

# Motivation Gap and Achievement Gap Between Public and Private High Schools in the Philippines

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**Abstract** As in many countries, public school students in the Philippines have lower levels of achievement compared to private school students. We study whether there is a motivation gap related to this achievement gap by assessing a range of motivational constructs (sense of self, facilitating conditions, and achievement goals) drawn from personal investment theory of motivation, and examining how these constructs predict various school outcomes. Filipino students ( $N = 1,694$ ) enrolled in high school Chemistry from private and public high schools participated in the study. Multivariate Analysis of Variance indicated that public school students reported less support for schooling from their social groups, lower academic related self-concept, and lower achievement goals compared to private school students. Multiple regression analyses indicated that motivational variables explained a significant amount of variance in achievement and school engagement.

**Keywords** Achievement gap · Motivation · Public school · Private school · Achievement · School engagement · Philippines

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## Introduction

Achievement gaps can be found between social groups in different parts of the world. In some countries marked gaps in levels of achievement are found between males and females, between racial and/or ethnic groups, between urban, suburban, and rural school districts, among other groupings. In the Philippines, as it is in other countries, striking differences have been observed between students in public schools and those in private schools. The gap in achievement is often attributed to different educational inputs and processes in public and private schools. In this study, we explore a different aspect of these two types of schools by examining the motivational experiences of Filipino high school students in these two types of schools.

## Understanding the Achievement Gap in Public and Private Schools

Strictly speaking, the public and private sectors of education are differentiated mainly by ownership of the schools, which can be either government-owned or privately owned. In the Philippines, private schools are governed by private entities, typically, religious bodies or independent boards of trustees. Funding for these schools usually come from nonpublic sources such as tuition fees and other private sources, such as foundations, religious bodies, alumni, or other private donors. Public schools receive nearly all of their funding from the government, though additional funding can also be obtained through grants or donations from foundations or from parent- or student-initiated fundraising activities. Aside from ownership, many other important differences can be observed from the public and private sectors of education.

In many different parts of the world, students from public and private schools typically attain different levels of achievement, with students in private schools outperforming their public school counterparts in different measures of achievement (Carbonaro and Covay 2010; Coulson 2009). This gap between public and private schools has also been observed in the Philippine educational system (Chua 2000, 2008; Jimenez et al. 1991, 1988; Lockheed and Jimenez 1994; Lockheed and Zhao 1993; Yamauchi 2005). Data on the national achievement tests administered by the National Educational Testing and Research Center (NETRC) of the Department of Education show that the graduating secondary students from private school outperformed their counterparts in the public schools in school year 2007–2008 (mean percentage scores were 51.8 vs. 46.0, respectively), also in school year 2008–2009 (50.9 vs. 43.9) (Virola 2009). The most recent results indicate the same trend, and that the advantage of the private schools students was observed in all domains of the achievement test (Benito 2013).

Public schools operate differently from private schools in terms of funding, infrastructure, class sizes, among others; as such, the achievement gap is typically attributed to these operational differences. One factor that has been identified in the research literature is the degree of local autonomy or control over the management of teaching and learning activities in the school, which tends to be much lower in local community public schools in the Philippines (Lockheed and Zhao 1993). Research in various countries suggests that less external state-control is related to higher student achievement (Coulson 2009), but Philippine research is equivocal on the issue. Some research (Lockheed and Zhao 1993) indicates that local control is not systematically associated with the achievement gaps, but other research shows that increasing the autonomy of public school heads to manage their schools leads to higher achievement outcomes in public schools (Khattri et al. 2010; Lockheed and Jimenez 1994).

The achievement gap in public and private schools seems to be more systematically related to a range of social- and school-related factors. For example, students in private schools in the Philippines tend to come from higher income households that have more access to reading materials, more exposure to various media, and have more educated mothers (Jimenez et al. 1991; Lockheed and Zhao 1993); these factors strongly predict achievement of Filipino students across different types of schools (Lockheed and Zhao 1993). However, even after controlling for socioeconomic factors, the achievement gap between private and public school still persists (Jimenez et al. 1988, 1991). Some observers suggest that the achievement gap is associated with differences in level of expenditures in the two types of schools (Chua 2000), but other studies

indicate that the expenses of private schools are actually less than public schools and that private schools operate more efficiently (Jimenez et al. 1988). Selectivity of students has also been suggested as a factor that explains the achievement gap (Yamauchi 2005) but there is no strong empirical evidence for this conjecture; indeed, some private schools may have very open admission policies in order to meet their revenue targets derived from tuition fees. Instead, it seems that the achievement gap may be related to factors closer to the learning process. For example, in a study that compared science achievement in private and public schools in the Philippines, the higher science achievement of students in the private schools seems to be associated with stronger teacher education (i.e., teachers' level of science education at post-secondary level), more instructional planning and use of science laboratories by the teachers of science subjects (Lockheed and Zhao 1993).

### A Motivation Gap?

There is some indication that factors related to students' motivation may be related to the achievement gaps between private and public schools in the Philippines. The study cited in the preceding paragraph also found more positive attitudes towards science subjects among the students from private schools, who also expended more effort on homework and assignment (Lockheed and Zhao 1993). The researchers in this study discussed these differences in levels of effort and autonomous study as indicators of differences in motivation.

But psychological theories and research on motivation and learning suggest that motivation does not only refer to student attributes such as attitudes and effort. Instead, differences in motivation may arise from different sets of experiences that the students from the two types of schools have. Individuals construct cognitive representations of their physical and social environment, and that cognitive, affective, and even physiological responses related to these representations shape individuals' behaviors within the environment (Bandura 2001). The effects of the external environment on behavior is not direct; instead, the environment affects behavior to the degree to which the environment, as perceived by individuals, influences the individuals' goals, self-beliefs, affective states, and other self-regulatory processes (Bandura 2001). This perspective can be applied to understand student behaviors in schools and variations of these theoretical applications assume that the influence of the students' perceptions of their school or classroom environment on their behaviors is mediated by a range of motivational beliefs (Church et al. 2001; Patrick et al. 2007). Applying these perspectives to the students in the private and public education sector in the Philippines,

we propose that these two groups of students are likely to also have distinct motivations that emerge from their different school environments and experiences, and that are associated with varying levels of achievement and other important school outcomes.

### Personal Investment Theory

There are several comprehensive theories of motivations in schools such as expectancy value theory (Wigfield 1997), attribution theory (Weiner 1992), goal-orientation theory (Ames 1992), and self-determination theory (Ryan and Deci 2000). Another comprehensive theory of motivation in schools is personal investment theory (Maehr and Braskamp 1986; Maehr and McInerney 2004; McInerney and Liem 2009). The theory draws from some of the basic assumptions of social cognitive theory (Bandura 2001) in asserting that students' motivations are associated with their perceptions of support and value for education within their social environment and their own beliefs about themselves as learners. The theory has proven to be effective in studying the motivation of students from different backgrounds, and is thus a good theory to try to understand the possible distinct motivations of students in the private and public schools in the Philippines.

Personal investment theory defines three important facets of meaning which are crucial in determining the quality of motivation and achievement of students in school: (1) facilitating conditions, (2) sense of self, and (3) achievement goals. We briefly discuss these three facets of meaning in the following subsections.

#### *Facilitating Conditions*

Facilitating conditions are defined as the students' perceptions of support from significant individuals in the social network such as parents, teachers, and peers. Research has demonstrated that the perceived support from parents, teachers, and peers may facilitate or inhibit students' engagement in learning (Bernardo and Ismail 2010; Martin and Dowson 2009). There are a number of specific dimensions of these facilitating conditions, which include parental support, teacher support, peer help, the perception that significant others want you to leave school (leave school), the perception that others are proud of your schoolwork (pride from others), negative parental influence, negative and positive peer influence (McInerney et al. 2005).

#### *Sense of Self*

Sense of self refers to the more or less organized collections of perceptions, beliefs, and feelings related to who

one is (Maehr and Braskamp 1986). The sense of self is presumed to be composed of a number of components such as positive and negative self-concept, self-reliance, and sense of purpose, each contributing to the motivational orientation of the individual. An individual's sense of self has important implications for school adjustment, satisfaction and aspirations (Valentine et al. 2004).

#### *Achievement Goals*

Achievement goals refer to the reasons identified for involvement in a learning activity, and include such incentives as recognition, mastery, competition and affiliation (Maehr and McInerney 2004). Goals are mental representations of individuals' competence strivings during achievement activities that can facilitate individual's engagement in an activity. Personal investment theory identifies the following goals as crucial to understanding motivation in school: mastery goals, performance goals, social goals, and extrinsic goals (Maehr and Braskamp 1986). Mastery goals refer to the desire to improve one's level of competence, whereas performance goals refer to wanting to achieve in order to demonstrate that one is better than other peers. Social goals refer to the striving to feel a sense of belonging to the group, and extrinsic goals refer to the desire to receive social recognition and status from achievement in school (McInerney and Liem 2009). Students can pursue different and multiple types of goals which can exert an important influence on engagement and achievement in school (Dela Rosa and Bernardo 2013).

#### The Present Study

In this study, we attempt to expand the discourse on the private–public school achievement gap in the Philippines (and perhaps in other countries, too), by exploring how motivational sets of students in the two sectors are associated with educational outcomes. At the outset we should assert that we are not assuming that motivation can completely account for the achievement gap between students in private and public schools. Indeed, there are host of other important factors (e.g., education of parents, income and availability educational resources at home, financial and learning resources in school, etc.) that may also account for the private–public school achievement gap in the Philippines. These other factors may be also correlated with student motivation, but we are not addressing these factors in the present study. Instead, we focus only on motivation as a predictor of achievement as it is has been largely ignored in discourses related to the achievement gap in the Philippines. Student motivation is a crucial factor to understand, particularly as it is an aspect of the school experience that educators can work on with students.

We utilize the framework of personal investment theory to first examine the motivational profiles of adolescent students from public and private high schools in the Philippines who were enrolled in high school chemistry. We chose to focus the scope of the study on motivation and learning in one specific domain instead of on (domain-) general academic motivation and learning as previous research has established that there are significant variations in motivation across domains, and that the relationship between motivation and learning is stronger within domain (Bong 2001; Wigfield 1997). We then investigate how specific facets of the students' motivation predict achievement in their chemistry class and other learning outcomes. We profile all the dimensions of the facets of meaning in the personal investment theory defined in the previous section (facilitating conditions, sense of self, and achievement goals). To determine whether these motivational variables influence students' engagement and achievement in school, we looked at different indicators of engagement—*affect in school*, *intention for further education*, and *valuing school*—and achievement. *Affect in school* refers to how the students feel in school, which is an established indicator of how emotionally engaged students are (Skinner et al. 2009) and is also a good predictor of learning and achievement of students in Philippine schools (Villavicencio and Bernardo 2013). *Intention for further education* refers to whether the high school students want to pursue further studies (i.e., university or college) or not. This outcome is particularly interesting in the Philippine context as the country only has a 28 % enrollment rate in further education (i.e., college or university) after graduating from high school (compared to 89 % in the USA, World Bank 2012). Finally, *valuing for school* refers to the degree of importance that students place on academics. Previous research indicates that although Filipino students see the abstract value of education, they have lower beliefs regarding the pragmatic or instrumental value of completing higher education or achieving in education (Bernardo 2003). These three indicators of school engagement were measured through self-reports, while student achievement was measured using a standardized achievement test in chemistry.

To summarize, the present study was designed to answer the following questions:

1. How similar or different are the perceived facilitating conditions, sense of self, and achievement goals of Filipino students from private and public schools?
2. How similar or different are the school outcomes for the public and private school students?
3. Do the three facets of meaning of personal investment theory predict engagement and achievement for the Filipino students from private and public school?

## Method

### Participants

The participants of this study were 1,694 third year high school students (695 boys, 999 girls) recruited from four secondary schools in Metro Manila (Chemistry is required in the national curriculum for third year high school or 9th grade of basic education). Only students who were present during the duration of three waves of data collection were involved in the study. The average size of students in a public school class was 55 while private schools' average size was 35. The mean age of participants was 14.54 years ( $SD = .95$ ). Specifically, 823 participants (363 boys, 460 girls; mean age = 14.29,  $SD = .96$ ) were from public schools, and 871 participants (539 boys, 332 girls; mean age = 14.80,  $SD = .89$ ) represented the private schools.

### Measures

We utilized the validated Filipino versions of the Facilitating Conditions Questionnaire (Ganotice et al. 2013), Sense of Self Scale, (Ganotice and Bernardo 2010; King et al. 2012a), and the Inventory of School Motivation (Ganotice et al. 2012). These previous validation studies tested the structural validity of the factors of the various scales using confirmatory factor analytic procedures, and establish between construct validity of the factors by looking at correlations with relevant indicators. All the measures used a 5-point Likert scale with response categories ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

#### *Facilitating Conditions Questionnaire*

The Facilitating Conditions Questionnaire (FCQ) was used (McInerney et al. 2005). Dimensions included: (1) *parent support*, the degree of student's perception of positive parental support (6 items, e.g., "My mother helps me with my school work.";  $\alpha = .96$ ); (2) *negative parent influence*, the student's perception of negative influence from the parents (5 items, e.g., "My father doesn't pay any attention when I bring home report cards.";  $\alpha = .82$ ); (3) *teacher support*, a student's perception of positive support from teachers (6 items, e.g. "Teachers are positive to me at school.";  $\alpha = .79$ ); (4) *peer help*, student's perception of support from peers (5 items, e.g., "Some of my friends help me with my school work.";  $\alpha = .88$ ); (5) *negative peer influence*, a student's perception of negative peer support (4 items, e.g., "Some of my friends tell me I should leave school when I can.";  $\alpha = .96$ ); (6) *positive peer influence*, the degree a student perceives their peers value schooling, (4 items, e.g., "Most students in my class will go on to

college or university.”;  $\alpha = .78$ ); (7) *leave school*, a student’s perception of influences on leaving school (4 items, e.g., “My mother doesn’t mind if I leave school when I want to.”;  $\alpha = .79$ ); (8) *pride from others*, the importance to a student the pride from others in his/her school achievement (4 items, e.g., “It’s important for my father to be proud of my school work.”;  $\alpha = .80$ ).

#### *Sense of Self Scale*

The 26-item Sense of Self (SOS) Scale (McInerney et al. 2001) measures four components of the sense of self: sense of purpose, self-reliance, negative self-concept, and positive self-concept. *Sense of Purpose* refers to the degree to which a student values school for the future. Further, this is aspiration for future education and career prospects (6 items, e.g. “I want to do well at school so that I can have a good future.”;  $\alpha = .88$ ). *Self-reliance* refers to the degree to which a student is self-reliant and confident within academic settings (8 items, e.g., “I often try new things on my own.”;  $\alpha = .96$ ). *Negative Self-Concept* refers to the extent to which a student holds negative attitudes about his/her general intellectual ability at school (7 items, e.g., “I am always getting into trouble in school.”;  $\alpha = .93$ ); and *Positive Self-Concept* refers to the degree to which a student holds positive feelings about his/her general intellectual ability in school (5 items, e.g., “I think I am as good as everybody else at school.”;  $\alpha = .90$ ).

#### *Inventory of School Motivation*

The Inventory of School Motivation (ISM, McInerney and Ali 2006) was designed to measure four types of achievement goals: mastery, performance, social, and extrinsic goals. *Mastery goal* is defined as the degree to which a student is motivated by the desire to increase self-referenced competence (12 items, e.g., “I try hard at school because I am interested in my schoolwork.”;  $\alpha = .93$ ). *Performance goal* is the degree to which a student is motivated by competitive other-referenced goals (12 items, e.g., “I want to do well at school to be better than my classmates.”;  $\alpha = .90$ ). *Extrinsic goal* refers to the degree to which a student is motivated by social recognition and rewards (12 items, e.g., “Praise from my parents for good schoolwork is important to me.”;  $\alpha = .79$ ). *Social goal* refers to a concern for other students and a willingness to help them with their school work (8 items, e.g. “I like to help other students do well at school.”;  $\alpha = .83$ ).

#### *Learning Engagement*

To measure student engagement in learning, three scales developed by McInerney and colleagues (2005) were used:

(1) *intention for further education scale*: the plan of a student to continue his/her education in college or university (5 items, e.g., “I intend to go on to college or university”;  $\alpha = .82$ ); (2) *school valuing scale*: the degree to which the a student values education (9 items, e.g., “Education is important for me to get a job”;  $\alpha = .75$ ); and (3) *positive affect for schooling scale*: the degree to which the student appears to like school (3 items, e.g., “Subjects at school interest me”;  $\alpha = .96$ ).

#### *Achievement Test*

The 75-item First Quarter Chemistry Achievement Test (FQCAT), which has previously been validated for use among third year high school students in the Philippines, was used for this purpose. The FQCAT is a curriculum-based achievement test that was developed with reference to the national minimum learning competencies for chemistry for the first quarter of the academic year.

## Results

Means and standard deviations were calculated for each construct of the constructs involved in this study. Group means in all the constructs—sense of self, facilitating conditions, and achievement goals—were noticeably different between groups (see Table 1).

#### Public–Private School Comparisons

##### *Facilitating Conditions*

The MANOVA conducted involving the eight facilitating conditions indicated significant differences between the public and private school groups;  $F(8, 1685) = 203.09$ ,  $p = .0001$ . Follow-up univariate analyses revealed those from private schools reported higher degree of the positive facilitating conditions: parent support, teacher support, and peer help all with large effect sizes, and also higher positive peer influence but with a small effect size (see top portion of Table 1). Those from public schools reported significantly higher scores on the negative facilitating conditions: negative parent influence, negative peer influence, and influence to leave school—the first two with large effect sizes. The only facilitating condition where the two groups were not different was in pride from others.

##### *Sense of Self*

An overall MANOVA indicated that there were significant differences between the public and private school participants on the sense of self constructs;  $F(4, 1689) = 181.64$ ,

**Table 1** Descriptive statistics of study variables and results of the follow-up univariate tests

Variable	Public schools		Private schools		$F(1, 1692)$	$p$	$\eta^2$
	$M$	SD	$M$	SD			
Facilitating conditions							
Parental support	3.45	1.30	4.57	0.60	518.98	.0001	.23
Teacher support	3.41	0.75	4.41	0.64	855.79	.0001	.33
Peer help	3.44	0.80	4.57	0.61	1056.27	.0001	.38
Pride from others	3.96	0.80	3.94	0.85	0.56	n.s.	.00
Positive peer influence	1.79	0.65	2.31	1.38	96.56	.0001	.05
Negative peer influence	2.91	1.50	1.46	0.74	635.81	.0001	.27
Negative parental influence	3.14	1.38	1.44	0.77	988.64	.0001	.36
Leave school	1.57	0.73	1.23	0.62	94.66	.0001	.05
Sense of self							
Sense of purpose	3.68	1.22	4.67	0.63	440.11	.0001	.20
Sense of reliance	3.34	1.22	4.45	0.62	290.95	.0001	.14
Negative self-concept	2.69	1.41	2.06	0.77	127.086	.0001	.06
Positive self-concept	3.67	0.89	4.47	0.60	558.12	.0001	.24
Achievement goals							
Mastery goals	3.72	0.97	4.57	0.58	474.73	.0001	.21
Performance goals	3.34	1.28	4.17	0.62	290.95	.0001	.14
Social goals	3.86	0.55	4.27	0.67	188.95	.0001	.10
Extrinsic goals	3.65	0.94	4.49	0.63	473.66	.0001	.21
School outcomes							
Positive affect for school	4.12	0.02	3.80	0.02	79.41	.0001	.05
Intention for further education	4.42	1.21	4.82	0.88	224.21	.0001	.12
Valuing of school	4.43	1.03	4.62	0.59	66.10	.0001	.04
Chemistry achievement	25.95	7.63	47.69	8.87	2904.04	.0001	.63

*Note* To control for the familywise error due to multiple comparisons in the univariate analysis, the critical  $p$  values were adjusted using the Bonferroni correction. For facilitating conditions subscales, adjusted critical  $p$  value = .00625; for sense of self, achievement goals, and school outcomes, adjusted critical  $p$  value = .0125

$p = .0001$ . Univariate analysis indicated that those from private schools reported higher sense of purpose, self-reliance, and positive self-concept, all with large effect sizes (see middle portion of Table 1). On the other hand, public school students were significantly higher in negative self-concept, but with a small effect size.

#### Achievement Goals

For achievement goals, the overall MANOVA results indicated a significant main effect between the two groups on the four achievement goals;  $F(4, 1689) = 152.38$ ,  $p = .0001$ . Univariate tests indicated that private school students were higher in all the achievement goals, with moderate to large effect sizes (see lower portion of Table 1).

#### School Outcomes

An overall MANOVA was conducted across the three self-report school engagement measures (i.e., university

intention, affect to school, and school valuing) and indicated significant overall differences between the public and private high school students,  $F(3, 1,690) = 111.27$ ,  $p = .0001$ . Subsequent univariate analysis indicated that public school students indicated higher degree of *affect to school* (with a small effect size), while their private school counterparts were significantly higher on *intention for further education and school valuing* (also with relatively small effect sizes) (see bottom portion of Table 1). For the objective achievement test, results also showed that private school students had higher scores, with a very large effect size.

#### Relationship of Motivational Variables to School Outcomes

Another objective of this study was to determine the predictive ability of various components of personal investment theory (i.e., facilitating conditions, sense of self, and achievement goals) in determining the school outcomes of

the students in the two types of high schools. The results of the various analyses indicated some similar predictors of the school outcomes for the two groups of students, and also some notable differences.

*Facilitating Conditions as Predictor of School Outcomes*

The various regression analyses that regressed the school outcomes on the eight different facilitating conditions all indicated that the facilitating conditions explained a significant amount of variance in each of the four outcomes (see Table 2). However, the relationship between the facilitating conditions and the outcomes were not always the same for the two groups of students. For example, teacher support and influences on leaving school were associated with achievement in public school students, but not in private schools student; instead both negative peer and parental influence scores were associated with achievement in private school students. On the other hand, pride from others and influences for leaving school were similarly associated with the three engagement measures for both private and public school students. But interestingly, positive peer influence to stay in school was consistently negatively associated with the engagement outcomes in the public school students, but not in the private school students. Teacher support was also associated with achievement in the public school students, but

was associated with positive affect for schooling in the private school students.

*Sense of Self as Predictor of School Outcomes*

The sense of self variables did not account for as much variance in the school outcomes as did the facilitating conditions (see Table 3). The sense of self variables seemed to explain more of the variance of the engagement outcomes for the private school students (the  $R^2$ s were significant, although small) compared to the public school students (the  $R^2$ s were mostly not significant). Interestingly, the private school students who have less positive academic self-concept and lower sense of purpose seemed to have more positive affect about schooling. Although sense of self explained a significant amount of variance in the achievement scores of both groups, sense of purpose and self-reliance predict achievement in the private school students, whereas positive self-concept predicts achievement in the public school students.

*Achievement Goals as Predictors of School Outcomes*

Achievement goals also accounted for a significant amount of the variance in all the school outcomes for both groups of high schools students, except for intention for further intention in private high school students (see Table 4). But

**Table 2** Hierarchical regression analyses for facilitating conditions as predictors of school outcomes

	Positive affect for schooling		Intention for further education		Valuing of school		Chemistry achievement	
	Public	Private	Public	Private	Public	Private	Public	Private
Step 1								
Age	.00	.04	-.03	-.00	-.01	-.01	-.14***	.01
Gender	.01	-.00	.08	.22***	.06	.10*	.07	.36***
$R^2$	.00	.00	.01*	.05***	.00	.01*	.02***	.13***
Step 2								
Age	.02	.05	-.01	.04	.01	.04	-.13**	.07*
Gender	-.02	.00	.06	.12***	.03	.01	-.06	.22***
Parental support	-.11	.42	.03	-.19	-.00	.13	.13	.35
Teacher support	.05	.16**	-.07	-.06	-.02	-.00	.30***	.07
Peer help	.01	-.36	.11	.17	.09	-.015	-.13	-.25
Pride from others	.24***	.43***	.12**	.27***	.22***	.41***	-.04	-.04
Positive peer influence	-.19***	.04	-.23***	-.04	-.31***	-.04	.01	-.01
Negative peer influence	-.07	.15*	.08	-.17**	.03	-.06	-.09	-.21***
Negative parental influence	.04	.03	-.06	-.05	-.01	-.04	-.03	-.15**
Leave school	-.15***	-.12**	-.20***	-.29***	-.22***	-.37***	-.17***	.08
$R^2$	.18***	.26***	.17***	.36***	.30***	.40***	.18***	.34***
$\Delta R^2$	.18***	.26***	.16***	.31***	.30***	.39***	.16***	.22***

Note Only standardized parameter estimates are shown

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 3** Hierarchical regression analyses for sense of self as predictors of school outcomes

	Positive affect for schooling		Intention for further education		Valuing of school		Chemistry achievement	
	Public	Private	Public	Private	Public	Private	Public	Private
Step 1								
Age	.00	.04	-.03	-.00	-.01	-.01	-.14***	.01
Gender	.01	-.00	.08	.22***	.06	.10*	.07	.36***
$R^2$	.00	.00	.01*	.05***	.00	.00	.02***	.13***
Step 2								
Age	-.00	.06	-.03	.01	-.01	.01	-.14***	.06
Gender	.01	-.01	.09	.21***	.07	.08*	-.05	.27***
Sense of purpose	-.10	-.24**	.03	-.05	-.09	-.02	.12	.28***
Sense of responsibility	.21*	-.03	-.08	.02	.13	-.01	-.01	.12*
Positive self-concept	-.11	-.18**	.01*	.04	-.04	-.11*	.18**	-.06
Negative self-concept	-.00	.25***	-.12*	-.08	-.08	.07	-.06	-.02
$R^2$	.01	.06***	.02*	.06***	.01	.03**	.13***	.32***
$\Delta R^2$	.01	.06***	.01*	.01	.01	.02**	.10***	.19***

Note Only standardized parameter estimates are shown

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .0001$

there were mostly distinct patterns of predictors for the outcomes for the two groups of students. For example, social goals consistently predicted the engagement outcomes in public school students, but extrinsic goals negatively predicted two of the three engagement outcomes in private high school students. Extrinsic goals also predicted outcomes in opposite directions for the two groups of students.

## Discussion

The results of the achievement test provide evidence of the achievement gap between public and private schools students in the Philippines, in this case for the specific subject of chemistry. The results also suggest similar gaps in the school outcomes related to engagement: although the public school students had more positive affect about schooling, they were less likely to express the valuing of schooling and their intention to pursue further schooling beyond high school. More importantly, as we expected, there also seems to be a motivation gap that is related to the achievement gap. We discuss the possible meaning and implications of these results below.

The results indicated that public school students had less adaptive motivational profiles compared to private school students in terms of the three facets of meaning in personal investment theory. More specifically, with regard to facilitating conditions, public school students reported lower scores on parent support, teacher support, peer help, and positive peer influence, but higher negative peer and parental influence, and influences to leave school. This

indicates that public school students' social groups were less supportive of their educational pursuits compared to their private school counterparts. The significance of this motivation gap related to facilitating conditions is seen when the relationship with school outcomes is considered. Achievement was predicted by teacher support in public school students. The result suggests that if more public school students sense stronger support for their academic endeavours from their teachers, we may see improvement in their achievement.

Focusing on the students' self-related beliefs, public school students reported lower levels of self-reliance, sense of purpose, and positive self-concept and higher levels of negative self-concept compared to their private school counterparts. Research on self-concept has shown that it is strongly associated to academic achievement (Valentine et al. 2004) and this was the case with the public school students, where positive self-concept was a predictor of their achievement in chemistry. But sense of self was not a strong predictor of school engagement in the public school students as indicated by the low  $R^2$  values. However, the results showed how positive and negative self-concept predicted intentions for higher education, and this is significant given that intentions for further education was lower in the public school students compared to their private school counterparts.

The public schools students also reported lower levels of all achievement goals compared to private school students, which may be a reflection the low levels of social support and personal self-beliefs related to learning. In other words, the public school students may not set as high achievement goals as those from private schools because there is not



**Table 4** Hierarchical regression analyses for achievement goals as predictors of school outcomes

	Positive affect for schooling		Intention for further education		Valuing of school		Chemistry achievement	
	Public	Private	Public	Private	Public	Private	Public	Private
<b>Step 1</b>								
Age	.00	.04	-.03	-.00	-.01	-.01	-.14***	.01
Gender	.01	-.00	.08	.22***	.06	.10*	.07	.36***
R <sup>2</sup>	.00	.00	.01*	.05***	.00	.01*	.02***	.13***
<b>Step 2</b>								
Age	-.00	.06	-.04	.01	-.02	.01	-.15***	.04
Gender	-.01	.00	.06	.20***	.02	.08*	-.05	.23***
Mastery	.03	.33***	-.02	.11	.19*	.22**	.29**	.12
Performance	-.12	-.06	.00	-.04	-.31***	-.01	.09	.05
Social	.15***	.27***	.20***	.00	.28***	.11	.01	-.11*
Extrinsic	.10*	-.45***	.08	-.02	.22***	-.20**	-.10*	.41***
R <sup>2</sup>	.03**	.09***	.06***	.05***	.14***	.04***	.13***	.34***
ΔR <sup>2</sup>	.03***	.09***	.05***	.01	.14***	.03***	.11***	.21***

Note Only standardized parameter estimates are shown

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .0001$

much social support for it and they do not enough positive self-beliefs to do so. Our research does not directly test this idea, but this possibility could be tested in future research studies. Even as the public school students reported lower levels of achievement goals, these goals were significantly related to the school outcomes in important ways. For example, mastery goals predicted both achievement and value for schooling, whereas performance goals negatively predicted value for schooling. Most interestingly, social goals predicted all school engagement outcomes in public school students. Feeling a sense of belonging is an important factor in keeping the public school students engaged. Numerous research studies on motivation of Filipino students has emphasized the importance of social goals (Bernardo 2008; Bernardo et al. 2008; King and Watkins 2012; King et al. 2012b, 2013), but the results of the study underscore the importance of such goals in the experience of public school students in particular.

At this point we acknowledge some limitations in our study. We sampled private and public schools in the Metro Manila, which is the most densely populated urban center in the Philippines and thus, where there is a high concentration and also a higher contrast between the operations of public and private schools. The operational and social environments of public and private schools in other parts of the country may not be as markedly different in other parts. Moreover, the data on the motivational variables were also collected at one point in time; in this regard, a longitudinal research design would be needed to reveal the temporal precedence and or interaction among the three facets of meaning and their effects on school outcomes. It would

have also been better to assess the impact of the motivation gap on school outcomes by controlling other known factors (both at the individual and the school level) that influence school engagement and achievement.

These limitations notwithstanding, we believe that the results of our study reveal an important dimension of the achievement gap between public and private schools in the Philippines. By looking at a wide array of motivational constructs drawn from personal investment theory, we were able to have a comprehensive picture of the motivational differences between private and public school students, and how these differences relate to important school outcomes. We realize that there is a complex array of interaction organizational, political, economic, social, and even historical factors that have shaped and that will continue to shape the achievement gap between students in public and private schools in the Philippines, but we hope that our study calls attention to an important gap in the educational experiences of Filipino students in the public schools as part of the broader collective efforts at improving the educational experiences and outcomes of the disadvantaged groups in the country. Together with efforts to create greater efficiency, better facilities, and stronger instructional processes in the public schools, there should be parallel efforts to ensure that the students' social environment of family, teachers, and peers support achievement, encourage mastery goals, and positive self-concepts as learners.

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