



Gender Differences in Social Comparison Processes and Self-Concept Among Students

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Forced social comparison (i.e., comparing oneself to another “predefined” student) has often been studied in school settings. However, to our knowledge, studies that explore its association with academic self-concept have rarely distinguished between subjects involved (e.g., mathematics or language learning). Moreover, some processes taking place during forced social comparison are thought to have a negative impact on academic self-concept. Thus, the aims of this study were to explore: 1) the associations between self-concepts (i.e., Language learning, Mathematics and Social), attitudes towards school and social comparison processes in school settings; and 2) the influence of social comparison processes on components of academic self-concept across gender. A sample of 238 elementary school students ($M_{\text{age}} = 10.12$, $SD = 1.25$; 52% boys) completed a questionnaire assessing self-concepts and attitudes towards school, as well as a questionnaire measuring four social comparison processes. Results indicated that girls used negative processes (i.e., upward contrast and downward identification) more than boys. In addition, boys reported better self-concept in mathematics while girls reported better self-concept in language learning (small effect). Results of stepwise multiple linear regression analyses showed that upward contrast best explained gender differences, with a stronger effect for girls. Attitudes towards school only explained gender differences in language learning self-concept. Furthermore, positive processes (i.e., upward identification and downward contrast) have no effect on either component of academic self-concept. Results of this study demonstrate the need to examine the evolution of social comparison processes over time, considering their impact on students' academic/social well-being and achievement from a gender perspective.

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INTRODUCTION

Social comparison theory has been applied to many clinical problems, such as body image, depression and burnout (Dijkstra et al., 2010). Social comparison includes all processes aimed at comparing one's own personal characteristics with those of others (Buunk and Gibbons, 2000). Dijkstra et al. (2010, p. 196) have identified processes involved when individuals compare themselves to others. According to them, individuals will choose various comparison targets. It refers to the direction of comparison: either a comparison with people judged as having similar abilities to their own (i.e., lateral comparisons), or a comparison with people having superior abilities (i.e., upward

comparisons) or inferior abilities (i.e., downward comparisons). Moreover, individuals would compare themselves in a movement of identification/contrast with respect to the chosen target. It refers to the framing of comparison: they can either identify with the comparison target by focusing on their similarities, or contrast themselves from the comparison target by focusing on their differences. Thus, four social comparison processes have been highlighted: upward identification, downward contrast, upward contrast and downward identification (Smith, 2000; Buunk et al., 2005). These four processes will be the point of reference for this article because they have already been studied in elementary school students (Boissicat et al., 2012; Bouffard et al., 2014). According to the meta-analysis by Gerber et al. (2018), contrast would be the dominant response as identification would require a special priming. Although the tendency would be to evaluate oneself positively, these authors believe that individuals “look upward to confirm their closeness to the ‘better ones,’ which often leads, alas, to self-deflation” (p. 194).

Specifically in school settings, social comparison can be defined as a student taking one or more classmates as comparison target in order to conduct an assessment of his/her own competence (Bouffard et al., 2014). Therefore, it would impact students’ self-concept, especially academic self-concept. Internal/External frame of reference model (I/E model; Marsh, 1986) assumes the influence of social comparison on academic self-concept (Wolff et al., 2018). The internal frame of reference involves an internal comparison called “dimensional comparison” (e.g., student comparing his/her competence between two different subjects) while the external frame of reference involves an external comparison called “social comparison” (Ertl et al., 2017; Wolff et al., 2018). Wolff et al. (2018) indicate that if the student compares his/her academic performance to that of his/her peers and believes that he/she is better than them, this social comparison should lead to a better academic self-concept. Although the I/E model suggests that social and dimensional comparisons are jointly involved during the development of self-concept in school settings (Wolff et al., 2018), only the external frame of reference will be considered in this study. Indeed, the comparisons students make within their classrooms provide an external frame of reference for self-assessment and performance attribution (Ertl et al., 2017; see also; Rost et al., 2005) and appear to be most important when students form their academic self-concept (Wolff et al., 2018).

Boissicat et al. (2020) point out that when a student compares himself/herself to a classmate, this individual comparison may be unconscious (i.e., not being fully aware that he/she is comparing oneself), deliberate or forced. These authors define deliberate comparison as being fully chosen by students, by voluntarily selecting a comparison target within the classroom. It is assessed through nomination. Forced comparison, on the other hand, occurs when students are asked to compare themselves to another “predefined” student. In this particular case, students would appear to favor upward identification and downward contrast, both of which are non-threatening processes to the self (Bouffard et al., 2014). However, social comparison in school settings has often been defined as a type of vicarious experience, where

observing a peer of the same level succeeding or failing in a task would provide information leading students to believe that they are likely to do the same (e.g., Boissicat et al., 2020). Nevertheless, according to Dijkstra et al. (2008) “although the concepts of modeling and social comparison overlap, they differ significantly” (p. 841). They state that the purpose of modeling is observation and imitation teaching (e.g., a procedure) that would ensure student success and thus positively influence academic self-concept. Conversely, social comparison occurs when students choose a target (i.e., another student) with whom to compare his/her competence or performance. Thus, “upward comparisons negatively affect students’ academic self-concept” (Dijkstra et al., 2008, p. 841).

Positive effects of upward identification have been suggested in studies evaluating forced social comparison processes. Indeed, the preferred process for elementary school students appears to be upward identification followed by downward contrast similarly across gender, which are positively associated with perceived academic competence (Boissicat et al., 2012; Bouffard et al., 2014). Bouffard et al. (2014) indicate that this preference may be related to a more pronounced search for positive emotions that these two processes are presumed to generate. Nevertheless, Boissicat et al. (2012) found that upward identification would have a low contribution to academic self-concept, while downward identification would have the largest negative contribution despite its low use by students. These deleterious effects would be found even after controlling for academic performance. These authors conclude that links between self-concept and social comparison in school settings would not only depend on the direction of the comparison, but also on the framing. In addition, Dumas and Huguet (2011) point out that upward identification would be more implemented during deliberate comparisons, especially from the age of 10, with an effect of enhancing perceived competence. They also indicate that if the student is confronted with a failure, he/she will tend to take as comparison target a student with competence judged inferior to his/her own. Dumas and Huguet (2011) conclude that during forced comparisons (notably imposed by selective educational systems), positive effects of upward identification would not be sufficient to counteract the effects of upward contrast that generate a decline in academic self-concept.

Unfortunately, to our knowledge, studies that consider associations between academic self-concept and forced social comparison make little or no distinction between the subjects concerned. Moreover, depending on the age groups observed, results relating to gender differences seem to differ. For example, Pulford et al. (2018) showed that female university students were more likely to use upward comparisons, while male students were more likely to use downward comparisons. In addition, downward comparisons would not be related to academic confidence. Studies among elementary school students generally show that girls use downward identification and upward contrast more than boys (Boissicat et al., 2012; Bouffard et al., 2014). However, these two studies do not explore the relative contribution of these four social comparison processes to academic self-concept across subjects

and gender. Thus, the present study has a twofold purpose. First, it aims at exploring gender differences in academic self-concept in two important subjects during elementary grades (i.e., language learning and mathematics), social self-concept, attitudes towards school, and four social comparison processes previously identified. Second, it aims at exploring the influence of social comparison processes on academic self-concept in each subject area and by gender, taking into account effects of social self-concept and attitudes towards school. In particular, given the above-mentioned elements and age of the students involved in this study, we expect that girls will report implementing negative processes more frequently, which will have a negative impact on their academic self-concept. Furthermore, since the presumed positive effects of upward identification would not be sufficient in forced social comparison contexts (Dumas and Huguet, 2011), we expect that this process would not emerge as a significant predictor of academic self-concept.

MATERIALS AND METHODS

Research Design and Study Procedure

Data were collected from elementary school students (five to eight graders) in a French-speaking canton of Switzerland during the 2017 to 2020 school years. In Switzerland, grades five to eight correspond to the fifth to eighth years of compulsory schooling. The Cantonal Commission on Ethics in Human Research (CER-VD)¹ provides authorizations for clinical trials and human research projects that fall within the application field of the Human Research Act (HRA)². However, the HRA does not apply to research conducted on health-related data that has been collected anonymously or anonymized. The Cantonal data protection acts³ concern personal and identifiable data: henceforth data is anonymized, it is no longer covered by the Act. This research was conducted in accordance with the Code of Research Ethics for the Universities of Teacher Education (CDHEP)⁴ and the International Ethical Guidelines for Health-related Research Involving Humans⁵. In particular, the duty to inform was respected. Parents were informed by letters of the general objectives of the study, and could decline their child's participation in the data collection. The letters also contained the identity of the supervisor and the institution for which he or she worked, as well as a contact address. Students were also given the option to decline to participate in the study, as their participation was voluntary. Under these conditions, no refusals were recorded (i.e., return rate of 100%) and the anonymity of the participants was preserved.

Data were collected in the classroom by Bachelor students who administered the questionnaires anonymously. Each item was read a first time to ensure understanding by students, and completing the questionnaires took between 15 and 30 min.

Participants and Study Procedure

The sample consisted of 238 students (age range: 8–13 years), including 114 girls (48% of the total sample; Mage = 10.18, SD = 1.31) and 124 boys (Mage = 10.07, SD = 1.19). Of the total sample, 21.80% were fifth graders (21.90% girls; 21.80% boys), 23.90% were sixth graders (21.90% girls; 25.80% boys), 29.40% were seventh graders (29.80% girls; 29.00% boys) and 24.80% were eighth graders (26.30% girls; 23.40% boys).

Measures

Social Comparison Processes in School Context

Social comparison processes were assessed using the French version of the Questionnaire of the comparison of academic self (Questionnaire de la Comparaison de Soi Scolaire; QCSS) developed by Bouffard et al. (2014). The QCSS is a self-report questionnaire designed to assess four social comparison processes (i.e., upward contrast, $\alpha = 0.73$; upward identification, $\alpha = 0.60$; downward identification, $\alpha = 0.78$; downward contrast, $\alpha = 0.77$). Each process is composed of 3 items scored on a 4-point Likert scale (1 = "Not at all like me" to 4 = "Totally like me"; scores per dimension range from 3 to 12). A higher score on one dimension indicates higher frequency of use of a forced social comparison process. Confirmatory Factor Analysis (CFA) results show a good fit to the data ($\chi^2/df = 1.74$; CFI = 0.96; RMSEA = 0.06; SRMR = 0.05). With regard to structural invariance, traditional Chi² difference test approach was performed, indicating the QCSS's factorial invariance across gender ($\Delta\chi^2 = 11.97$, $\Delta df = 8$, $p = 0.152$).

Self-Concepts and Attitudes Towards School

An adapted French version of the *CoSoi* (Valls and Bonvin, 2021) was used to measure self-concepts and attitudes towards school. Due to the age of the students involved in this study, the pictures were adapted with only one statement per item. This self-report questionnaire is composed of 13 items divided into four subscales: self-concept in language learning (SC-L; 3 items, $\alpha = 0.64$) and in mathematics (SC-M; 3 items, $\alpha = 0.77$), social self-concept (SC-Social; 3 items, $\alpha = 0.75$) and Attitudes towards school (Attitudes; 3 items, $\alpha = 0.85$). Academic self-concept corresponds to the student's evaluation of his/her general academic competence (i.e., in the two subjects mentioned). Social self-concept corresponds to the student's evaluation of his/her social relationships within the classroom, while attitudes towards school correspond to the student's evaluation of his/her emotional well-being at school. Each item was scored on a 4-point Likert scale with six reverse scored items (1 = "Not at all like me" to 4 = "Totally like me"; scores per subscale range from 3 to 9) and higher scores indicate higher self-concept (i.e., language learning, mathematics or social) and positive attitudes towards school. CFA results showed a good fit to the data

¹<https://www.cer-vd.ch/>

²<https://www.fedlex.admin.ch/eli/cc/2013/617/en>

³<https://prestations.vd.ch/pub/blv-publication/actes/consolide/172.65?key=1543934892528&id=cf9df545-13f7-4106-a95b-9b3ab8fa8b01>

⁴<https://etudiant.hepl.ch/files/live/sites/files-site/files/filiere-ps/programme-formation/code-ethique-recherche-cdhep-2002-fps-hep-vaud.pdf>

⁵<https://cioms.ch/wp-content/uploads/2017/01/WEB-CIOMS-EthicalGuidelines.pdf>

TABLE 1 | Means (M), standard deviations (SD) and *t*-test results for gender differences.

	Boys (<i>n</i> = 124)		Girls (<i>n</i> = 114)		Means comparison			
	M	SD	M	SD	<i>t</i>	<i>df</i>	<i>P</i>	<i>d</i>
SC-L	2.89	0.65	3.06	0.62	-2.08	236	0.039	0.27
SC-M	3.36	0.66	3.12	0.79	2.59	220.49	0.010	0.33
SC-Social	3.37	0.78	3.45	0.73	-0.80	236	0.423	—
Attitudes	2.74	0.99	3.19	0.86	-3.75	234.93	0.000	0.55
Upward contrast	1.84	0.75	2.21	0.90	-3.39	219.96	0.001	0.46
Upward identification	2.82	0.75	2.75	0.76	0.67	236	0.505	—
Downward identification	1.65	0.74	1.89	0.85	-2.32	236	0.021	0.30
Downward contrast	2.11	0.91	2.20	0.88	-0.82	236	0.412	—

Note. SC-L, language learning self-concept; SC-M, mathematics self-concept; SC-S, social self-concept; Attitudes, attitudes towards school.

TABLE 2 | Correlations between the variables of interest for girls (below the diagonal) and boys (above the diagonal).

	1.	2.	3.	4.	5.	6.	7.	8.
1. SC-L	—	0.08	0.22*	0.12	-0.32***	-0.15	-0.36***	0.05
2. SC-M	0.13	—	0.21*	0.29**	-0.21*	-0.11	-0.19*	-0.10
3. SC-Social	0.19*	0.07	—	0.13	-0.34***	-0.02	-0.32***	-0.08
4. Attitudes	0.21*	0.32***	0.16	—	-0.29**	0.05	-0.08	-0.16
5. Upward contrast	-0.34***	-0.26**	-0.35***	-0.12	—	0.28**	0.46***	0.30***
6. Upward identification	-0.15	0.01	-0.14	0.07	0.22*	—	0.25**	0.13
7. Downward identification	-0.23*	-0.28**	-0.36***	-0.15	0.49***	0.32***	—	0.08
8. Downward contrast	-0.09	-0.02	-0.23*	-0.18	0.48***	0.36***	0.25**	—

Note. SC-L, language learning self-concept; SC-M, mathematics self-concept; SC-S, social self-concept; Attitudes, attitudes towards school.

**p* < 0.05.

***p* < 0.01.

****p* < 0.001.

($\chi^2/df = 1.99$; CFI = 0.95; RMSEA = 0.07; SRMR = 0.06) with factorial invariance across gender ($\Delta\chi^2 = 4.99$, $\Delta df = 8$, *p* = 0.758).

Items of the two questionnaires were presented alternately (i.e., one item from the CoSoi, then one item from the QCSS and so on), making the overall questionnaire contained 25 items. This was done to prevent students from trying to be consistent in their responses. Respondents were asked to indicate how similar they thought they were to the student described in each statement. The general instruction stated that there were no right or wrong answers.

Statistical Analysis

In order to explore gender differences, Student's *t*-test was conducted using Cohen's *d* to assess effect sizes (Cohen, 1988). A stepwise linear regression analysis was carried out in order to determine the predictors of each dimension of academic self-concept. Model 1 of PROCESS (Hayes, 2013) was used to test the moderating effect of gender in the relationship between significant predictors and each dimension of academic self-concept. Then, stepwise multiple linear regression analyses were performed separately for girls and boys to assess the influence of SC-Social, Attitudes, and four social comparison processes on each dimension of academic self-concept (i.e., SC-L and SC-M). Variance Inflation Factor (VIF) values were examined, with a VIF value equal to or greater than 10.00 indicating a multicollinearity problem (Chatterjee et al., 2000). The VIF values were all less than 2.00 in all models tested.

RESULTS

Table 1 shows the means and standard deviations of study's variables for boys and girls. At the descriptive level, we can see that the preferred social comparison processes differ somewhat by gender. Although they both report first using upward identification, girls report using upward and downward contrast equally, whereas boys report using more downward contrast and then upward contrast. The process least reported by both girls and boys is downward identification. Results of *t*-test (Table 1) indicate that girls have better SC-L and more positive attitudes towards school, while boys have better SC-M (with small to moderate effect sizes). In addition, girls report using upward contrast and downward identification significantly more frequently than boys (with small effect sizes).

A first step was to explore correlations according to gender, which are reported in Table 2. It appeared that the strength of the associations between social comparison processes and dimensions of academic self-concept did not vary notably by gender. The only differences found were in the relationship between Attitudes and SC-L (the correlation being significant for girls but not for boys) and between SC-S and SC-M (the correlation being significant for boys but not for girls). Results of the first stepwise multiple linear regression analysis showed that upward contrast ($\beta = -0.25$, *p* < 0.001, $sr^2 = -0.21$), gender ($\beta = 0.21$, *p* < 0.001, $sr^2 = 0.21$) and downward identification ($\beta = -0.18$, *p* < 0.001, $sr^2 = -0.16$) emerged as significant predictors of

TABLE 3 | Hierarchical multiple linear regression analyses predicting self-concept in language learning (SC-L) across gender.

		R^2	Predictors	β	t	p	F change (df)
Boys	Step 1	0.06	SC-Social	0.20	2.30	0.023	3.63 (2,121)
			Attitudes	0.10	1.10	0.274	
	Step 2	0.19	SC-Social	0.08	0.86	0.394	4.69 (4,117)
			Attitudes	0.07	0.77	0.444	
			Upward contrast	-0.19	-1.75	0.083	
			Upward identification	-0.05	-0.60	0.551	
Girls	Step 1	0.07	SC-Social	0.16	1.76	0.081	4.14 (2,111)
			Attitudes	0.18	1.96	0.052	
	Step 2	0.18	SC-Social	0.06	0.59	0.557	3.45 (4,107)
			Attitudes	0.20	2.16	0.033	
			Upward contrast	-0.35	-3.06	0.003	
			Upward identification	-0.13	-1.34	0.182	
			Downward identification	-0.01	-0.12	0.902	
			Downward contrast	0.17	1.61	0.111	

Note. SC-L, language learning self-concept; SC-M, mathematics self-concept; SC-S, social self-concept; Attitudes, attitudes towards school.

TABLE 4 | Hierarchical multiple linear regression analyses predicting self-concept in mathematics (SC-M) across gender.

		R^2	Predictors	β	t	p	F change (df)
Boys	Step 1	0.11	SC-Social	0.17	2.01	0.046	7.78 (2,121)
			Attitudes	0.27	3.10	0.002	
	Step 2	0.14	SC-Social	0.14	1.44	0.153	0.83 (4,117)
			Attitudes	0.26	2.88	0.005	
			Upward contrast	-0.02	-0.15	0.882	
			Upward identification	-0.09	-1.00	0.319	
Girls	Step 1	0.10	SC-Social	-0.02	-0.21	0.832	6.13 (2,111)
			Attitudes	0.31	3.43	0.001	
	Step 2	0.21	SC-Social	-0.10	-1.04	0.302	3.53 (4,107)
			Attitudes	0.30	3.34	0.001	
			Upward contrast	-0.25	-2.26	0.026	
			Upward identification	0.03	0.33	0.745	
			Downward identification	-0.20	-1.88	0.063	
			Downward contrast	0.17	1.58	0.117	

Note. SC-L, language learning self-concept; SC-M, mathematics self-concept; SC-S, social self-concept; Attitudes, attitudes towards school.

SC-L ($F_{(3,234)} = 13.43$, $p < 0.001$, $R^2 = 0.15$). However, the interaction effects of upward contrast and gender as well as downward identification and gender were not significant ($p = 0.950$ and $p = 0.139$, respectively). A second analysis was performed to predict SC-M ($F_{(3,234)} = 14.46$, $p < 0.001$, $R^2 = 0.16$), and results showed that Attitudes ($\beta = 0.28$, $p < 0.001$, $sr^2 = 0.27$), downward identification ($\beta = -0.21$, $p < 0.0501$, $sr^2 = -0.21$) and gender ($\beta = -0.20$, $p < 0.01$, $sr^2 = -0.19$) were significant predictors. Results also showed that interaction effect of Attitudes and gender was not significant ($p = 0.292$), nor was the interaction effect of downward identification and gender ($p = 0.460$).

Results of stepwise multiple linear regression analyses are presented in Tables 3, 4. As show in Table 3, only downward identification ($sr^2 = -0.21$) was a significant and negative predictor for boys regarding the prediction of SC-L, indicating that the more they would tend to use this process the lower their

SC-L would be. For girls, beyond the positive contribution of Attitudes ($sr^2 = 0.19$), a negative effect of upward contrast ($sr^2 = -0.27$) on SC-L is found. Concerning the prediction of SC-M (see Table 4), a negative effect of upward contrast ($sr^2 = -0.20$) is found beyond the positive contribution of Attitudes ($sr^2 = 0.29$) for girls, while for boys only Attitudes are a significant predictor ($sr^2 = 0.25$).

DISCUSSION

This study had two main purposes: 1) to explore gender differences in self-concept (academic subject-specific and non-academic), attitudes towards school and social comparison processes; and 2) to explore the relative contribution of social comparison processes to academic subject-specific self-concepts by gender, beyond the influence of social self-concept and

attitudes towards school. Our results confirmed our hypotheses that girls in our sample engaged in more negative social comparison processes than boys (i.e., upward contrast and downward identification) and that upward identification was not a significant predictor of academic self-concept (for any of the observed subjects).

Regarding gender comparisons, results on academic self-concept are not surprising given that several studies have shown higher levels of mathematics self-concept among boys while girls reported higher levels of language learning self-concept (e.g., Bouffard et al., 2006; Marsh, 1989). Some studies, conducted with culturally similar samples to the present study, had nevertheless found that the social comparison processes preferentially used by students were upward identification and downward contrast (Boissicat et al., 2012; Bouffard et al., 2014). However, our results indicate that while we do find these preferences for boys, girls use upward and downward contrast equally after upward identification. As for downward identification, it is the least used process, regardless of gender.

Results of stepwise multiple linear regression analyses show that upward contrast best explains gender differences, with a stronger effect for girls. Attitudes towards school only explain gender differences in language learning self-concept. Furthermore, positive processes (i.e., upward identification and downward contrast) have no effect on either component of academic self-concept. Yet, Boissicat et al. (2012) reported a stronger negative influence of downward identification while upward identification had a positive but small contribution. These differences in results can be explained on the one hand by the fact that we conducted separate analyses by gender. Furthermore, it is clear that upward contrast (i.e., contrast with another student judged as having superior abilities) has a deleterious effect on self-concept in mathematics and language learning for girls, while it is only marginally significant for boys in language learning ($p = 0.08$). Thus, as suggested by Dumas and Huguet (2011), it would appear that the supposed positive effects of upward identification are insufficient to counteract the negative effects of upward contrast especially for girls and regardless of the subject concerned. The non-significant moderating effects of gender indicate that the effects of social comparison processes on subject-specific self-concepts do not vary substantially between girls and boys, as suggested by the correlations according to gender. The gender differences found in the social comparison processes could be explained by other moderating variables not taken into account in this study, such as “social comparison orientation” (SCO; Gibbons and Buunk 1999), which has not yet been studied in elementary school students (Dijkstra et al., 2008). SCO refers to “the extent to which and the frequency with which people compare themselves with others” (Dijkstra et al., 2010, p. 196). It turns out that individuals with a high SCO would seek out more social comparison and that these processes would also affect them more negatively (Buunk and Gibbons, 2006). Thus, it is possible that girls may be more sensitive to SCO. Furthermore, Bouffard et al. (2014) report moderate correlations (i.e., about 0.40) between negative social

comparison processes (i.e., upward contrast and downward identification) and school anxiety but unfortunately, they did not compare levels of such anxiety according to gender. We can nevertheless suppose that girls may have higher levels of SCO than boys, with negative social comparison processes having a greater impact on them and a greater risk of experiencing school anxiety in relation to the subject influenced by gender stereotypes (e.g., mathematics). Moreover, for girls, although upward contrast contributes to explain most of the variance in mathematics self-concept, downward identification is marginally significant ($p = 0.06$) while neither is significant for boys.

Limitations of the Study

However, the major limitation of our study is the induction of forced social comparison. Indeed, the latter can only be hypothetical and can therefore differ greatly from the voluntary and deliberate comparison carried out within the classroom, that is in which students can choose a real classmate with whom they compare themselves (Boissicat et al., 2020). In addition, forced social comparison may lead students to compare themselves on a dimension that is of little or no relevance to them, with the results producing effects not comparable to those obtained with deliberate social comparisons in subjects perceived as relevant by students (Dijkstra et al., 2008). Nevertheless, both types of social comparison (i.e., forced and deliberate) are important to consider because they can coexist in the classroom context. Generally, during forced comparisons, upward contrast effects are predominant, but upward identification effects may be added during deliberate comparisons for adaptive purposes (Dumas and Huguet, 2011). In particular, a qualitative study of 246 students between the ages of 10 and 11 found that forced comparisons were less common in the classroom setting, with students reporting that they were more likely to compare themselves if they could choose a friend to do so with (Webb-Williams, 2021). Moreover, forced comparison would only take place if they are struggling. Thus, when they deliberately compare themselves, students would choose targets of the same sex with a tendency to compare upward (Dumas and Huguet, 2011; Boissicat et al., 2020). The effects of upward social comparison are therefore complex in nature, and also depend on the type of comparison (forced vs. deliberate). According to Dumas and Huguet (2011), when students actively seek it out, its influence would be beneficial for academic self-concept and academic achievement. Moreover, not having considered students' academic achievement and grade-point average of classrooms is another limitation. For example, Webb-Williams (2021) found that students in low-ability group were more vulnerable to the negative effects of social comparison on self-evaluation and performance evaluation, and avoided upward comparisons. Knowing that the effect of social comparison on academic self-concept may be due to the Big-Fish-Little-Pond Effect (BFLPE; Marsh and Parker 1984), it is possible that high-achieving students may self-assess their competence as average or inferior if they are in a high-achieving class or school (and inversely). Yet, Huguet et al. (2009) showed that BFLPE was

rooted in the disadvantageous way students compared themselves to most of their classmates (i.e., forced under the pressure of the environment), but that beyond these comparisons students made comparison choices (i.e., deliberate and for adaptive purposes) that sometimes had a beneficial effect on their academic self-concept. Returning to the previously mentioned findings of Webb-Williams (2021), grouping students by ability levels would imply a forced comparison with students of the same levels, restricting the potential positive effect of deliberate comparison. All of these elements may thus explain why the positive effects of social comparison processes did not emerge in the results of the present study. A final limitation is the cross-sectional design of the study. Although Wolff et al. (2018) showed that social comparison had a stronger effect on academic self-concept than dimensional or temporal comparison, it seems important to conduct longitudinal studies that include multiple measurement times over a school year and within the same classroom to observe variations in social comparison processes and SCO levels across subjects.

CONCLUSION

Thus, recall the conclusion of the meta-analysis by Gerber et al. (2018), namely: “The common response to comparison is contrast: people increase their self-evaluations after downward comparison and decrease their self-evaluations after upward comparisons.” (p. 194). Even though our results must be interpreted with caution, it appears that upward contrast best explains gender differences in our sample, and its negative effect is not reduced by less frequent use or by more frequent implementation of others processes. Results of this study demonstrate the need to examine the evolution of social comparison processes over time, considering their impact on achievement as well as on students’ academic and social well-being from a gender perspective. This would also allow us to explore the existence of particular profiles and to assess their risk in order to implement strategies to limit their negative impacts on students. It also seems necessary to take into consideration different motivations for comparison (e.g., self-assessment, improvement, valorization) and its level of orientation (i.e., SCO). Making teachers aware of the existence of these social comparison processes appears to be

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an important issue. Knowing that some teachers may deliberately use social comparison within their classrooms (i.e., forced comparison), having knowledge about the influence of these processes on academic self-concept also seems relevant, as already highlighted by Wolff et al. (2018). These authors also indicate that comparison should above all be redirected to internal and temporal frames of reference with positive reinforcements and by highlighting opportunities for improvement among below-average performing students in order to strengthen their academic self-concept. This may also help them to objectively self-assess their academic competence.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not provided by the participants’ legal guardians/next of kin because Parents were informed by letters of the general objectives of the study, and could decline their child’s participation in the data collection. Under this condition, no refusals were recorded and the anonymity of the participants was preserved.

AUTHOR CONTRIBUTIONS

MV is the sole author of this submission and is accountable for the content of this work.

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