



## The Development and Validation of the Positive Schools Scale

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**Abstract** Schools are ecological assets that contribute to positive youth development. Anchored on the positive youth development (PYD) perspective, Gomez and Ang (2007) proposed that schools can promote the five Cs of PYD if the following components are present: positive people, positive places, and positive opportunities. The study sought to develop and validate a scale that would assess the extent to which schools are perceived to be promoting PYD among adolescents. The proposed 30-item Positive Schools Scale was pretested to a sample of 496 adolescents aged 13 to 21 from two private high schools and two private universities in the Philippines. The reliability of the scale was established using Cronbach's alpha. The structural validity of the scale was also confirmed using confirmatory factor analysis, while external validity was established by modeling the relationship between the Positive Schools Scale and existing measures of the five Cs of PYD.

**Keywords:** Positive Youth Development, Positive Schools

Schools play an important role in the development of youth. Schools have been thought of as contexts where development takes place (Eccles & Roeser, 2009). Drawing from the positive youth development (PYD) perspective of Lerner (2005), Gomez and Ang (2007) proposed that schools can be the prime focus for the promotion of PYD because (a) children and adolescents spend most of their waking hours in schools; (b) school environments influence adolescents' identity formation, cognitive and social development, peer relations, and vocational development; (c) positive school experiences and opportunities promote adolescent resilience and positive development (Olsson, Bond, Burns, Vella-Brodrick, & Sawyer, 2003); and (d) schools have the resources and infrastructure needed for program interventions that address PYD.

Gomez and Ang (2007) posited that schools can promote positive youth development if the following three areas are present: *Positive People*, *Positive Places*, and *Positive Opportunities*. *Positive People* are defined as adults who recognize and respond to adolescents' need for continuous support in their

development and their need to be connected to others (Roth & Brooks-Gunn, 2003). Zeldin, Christens, & Powers (2012) noted that when the youth participate in organizational and community life, with the presence of caring adults, their experiences can help contribute to positive youth and civic development, particularly in the aspects of empowerment, critical consciousness, personal and social well-being, initiative, and purpose. Scales, Benson, and Mannes (2006) hypothesized that adults can positively shape young people's development by providing support, empowerment, boundaries, and non-family adult role models. Thus, caring adults can contribute to the positive development of youth by providing guidance, affection, modeling, monitoring, belongingness, and norm setting. Rosenfeld, Richman, and Bowen (2000), however, point out that students must first recognize and access the support available to them in schools so that positive youth development can take place.

Gomez and Ang (2007) refer to *Positive Places* as a school environment that has healthy boundaries, a safe and caring climate, and a supportive environment for school personnel. Healthy boundaries refer to Bryk and Schneider's (1996) concept of relational trust in schools, which refers to interpersonal social exchanges that take place in a school community. According to Bryk and Schneider (1996), the basic elements of relational trust are respect, competence, personal regard for others, and integrity. Respect entails that the role each person plays in a child's education is recognized. Competence refers to the ability one has to achieve the desired outcomes. Personal regard for others is the perception of how one goes beyond what is required of their role in their caring for another person. Finally, integrity can be described as the consistency between what people say and what they do.

Schools are positive places if students are physically and emotionally safe and perceive that they are cared about and valued (Gomez and Ang, 2007). Doll (2010) noted that a school's climate positively predicts the academic success of its students as well as the degree to which they actively participate in learning as seen through their attendance, attentiveness in class, completion of assignments, and commitment to staying in school. Students' perceived teacher support, peer support, student autonomy, and clarity and consistency in school rules are strongly associated with the psychological or behavioral adjustment of adolescents (Way, Reddy, & Rhodes, 2007). A third component of *Positive Places* is a supportive environment for personnel. Gomez and Ang (2007) describe a supportive environment for personnel as one where teachers feel supported by school leaders and community stakeholders in relation to their needs for competence, autonomy, and quality relationships.

*Positive Opportunities* refer to those activities or programs that promote development of some or all of the six Cs of PYD: competence, confidence, connections, character, caring, and contribution to society (Gomez & Ang, 2007). These opportunities may either be within the structured curriculum or outside of classroom time, from sports to extra-curricular activities, to social-emotional learning (SEL) practices in the classroom.

## Positive Youth Development

The positive schools framework of Gomez and Ang (2007) is grounded on the positive youth development (PYD) perspective. This perspective, which emerged in the early 1990s, veers away from the traditional view of the adolescent stage as a period of “storm and stress” in which the youth are seen as “broken” or in danger of being broken, or as problems to be managed (Hall, 1904). According to G. Stanley Hall, who initiated the scientific study of adolescence, this period is characterized by adolescents’ tendency to question and contradict their parents, mood disruptions, and a propensity for reckless and antisocial behavior (Arnett, 1999). Thus, prior to the 1990s, the positive development of youth was seen as the absence of negative or undesirable behaviors. An adolescent manifesting a positive behavior was someone who was not taking drugs or alcohol, not engaging in unsafe sex, and not involved in crime or violence (Lerner, 2005).

In the early years of the 21<sup>st</sup> century, a new framework for adolescent development emerged. This recent conception of adolescents is based on the idea that every young person has the potential for successful, healthy development, and that all youth possess the facility for positive development (Lerner et al., 2005). The notion that the youth are resources to be developed has evolved because of the growth of developmental-systems theoretical models. These models emphasize that changes across the life span are driven by the dynamic and systemic (i.e., bidirectional and mutually influential) relations among the various levels of the ecology of human development (e.g., families, peer groups, schools, communities, and culture), all changing interdependently across time (Lerner et al., 2003). Developmental systems theory proposes the relative plasticity of human development, that is, the capacity for systematic change in structure or function throughout life span development (Lerner et al., 2005). Because of the presence of relative plasticity, there is a valid reason to be optimistic and to search proactively for characteristics of individuals and of their ecologies that, when aligned, can promote developmental change (Lerner, Dowling, & Anderson, 2003). Instead of focusing on the problems that youth have, this paradigm considers the strengths, competencies, and contributions that youth can make and the ways in which resources in the environment can be aligned with such strengths to fully maximize the healthy development of individuals (Theokas et al., 2005).

Furthermore, relative plasticity is the foundation for an applied developmental science that is focused on enhancing human development by strengthening adaptive developmental regulations, which are interrelations between an individual and his or her context that maintain and enable healthy, positive functioning for all aspects of the relationship. Healthy development occurs when there are positive changes in the relation between a developing person and the community (Lerner et al., 2003). When a young person is committed and is able to contribute positively in culturally defined ways to self, family, and community, he or she is said to be thriving and is on the path

towards “idealized personhood,” which is an adult status characterized by making culturally valued contributions self, others, and institutions (Csikzentmihalyi & Rathunde, 1998). These mutually beneficial relations are thought to lead a young person to make various contributions that would benefit both individual development and the welfare of civil society (Phelps et al., 2009).

Theokas et al. (2005) refer to thriving as a change or a process, and not a trait or a state. Thus, an individual is said to be thriving if he or she is functioning across time and place to interact with an active context in such a way that both the individual and the setting are enhanced. However, an individual’s behavior need not match with his or her context at all times; instead, the developing person must be able to adjust his or her behavior in order to meet changing opportunities and challenges. Thriving, therefore, suggests a range of behaviors that reflect a fit with the context, implying that there would be differences within individuals across time and differences between individuals within multiple settings (family, school, and community) of one’s context.

Similarly, Lerner, Lerner, Von Eye, Bowers, and Lewin-Bizan (2011) view thriving as a growth of attributes that indicates a flourishing, healthy young person, that is, the characteristics known as the five Cs of PYD - competence, confidence, character, connection, and caring. Originally proposed by Eccles and Gootman (2002) and Roth and Brooks-Gunn (2003), the Five Cs Model of PYD has been found to be the most empirically supported framework to date, according to a review of PYD frameworks done by Heck and Subramaniam (2009). The definitions of the Five Cs of PYD was provided by Lerner et al. (2005).

The fundamental hypothesis being tested in the PYD developmental process is that if the individual assets or strengths of youth can be aligned with the resources for positive growth found in families, schools, and communities, then young people’s healthy development may be optimized (Lerner et al., 2011). Furthermore, if the youth are involved in adaptive developmental regulations or mutually beneficial individual/context relations, then a thriving young person should be positively engaged with the context that is benefitting them, and in turn, generate contributions to self, family, community, and civil society. Positive youth development, in effect, makes adolescents less prone to engage in problem or risky behaviors (Lerner et al., 2005).

The PYD indicates that the developmental process involved in PYD entails adaptive developmental regulations between individual assets (i.e., strengths of youth) and developmental assets existing in their ecologies. These individual/context relations are shown to be associated with PYD - and the Five Cs related to this construct - and, in turn, PYD is positively associated with youth contributions to self, family, community, and civil society, and negatively associated with risk or problem behaviors, such as depression, delinquency, and substance abuse. The outcomes of these adaptive developmental regulations provide feedback to the individuals and his or her context to create a basis for further adaptive developmental regulations. The

framework also illustrates that these adaptive developmental regulations and the resulting positive and negative outcomes exist within the broader ecology of human development, which incorporates both cultural and historical (i.e., temporal) variation. Thus, plasticity or change is introduced at all levels of the organization within the developmental system, and this change is manifested by intraindividual change, by interindividual differences in intraindividual change, and by contextual variation (Lerner et al., 2011).

### Schools as Ecological Assets for PYD

Schools are ideal contexts for positive youth development, considering that the adults who work with students within these settings have the power to restrain or stimulate a young person's development (Thomsen, 2004). Eccles and Roeser (1999) proposed a framework for understanding how the school can influence adolescent development. They conceptualized the school context as a series of hierarchically ordered, interdependent levels of organization starting with the classroom as the basic level and then moving up to the school as an organizational system located within a larger cultural system. Eccles and Roeser's (1999) framework assumes the following: (1) schools are systems characterized by multiple levels of analysis with multiple regulatory processes, i.e., organizational, interpersonal, and instructional in nature; (2) these processes are interrelated across levels of analysis; (3) such processes are dynamic in nature and are being worked out on a daily basis between many social actors (e.g., teachers and students); (4) these processes change as students move through different school levels; and (5) these processes regulate students' cognitive, social-emotional, and behavioral development. Schools, therefore, have the potential to contribute to the positive development of young people through the dynamic interaction of the processes within the different levels of the environment (Eccles & Roeser, 1999).

**Positive People in Schools.** Gomez and Ang (2007) proposed that the presence of positive adults in schools who provide continuous support for young people is one area where schools can contribute to PYD. As the primary adults who handle students, teachers play several roles in the development of young people, such as a potential attachment figure, as an educator, as a disciplinarian, and as the final arbiter of a student's level of performance (Furrer & Skinner, 2003).

Perception of high teacher support among students has been shown to be a necessary condition for positive school behavior, affect and outcomes (Rosenfeld et al., 2000). In particular, perceived teacher support is significantly related to school satisfaction, engagement, and self-efficacy (Rosenfeld et al., 2000). In the classroom, teachers can also contribute to PYD by setting high expectations for student achievement. Teachers can help young people develop a greater sense of self-worth and competence as learners, establish a deeper connection to others, and resist involvement in problem behaviors (Eccles and Roeser, 1999). Other school personnel can also

contribute to positive adolescent development by encouraging school success; teaching young people respect for cultural differences; and teaching them shared values like equality, honesty, and responsibility (Scales et al., 2006).

**Positive Places in Schools.** The school environment itself has an important role to play in the positive development of youth. In order for schools to be positive places, there must be three components: healthy boundaries, a safe and caring climate, and a supportive environment for school personnel (Gomez and Ang, 2007).

Healthy school boundaries refer to the construct of relational trust proposed by Bryk and Schneider (2002), which comprises concepts such as shared beliefs, personal regard for others, social expectations, and obligations. Relation trust is defined as the interpersonal social exchanges that take place in a school community. These exchanges may take place between principal to teacher, principal to parent, teacher to teacher, teacher to student, and teacher to parent. Each party in a relationship maintains an understanding of their role obligations and holds expectations about the role obligations of the other. There are four basic foundations of relational trust: respect, which involves the recognition of the role each person plays in a child's education; competence in the execution of a role, which is the ability one has to achieve the desired outcomes; personal regard for others, which is the perception of how one goes beyond what is required of their role in their caring for another person; and finally, integrity, which can be described as the consistency between what people say and what they do. Bryk and Schneider (2002) assert that the stronger the perception of relational trust among the members school community, the more successful that school will be in educating the student.

School climate refers to the quality and character of school life and includes norms, values, and expectations that allow people to feel socially, emotionally and physically safe (Cohen, McCabe, Michelli & Pickeral, 2009). It has been shown that a positive and sustained school climate promotes students' academic achievement and healthy development necessary for a productive and satisfying life in a democratic society (Cohen, Pickeral, & McCloskey, 2009). School climate has been found to contribute significantly in increasing adolescent well-being and in decreasing their depressive symptoms and behavior problems (Way, Reddy, & Rhodes, 2007). Students' perception of school safety is also associated with greater social competence and less externalizing behaviors, which are operationally defined as conduct problems, difficulty in getting along with others, and incidents of arguing, bullying, cruelty, disobedience and sullenness (Youngblade, Theokas, Schulenberg, Curry, Huang, & Novak, 2007).

School should be positive places, not just for students, but also for school personnel. In a study of middle schools in the United States, Jackson and Davis (2000, cited in Eccles & Roeser, 2009) found that learning and positive youth development is enhanced when schools have organizational structures that support a climate of intellectual development, ongoing

professional development opportunities for staff, and democratic governance that involves both the adults and the adolescents in the school community.

**Positive Opportunities in Schools.** Gomez and Ang (2007) define positive opportunities activities or programs that promote development of some or all of the six Cs of PYD, namely, competence, confidence, connections, character, caring, and contribution to society. These activities may be in the form of structured or unstructured curricular or extra-curricular programs. Students' development may be enhanced by providing them with opportunities to make positive choices; avoid negative influences; manage their feelings; build positive friendships; be sensitive to others in their differences and needs; and manage conflict (Gomez & Ang, 2007; Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004).

### Measures of Ecological Assets in PYD

The PYD model has been tested in several studies using data from the 4-H Study of Positive Youth Development, a multiwave longitudinal investigation that started in 2002 with a national cohort of about 1,700 fifth grade youth and their parents (Lerner, 2005). The 4-H study was designed to test the hypothesis that when the individual strengths of youth are aligned throughout adolescence with family, school, and community resources, positive youth development (as evidenced by the five Cs of competence, confidence, character, connection, and caring), and community contribution (the sixth C) will occur (Lerner et al., 2011). As of 2011, the study was on its eight wave of data collection, which assessed youth in Grade 12.

Ecological assets have been operationalized in different ways by different authors. In testing the PYD model, Li, Lerner, & Lerner (2010) used five constructs to operationalize ecological assets, but only one of these was related to the school as a context for PYD. The five ecological assets were parental monitoring, parental involvement, maternal warmth, peer support, and school climate. Perceived school climate was measured using six items from the Profiles of Student Life: Attitudes and Behaviors, a self-report survey designed for 6<sup>th</sup>- to 12<sup>th</sup>-grade youth (Leffert et al., 1998). Respondents were asked whether they thought their schools had clear cut rules, whether their teachers pushed them to be the best, and whether their teachers encouraged them to do their best. The Cronbach's alphas for Grades 5 and 6 were 0.70 and 0.79, respectively. Using structural equation modeling, Li et al. (2010) were able to show that parental involvement, maternal warmth, peer support, and school climate significantly had indirect effects on academic competence, via emotional and behavioral school engagement. Among these ecological assets, school climate was found to be the strongest predictor of emotional school engagement. Thus, students who perceived a more positive school climate were more likely to have higher perceived academic competence, but only because they had higher emotional school engagement, which in turn led to higher behavioral engagement.

In another study, Bowers et al. (2011) measured ecological assets using the four dimensions specified by Theokas and Lerner (2006) - human resources, physical or institutional resources, collective activity, and accessibility. Human resources in school were measured through the educational attainment and experience of the teachers. These two indicators were standardized and summed. Physical or institutional resources were measured by looking at the recreational, academic, athletic, and artistic programs of the school. Nine resources were identified and summed. Collective activity was measured using two indicators: the preparation of a newsletter to communicate with families and the extent to which parents attend school events. Both indicators were standardized and summed. Accessibility was measured through student-teacher ratio and overall school size, which indicates the possibility for youth to develop relationships with adults. Similar to the treatment of other measures, both indicators for accessibility were standardized and summed.

Other than the 4-H study that sought to confirm the PYD perspective, there have been studies which also looked into the contexts of youth as potential influencers of positive development. For instance, Youngblade et al. (2007) examined the association of family, school, and community risk and promotive factors, with various indicators of adolescent development. In this study, the family context was assessed through a survey instrument that included questions about family engagement, family closeness, healthy role modeling, household rules, communication skills, child safety at home, coping with parenthood, and emotional support available. The school and neighborhood context were measured using items about neighborhood connectedness, neighborhood and school safety, and parents' concerns about bullying and violence in school. All of the items were measured using a self-report instrument answered by parents.

Another study by Murphey, Lamonda, Carney, and Duncan (2004) sought to test the utility of a brief measure of developmental assets for predicting risk and health promoting behaviors among youth. The measure was based on the 40 assets identified by the Search Institute, a non-profit organization in the United States that focuses on research in education and youth development. It included single-item measures for grades in school, talking with parents about school, representation in school decision-making, participation in youth programs, volunteering in the community, and feeling valued in the community.

Research on PYD uses different measures of ecological assets, as previously presented. In particular, there appears to be no common understanding of the dimensions that ought to be considered when schools are perceived as assets for positive youth development. Thus, the school context may be operationalized using a single item as in the study of Murphey et al. (2004), as a multidimensional construct theorized by Theokas and Lerner (2006), or the construct school climate as in the study of Li et al. (2010). If schools are to be viewed, therefore, as ecological assets that predict PYD, there ought to be a clear conception of what makes it an ecological asset and



based on that understanding, a measure that could be used to confirm the PYD framework.

### **Purpose of the Study**

The present study sought to develop and validate a scale that would measure the extent to which schools, as ecological assets, promote positive youth development. Based on the model posited by Gomez and Ang (2007) that positive schools have three focal areas - positive people, positive places, and positive opportunities, a self-report instrument that measures students' perceptions of their schools was developed. The instrument can be used by administrators and teachers to identify areas for improvement within the school environment that would lead to positive youth development.

### **Method**

#### **Development of the Items**

There were three domains that were included in the Positive Schools Scale (PSS) - *Positive People*, *Positive Places*, and *Positive Opportunities*, as defined by Gomez and Ang (2007). *Positive People* refers to the adults in the school who address students' need for ongoing support in their development and their need to stay connected to others (Roth & Brooks-Gunn, 2002). *Positive Places* has three dimensions - healthy school boundaries, safe and caring climate, and supportive environment for school personnel. For the student version of the PSS, only one dimension of *Positive Places* will be assessed, which is a safe and caring climate. According to Gomez and Ang (2007), a school with a safe and caring climate is one where the physical and emotional safety of students is guaranteed and aggression and bullying are controlled. Furthermore, they also clarified that a safe and caring climate is present if students believe they are being cared about and valued in their school. The third domain is *Positive Opportunities*, which refers to those activities or programs made available to students through formal curricular offerings or otherwise that promote development of some or all of the six C's of PYD. The items of the PSS were written based on the definitions of the domains identified by Gomez and Ang (2007). The items were subjected to item review by a panel of experts in educational psychology and measurement and evaluation.

The instrument used a four-point Likert scale in responding to the items. Respondents were asked to rate their degree of agreement to statements about their school, using the following response anchors: 4 - Strongly Agree, 3 - Agree, 2 - Disagree, and 1 - Strongly Disagree. A forced-choice format was used to ensure that there were no ambiguous responses from the students.

## Procedure for Pretesting

The PSS was administered to high school and college students from four private Catholic institutions, two of which are in Manila, one in Bacolod, and one in Antique. A sample of 300 high school students and 300 college students was the original target. However, the final sample consisted of 584 students. After data cleaning, cases with missing data were removed from the data set used for analysis and only 496 cases were retained. The mean age of the respondents was 16.63, with a standard deviation of 1.82. Of the 496 respondents, 317 (63.9 percent) were females, 178 (35.9 percent) were males, and one person gave no response.

The researcher administered the instrument to the students during their class time, for the schools which are based in Manila. A faculty from the other schools was requested to administer the scale to selected sections. The PSS was administered together with a positive youth development (PYD) scale, which was used for establishing criterion-related validity. The PSS and the PYD scales took about 15 to 20 minutes to answer.

## Results

The mean, standard deviation, skewness, and kurtosis of each subscale were calculated to determine the distribution of scores. Table 1 shows the descriptive statistics per subscale of the PSS.

Table 1

*Descriptive Statistics for the Positive Schools Scale*

Subscale	<i>N</i>	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Positive People	496	3.12	.45	-.37	.61
Positive Places	496	3.08	.43	-.20	.10
Positive Opportunities	496	3.14	.41	-.08	-.15
Overall PSS	496	3.11	.38	-.16	.18

The rating scale used for the PSS is a four-point Likert scale, with mean scores ranging from 3.08 to 3.14. The standard deviations show minimum dispersion of scores from the mean of each subscale. The distribution of scores for each subscale is approximately normal, with skewness values ranging from -.37 to -.08. According to Bulmer's (1979) rule of thumb, if skewness is between -.5 to .5, the distribution is approximately symmetric. The kurtosis values show that the scores for the three subscales are slightly spread out around their respective means, indicating a flatter distribution.

Bivariate correlations among the subscales of the PSS were calculated to provide evidence of the convergent validity of the scale. The three subscales were found to be positively and significantly correlated with each other. These correlation coefficients support the convergent validity of the PSS.

Table 2  
*Correlation Matrix for PSS Subscales*

	1	2	3
1. Positive People	-		
2. Positive Places	.707**	-	
3. Positive Opportunities	.633**	.650**	-

\*\* Correlation is significant at the 0.01 level (2-tailed).

The reliability of the PSS was assessed using Cronbach's alpha. Separate reliability indices were calculated for each subscale.

Table 2  
*Reliability Indices of the PSS Subscales*

Subscale	Number of Items	Cronbach's Alpha
Positive People	10	0.82
Positive Places	10	0.71
Positive Opportunities	10	0.81

The Positive People and Positive Opportunities subscales both have reliability coefficients above 0.80, which Nunnally (1978) considers an adequate coefficient for basic research. The Positive Places subscale, however, has a Cronbach's alpha below 0.80. Nonetheless, this coefficient still meets Nunnally's (1978) recommendation that reliabilities of 0.70 for instruments being used in the early stages of research would suffice.

Messick (1995) proposed a comprehensive view of validity that integrates the traditional types of validity - content, criterion, and construct validity - into one unified concept of construct validity that considers both score meaning and social values in test interpretation and test use. He suggested six aspects of construct validity that function as general validity criteria for all educational and psychological measurements, namely, content, substantive, structural, generalizability, external, and consequential. For the PSS, content validity was established through item review. Aside from this, the structural and external aspects of construct validity were also confirmed.

The structural validity of the PSS was determined through confirmatory factor analysis, using AMOS 18. The initial model included three latent variables, which are the three factors of the PSS - *Positive People*, *Positive Places*, and *Positive Opportunities*. Each factor had 10 items, and these were included as manifest variables in the initial model. The items under each factor all had significant parameter estimates. The three factors were highly and significantly correlated (all  $r$  values were greater than 0.95), providing further evidence of convergent validity.

Model fit was assessed using absolute indices, such as the Chi-square index, the root-mean-square-error-of-approximation (RMSEA), and the standardized root mean square residual (SRMR), as well as incremental measures of fit, particularly the comparative fit index (CFI) and the Tucker-Lewis index (TLI). There is model-data fit if the Chi-square value is statistically

non-significant, the SRMR is 0.08 or less, and the RMSEA is 0.06 or less (Hu & Bentler, 1999). Hu and Bentler (1999) recommend CFI and TLI values of at least .95 as indicators of good fit. The initial model showed poor fit, as indicated by the following fit indices:  $\chi^2 = 1247.647$ ,  $df = 402$ ,  $p$ -value = .000; RMSEA = 0.062; SRMR = 0.027; CFI = 0.832; TLI = 0.818.

In order to improve model fit, items with regression weights below 0.5 were removed from the model. Four items had regression weights below 0.5 - one for Positive People and two for Positive Places, and one for Positive Opportunities - and the analysis was again conducted without these four manifest variables. The resulting model had the following fit indices:  $\chi^2 = 852.081$ ,  $df = 296$ ,  $p$ -value = .000; RMSEA = 0.059; SRMR = 0.019; CFI = 0.880; TLI = 0.868. The removal of the items with low regression weights resulted to better model fit, as indicated by the RMSEA and SRMR values. However, the Chi-square value and the incremental measures of fit were less than acceptable.

To further improve model fit, the modification indices of the error terms were examined and error terms within the same factor which had high modification indices were made to co-vary in the next model. Standardized residual covariances were also examined for high values. Manifest variables which had higher than 0.4 were identified and were removed from the model. At this stage in the analysis, three more items were removed resulting to better model fit. The following fit indices were obtained:  $\chi^2 = 507.231$ ,  $df = 220$ ,  $p$ -value = .000; RMSEA = 0.049; SRMR = 0.017; CFI = 0.924; TLI = 0.913. The current model had absolute fit indices (RMSEA and SRMR) that satisfied the criteria provided by Bentler and Hu (1999), however, the incremental fit indices were still below the 0.95 threshold value.

The standardized residual covariances of the manifest variables were checked again for values higher than 0.4, and those with high values were removed. The resulting final model had five items under *Positive People*, five items under *Positive Places*, and seven items under *Positive Opportunities*, and had good fit, as indicated by the following fit indices:  $\chi^2 = 184.826$ ,  $df = 109$ ,  $p$ -value = .000; RMSEA = 0.036; SRMR = 0.014; CFI = 0.970; TLI = 0.962. The different models that were tested to establish the factor structure of the scale are found in the Appendix.

The external aspect of construct validity was established by correlating the PSS scores with the PYD scores in order to ascertain concurrent validity. The three factors of the PSS are significantly correlated with four of the Five Cs of PYD - Competence, Confidence, Character, and Connection. There appears to be no significant correlation between the PSS factors and Caring.

Table 3  
Correlations between PSS Factors and 5Cs of PYD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Positive People	-									
(2) Positive Places	.71**	-								
(3) Positive Opportunities	.63**	.65**	-							
(4) Competence	.10*	.12**	.11**	-						
(5) Confidence	.29**	.30**	.23**	.46**	-					
(6) Character	.15**	.15**	.13**	.17**	.22**	-				
(7) Caring	.08	.07	.06	-.03	-.04	.45**	-			
(8) Connection	.27**	.23**	.16**	.17**	.30**	.33**	.12**	-		
(9) Positive Schools	.89**	.89**	.86**	.13**	.31**	.16**	.08	.25**	-	
(10) PYD	.29**	.29**	.23**	.64**	.67**	.66**	.48**	.59**	.31**	-

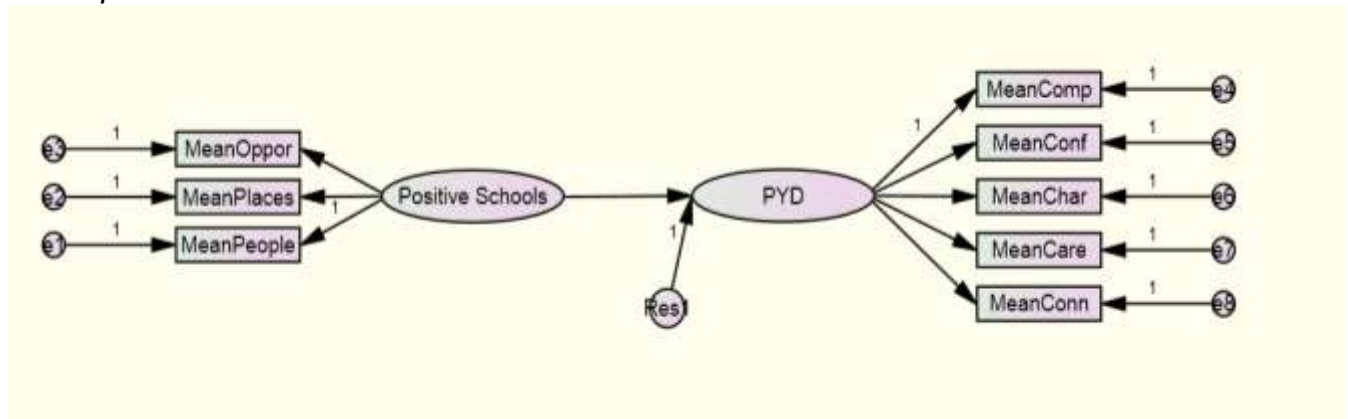
\*\*Correlation is significant at the 0.01 level (two-tailed).

\*Correlation is significant at the 0.05 level (two-tailed).

Structural equation modeling (SEM) was also used to test for the validity of a model structure between Positive Schools and PYD.

Figure 1

Initial Structural Model of Positive Schools and Five Cs of Positive Youth Development



Model 1 proposes that Positive Schools, which are ecological assets of youth, can significantly predict PYD, which is characterized by the Five Cs - Competence, Confidence, Character, Caring, and Connection.

The initial model yielded an  $\chi^2(19)$  value of 180.758, a GFI of .916, a CFI of .851, and an RMSEA of .131, indicating poor model fit. Based on the results, the largest modification index (103.052) is associated with a path from Caring to Character. This path seems to be reasonable because it seems likely that a young person who is Caring (i.e., has a sense of sympathy and empathy for others) would also be a person of Character (i.e., one who has a respect for societal and cultural rules, possesses standards for correct behaviors, has a sense of right and wrong, and has integrity). Based on this, the structure was modified with the path from Caring to Character freely estimated.

Model 2 yielded better fit statistics, with a  $\chi^2(18)$  value of 59.334, a GFI of .970, a CFI of .962, and an RMSEA of .068. Both the GFI and CFI suggest that the model is relatively well-fitting. However, the RMSEA is still above the .05 threshold, indicating that further refinement of the model is warranted. For Model 2, the largest modification index (22.725) is associated with a path from Character to Connection. However, it should also be noted that a modification index (13.546) related to the reverse path involving these factors (Connection to Caring) is also included. It seems logical for these two factors to be related, considering that having a Connection with people and institutions would contribute to one's Character, which is defined by Roth and Brooks-Gunn (2003) as having respect for societal and cultural rules, possession of standards for correct behaviors, a sense of right and wrong (morality) and integrity. Using this as a basis, the model was estimated once again, this time allowing Connection and Character to covary.

The resulting model (Model 3) showed an improvement over the previous model, as indicated by the following fit statistics:  $\chi^2(17)$  value of 38.89, a GFI of .98, a CFI of .98, and an RMSEA of .051. Modification indices showed that the model could still be improved, with the largest modification index (13.06) associated with a path from Positive People to Connection. Positive People is defined by Roth and Brooks-Gunn (2003) as adults who recognize and respond to adolescents' need for continuous support in their development and their need to be connected to others. Thus, it is quite likely that the presence of positive people in schools would contribute to young people's Connection, which refers to having positive bonds with people and institutions reflected between the individual and peers, family, school, and community in which both parties contribute to the relationship (Roth & Brooks-Gunn, 2003). Thus, the model was reestimated with the path from Positive People to Connection freely estimated.

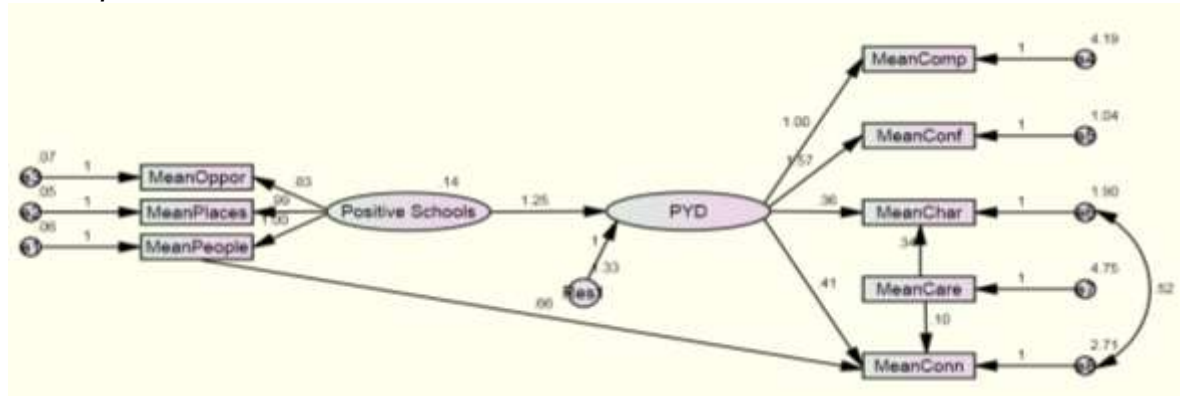
Model 4 yielded better fit, as shown by the following fit indices:  $\chi^2(16)$  value of 22.863, a GFI of .989, a CFI of .994, and an RMSEA of .029. In terms of these indices, Model 4 appears to be the best-fitting among all the other estimated models. However, it was noted that the estimated regression weight for one of the factors of PYD, Caring, was not significant ( $p$ -value = .598). The only remaining modification index for this model also showed a causal path from Caring to Connection (M.I. = 7.45). It appears that while Caring is not a significant factor of PYD, it has a causal link to Connection. This seems to be a reasonable assumption, considering that one cares more for those with whom one has a connection or positive bond. Thus, the model was further reestimated, with the following refinements: (1) allowing a causal path from Caring to Connection and (2) removing Caring as a factor of PYD.

Model 5 resulted to further improvement in the model with  $\chi^2(16)$  value of 15.246, a GFI of .992, a CFI of 1.0, and an RMSEA of .000. By far, this is the best fitting model among those that were estimated and is considered the final model for this analysis. This model indicates that Positive Schools are ecological assets of youth that significantly contribute to PYD. Among the three factors of Positive Schools, Positive People has a direct causal link to one

of the factors of PYD (i.e., Connection). Caring does not appear to be a significant factor of PYD, but it positively predicts Character and Connection, which are two of the significant factors of PYD.

Figure 2

*Final Structural Model of Positive Schools and Five Cs of Positive Youth Development*



## Discussion

The purpose of this paper is to develop an instrument to measure the extent to which schools, as ecological assets, promote positive youth development (PYD). It was hypothesized the Positive Schools have three components - Positive People, Positive Places, and Positive Opportunities (Gomez and Ang, 2007). The Positive Schools Scale (PSS) was intended to capture these three areas that are thought to contribute to the development of the Five Cs of PYD, namely, Competence, Confidence, Character, Caring, and Connection (Lerner, 2005).

The PSS is said to possess convergent validity, as indicated by the high and significant zero-order correlations among the three subscales. The high correlation coefficients signify that the three factors of the PSS are interrelated. A school cannot be considered a Positive School without the presence of Positive People, Positive Places, and Positive Opportunities. This supports the assertion of Gomez and Ang (2007) that in order for schools to promote PYD, they should enhance three focal areas: people, places, and opportunities.

The subscales of the PSS are also considered to possess internal consistency reliability, as indicated by Cronbach's alpha values that are above 0.7. The Positive People and Positive Opportunities subscales had higher internal consistency coefficients compared to the Positive Places subscale. One possible reason for this is that the Positive Places subscale only focused on one component of the school environment that Gomez and Ang (2007) included in their framework of positive schools - having a safe and caring climate. The two other components - healthy school boundaries and supportive environment

for school personnel - were not included in the scale because they required items that could be answered by school personnel, but not by students. Since the PSS is a self-report scale for students, the said components were not included in the present instrument. Future studies could focus on the development of a school personnel version of the PSS. This scale can then be used to provide greater support for schools as ecological assets that promote PYD.

Two aspects of construct validity were established for the PSS: the structural aspect and the external aspect. The structural validity of the scale was proven using Confirmatory Factor Analysis (CFA). All items were found to be significant under each latent factor of the PSS. The initial model was subsequently specified again until acceptable fit indices were obtained. The reestimation of the model resulted to a shortened scale with only 17 items, which were all significant under the specific latent factors of the PSS. The shortened scale is desirable considering that one goal of CFA is to create a parsimonious scale (Stapleton, 1997). The CFA results indicate that the PSS is a valid and reliable scale that schools can use to assess the extent to which they are able to provide students with positive people, positive places, and positive opportunities that promote PYD.

To further establish the construct validity of the scale, the PSS subscale scores were correlated with an external criterion, PYD, which is characterized by the Five Cs - Competence, Confidence, Character, Caring, and Connection (Roth & Brooks-Gunn, 2003). The intercorrelations among the PSS subscales and the PYD Five Cs were all significant, except for the correlations between the PSS subscales and Caring.

Structural equation modeling (SEM) was used to confirm the causal link between Positive Schools and PYD. The initial causal model was revised five times until adequate fit indices were obtained. Although the latent endogenous variable, Positive Schools, positively predicts PYD in the final model, it is interesting to note that there is a direct causal link from Positive People to Connection. Thus, positive engagement with adults in school helps adolescents develop a positive bond with others, which in turn, plays to promote a role in the development of the youth (Scales, Benson, & Mannes, 2006).

In the final model it was found that Caring is not a significant factor of PYD. This is contrary to the findings of Bowers et al. (2010), which confirmed the five-factor structure of the PYD model. One possible explanation is the use of a shortened PYD scale in measuring the five Cs. The original scale used by Bowers et al. (2010) comprised 85 items, but the PYD scale used for the present study was a shortened version composed of 34 items developed by Geldhof et al. (2013). In the development of the PYD short form, Geldhof et al. (2013) found that a bifactor model of PYD is more appropriate than a higher-order model. This means that the relationships among the lower-order factors of PYD and the relationships between these factors and important criterion measures need not be fully explained by a single construct (Geldhof et al., 2013). Thus, the lower-order constructs (i.e., Five Cs of PYD) can be



allowed to correlate with each other and with important criterion measures. In the final causal model, Caring did not load significantly on PYD, but had a direct effect on Character and Connection. It seems that adolescents possessing the characteristic of Caring are more likely to develop Character and establish a positive Connection with others.

All schools have the potential to promote PYD among their students, if they are able to provide students with access to positive people, positive places, and positive opportunities. It was found that Connection can be further enhanced when students are given support by positive people in their school environment. Furthermore, it is important for schools to promote the characteristic of Caring among students so that they can develop their Character and establish a positive Connection with others around them.

In conclusion, it is evident that Positive Schools can significantly contribute to PYD, by providing students with access to Positive People, Positive Places, and Positive Opportunities. The three-factor structure of the PSS was confirmed in this study, and the scale appears to be a valid and reliable tool to use in both the high school and college levels. The external validity of the scale can be further established by testing measurement invariance across different age groups (i.e., younger adolescents versus older adolescents) and different educational settings (i.e., private schools versus public schools). The PSS can also be tested in the full PYD framework, which requires the inclusion of the personal assets of youth as predictors of PYD.

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