tension and discrimination outside, it is undesirable or at the very least should be used with caution (i.e., temporarily rather than on a regular basis). In line with this argument, interventions designed to reduce separation and intergroup boundaries between the two genders undermine stereotype threat in women.

Second, Huguet and Régner's (2007) findings show that it is not the sheer presence of males

that is problematic. In effect, girls worked alone in Study 1 (i.e., in the absence of any members of the opposite gender), yet this arrangement did not prevent their performance deficit from showing up in the threatening condition.

Finally, separating the genders is not the only way to proceed at the practical level. Teaching students about stereotype threat is an efficient means of reducing its detrimental effects in testing situations. This option is especially attractive, since it may also help people propagate counter-stereotypic views within their social network, including among their own children, which would be effective both downstream and upstream. Additional interventions can be found in Good, Aronson and Inzlicht (2003), who showed that adolescent females encouraged by university students to view intelligence as malleable and/or to attribute academic difficulties to the novelty of the educational setting earned significantly higher marks in math standardized tests than females in the control condition (where these encouragements were not made). This interesting finding suggests that stereotype threat is the ‘default mindset’ for female students in math classes, and shows how to change this mindset. Teachers, parents, and policy makers, all may take for granted that students who explicitly deny gender stereotypes are not susceptible to stereotype threat, and may conclude on this basis that stereotype threat-related interventions are useless. However, stereotype threat is not necessarily detectable through students’ beliefs about the two genders math ability (Huguet et Régner, 2009). Clearly, girls’ counter-stereotypic beliefs (when any) cannot be taken as sufficient evidence for deciding whether the struggle against stereotype threat is or is not needed. Appropriate interventions should be the default option when aiming for true gender equality in math and science achievements.

## AFFILIATIONS

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