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# Objective outcome evaluation of a leadership course utilising the positive youth development approach in Hong Kong

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## ABSTRACT

This study adopted a single-group pretest-posttest design to explore the changes in 2,876 undergraduate students in positive youth development, psychological well-being and desired graduate attributes after they took a leadership subject utilising the positive youth development approach at one university in Hong Kong. The subject aims to promote undergraduates' leadership qualities, particularly their intra- and inter-personal competencies. Participants completed the same objective outcome evaluation forms before and after taking the subject. We found that the participants showed significant positive changes in most positive youth development attributes (i.e. self-determination, cognitive competence, behavioural competence, social competence, emotional competence, self-efficacy, spirituality, and clear and positive identity), life satisfaction and desired graduate attributes (including problem-solving ability, critical thinking, life-long learning and ethical leadership). The findings demonstrate that leadership subjects can promote the positive youth development of Chinese university students and enhance their psychosocial well-being and desired graduate attributes.

## KEYWORDS

Leadership program; positive youth development; psychological well-being; desired graduate attributes

## Introduction

Traditionally, many researchers have adopted a “deficit perspective” and “problem-oriented focus” in understanding adolescents and emerging adults, with attention paid to the risks faced by and problematic behaviours of young people (Lerner, Dowling, and Anderson 2003; Dvorsky et al. 2019). In the past two decades, the positive youth development perspective has emerged, with the emphasis on young people's interests, strengths, potential and the bright side of life (Damon 2004). Positive youth development is a strengths-based approach to optimising youth development and enabling young people to live healthy, productive and satisfying lives (Roth et al. 1998). Positive youth development focuses on how to enhance young people's strengths, establish a supportive context, and provide opportunities for young people to realise their potential (Taylor et al. 2017). Moreover, the positive youth development approach is holistic and considers the wider development of young people, rather than focus on one particular capacity (Damon and Gregory 2002). Recent studies (e.g. Bonell et al. 2015; Taylor et al. 2017) have shown that positive youth development can foster positive developmental outcomes and buffer negative outcomes. Young people who experience positive development are more likely to take

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positive actions and are less likely to perform problematic behaviours (Shek, Siu, and Lee 2007; Shek and Wu 2016).

### **Positive youth development attributes**

Catalano et al. (2002, 2004) proposed 15 indicators of positive youth development attributes in terms of intra- and inter-personal competence based on a review of 77 positive youth development programs in the United States, which targeted young people aged between six and 20 years (see Table 1). With reference to the 15 positive youth development constructs, Shek, Siu, and Lee (2007) developed a 90-item self-report Chinese Positive Youth Development Scale (CPYDS) to measure the 15 positive youth development attributes of Chinese youths. The validity of this scale has been proven and it has been widely used in many Chinese studies (Shek and Sun 2013; Shek and Wu 2016). Using confirmatory factor analysis, Shek and Ma (2010) further showed that the 15 positive youth development attributes could be subsumed under four higher-order factors, including cognitive-behavioural competencies (i.e. self-determination, behavioural competence and cognitive competence), prosocial attributes (i.e. prosocial involvement and prosocial norms), positive identity (i.e. beliefs in the future, and clear and positive identity), and general positive youth development qualities (i.e. resilience, social competence, self-efficacy, moral competence, bonding, recognition of positive behaviour, spirituality and emotional competence).

### **Application of the positive youth development approach**

Prevention is an approach to minimise the occurrence of problematic behaviours (Catalano et al. 2004). Compared to interventions after occurrence of problems, prevention is usually considered to be cheaper. Even though prevention is superior to intervention in this respect, it usually targets one single problem (Catalano et al. 2002). Unlike pure prevention programs, the positive youth development approach focuses on individuals' psychosocial competence and positive functioning as an alternative to simple prevention or intervention against risky and negative behaviours (Dvorsky et al. 2019). During the past few decades, Shek and his team have

**Table 1.** 15 positive youth development constructs.

Indicators	Definition
Bonding	Development of positive and healthy relationships with adults and peers (Interpersonal Competence)
Resilience	Effective and healthy adaptation in regard to change and stress (Intrapersonal Competence)
Social competence	Interpersonal skills (Interpersonal Competence)
Emotional competence	Recognition and management of one's and others' emotions (Intrapersonal and Interpersonal Competencies)
Cognitive competence	Thinking skills (Intrapersonal Competence)
Behavioral competence	Action skills and patterns (Interpersonal Competence)
Moral competence	Ability to follow social norms and moral codes when taking action (Intrapersonal Competence)
Self-determination	Independent thinking or self-advocacy (Intrapersonal Competence)
Self-efficacy	Skills regarding coping and mastery (Intrapersonal Competence)
Spirituality	People's spiritual nature and a sense of meaning in life (Intrapersonal and Interpersonal Competencies)
Beliefs in the future	Hope and optimism about the future (Intrapersonal Competence)
Clear and positive identity	Positive and healthy self-identity (Intrapersonal Competence)
Prosocial involvement	Activities and events designed to make positive contributions (Interpersonal Competence)
Prosocial norms	Development of clear standards for prosocial engagement (Interpersonal Competence)
Recognition of positive behavior	Rewarding or recognizing positive behaviors (Environmental Protective Factor)

successfully initiated Project PATHS (Positive Adolescent Training through Holistic Social Programs) to Adulthood and have widely applied this positive youth development program in more than half of the high schools in Hong Kong (cumulative beneficiaries reach more than 600,000 adolescents at different times), in order to promote students' positive development (Shek and Wu 2016). Students who have participated in this positive youth development program show significantly better positive youth development than students who did not participate (Shek and Ma 2012). Moreover, this positive youth development program is able to contribute to the psychological well-being of adolescent participants (e.g. Ma and Shek 2019; Ma, Shek, and Chen 2019; Ma, Shek, and Leung 2019). Researchers found that adolescents showed significantly higher levels of life satisfaction and thriving after joining this positive youth development program. Different evaluation strategies, including objective outcome evaluation, subjective outcome evaluation, process evaluation and qualitative evaluation, have consistently demonstrated the effectiveness and success of this positive youth development program in Chinese adolescents (Shek and Wu 2016; Ma and Shek 2019; Ma, Shek, and Chen 2019).

Positive youth development programs are popular with young people of high school age (Catalano et al. 2012) but are seldom applied in emerging adulthood (Dvorsky et al. 2019). In particular, there are very few curriculum-based positive youth development subjects offered at the university context (Shek 2012), although emerging adulthood is an important developmental transition stage from late adolescence to adulthood (Arnett 2000). In view of the growing developmental issues in university students, there is a need to nurture their holistic development, particularly their leadership qualities (Shek and Wong 2011).

### ***The importance of positive youth development leadership programs for university students***

Although university aims to equip young students to be successful adults in a holistic manner and to nurture them to become tomorrow's leaders in all walks of life, higher education in some regions (e.g. Hong Kong) overemphasises the importance of intellectual outcomes and vocational training, while ignoring the holistic development of young people (Lewis 2006; Shek and Sun 2012; Shek et al. 2013), such as their inner lives and personal development (Dalton and Crosby 2006; Shek and Wong 2011). Fortunately, positive and holistic youth development is a growing emphasis in higher education and more and more educators have recognised the importance of holistic development for university students (Hersh and Schneider 2005; Gessler and Howe 2015). Whole-person development undoubtedly benefits undergraduate students' university lives and future careers. Shek, Siu, and Lee (2007) found that individuals with better positive youth development attributes are more likely to thrive and be satisfied with their lives. Based on a meta-analysis of 213 studies across different school-age groups, Durlak et al. (2011) found that positive youth development can improve youths' academic performance, in addition to catalysing improvements in social, emotional and behavioural competence. Besides good academic performance and professional skills, desired attributes, such as innovative problem-solving abilities, critical thinking, lifelong learning and ethical leadership, can also be promoted in university students through positive youth development programs (Shek and Ma 2014).

Higher education is an important means to empower young people and contribute to the social, economic and cultural development of a country. As young people are tomorrow's leaders and the mainstay of society, positive youth development is particularly important for university students. Against this background, successful experience concerning the application of positive youth development programs urgently needs to be extended to young people in emerging adulthood. Due to the 3-3-4 education reform (three years of junior high school, three years of senior high school and four years of university) in Hong Kong introduced in 2006, the undergraduate curriculum structure has changed from three years to four years. Younger adults

therefore have to start university earlier. At this important developmental stage, emerging adults may encounter multiple problems and significant life changes, such as new academic environments, new life goals, career development, economic burdens, more complicated interpersonal relationships, and the first time they have lived away from home (Conley, Travers, and Bryant 2013; Dvorsky et al. 2019). Drastic and salient changes cause young people to struggle with mental and behavioural problems in university (Bruffaerts et al. 2018). After reviewing students' medical records in one Hong Kong university, findings showed that mental health problems in university students were prevalent (Lo et al. 2018; Lo et al. 2019). Wong et al. (2006) also found that there was a high prevalence of symptoms of depression, anxiety and stress in first-year university students in Hong Kong, but there is a shortage of effective interventions.

University student mental health services typically adopt an individual-based intervention model, while little focus is placed on prevention (McDonald, Pritchard, and Landrum 2006). In general, the Student Affairs Office aims to promote holistic development and handle student issues in universities in Hong Kong. However, students may not seek help or only seek help when they have serious problems (Lo et al. 2018). In this case, a course-based intervention has the potential to meet the needs of a majority of university students; it would be particularly beneficial for students who have reservations about or experience hesitation in regard to seeking help (Conley, Travers, and Bryant 2013).

### ***A positive youth development leadership subject in one Hong Kong University***

The Commission on Youth in Hong Kong (2000) noted that a majority of participants in youth leadership programs are adolescents from secondary schools, while only 3% are from universities or higher education institutes. Training in leadership skills for young people and preparing them to be future leaders are urgent matters. Although leadership programs are becoming more and more popular in universities as leadership development is being acknowledged as an important learning objective in higher education (Caza and Rosch 2014), most existing leadership training programs at university focus on promoting students' leadership capacity, while little attention has been paid to young people's personal holistic development (Shek et al. 2013). That is, current university leadership programs pay more attention to leadership skill training at the expense of personal qualities. A review of leadership programs also shows that most of the programs focus on "doing" (e.g. competence) rather than "being" (e.g. value and character) (Shek and Ng 2017). On the other hand, the majority of leadership programs in university promote elite education in a few students or target training for a specific group, such as future financial leaders or entrepreneurs (Caza and Rosch 2014; Shek and Ng 2017). To help more young people (first-year students in particular) to build leadership abilities and promote holistic development, a university version of a leadership program with positive youth development elements is required (Shek 2012).

Working with the beliefs that a leader should find a balance between "doing" and "being" (Holt and Seki 2012) and that everyone can be a leader, at least for oneself (Shek 2012), a positive youth development leadership subject, entitled *Tomorrow's Leaders*, was designed to help university students develop leadership in a holistic manner, with the aim of promoting positive youth development and intra- and inter-personal competence. As the first credit-bearing course revolving around positive youth development concepts, this subject has been launched at one university in Hong Kong and has been offered to students admitted to this new undergraduate curriculum since 2012. The subject mainly aims to nurture students' competence, social responsibility and leadership by enabling students to understand the concepts of positive youth development. The subject also responds to the worrying development issues of young people and helps them better adapt to university life.

**Table 2.** Topics covered in the 13 lessons.

Topics Covered	Intrapersonal and Interpersonal Competencies
1. Overview of the course and leadership	Intrapersonal and Interpersonal Competencies
2. Self-understanding and personality	Intrapersonal and Interpersonal Competencies
3. Cognitive competence	Intrapersonal Competence
4. Emotional competence	Intrapersonal and Interpersonal Competencies
5. Resilience	Intrapersonal Competence
6. Morality and integrity	Intrapersonal Competence
7. Spirituality	Intrapersonal and Interpersonal Competencies
8. Positive and healthy identity	Intrapersonal Competence
9. Social competence	Interpersonal Competence
10. Interpersonal communication and conflict management	Interpersonal Competence
11. Relationship building and team building	Interpersonal Competence
12. Self-leadership	Intrapersonal Competence
13. Mental health and well-being	Intrapersonal and Interpersonal Competencies

With a three-hour lecture each week, Tomorrow’s Leaders consists of 13 lessons (see Table 2), each focusing on different positive youth development constructs in terms of intra-personal competencies (e.g. cognitive competence, resilience and self-leadership) and inter-personal competencies (e.g. social competence, interpersonal communication and conflict management). The detailed teaching content has been comprehensively introduced in a review paper on the development of this subject (Shek 2012). To enhance students’ interest in learning and promote the effectiveness of the subject, the teaching team involves various approaches in its teaching. For example, instead of adopting a traditional didactic lecture style, experiential learning activities are involved to encourage active student involvement. In the lectures, students are not only encouraged to actively reflect on their learning experiences, but are also encouraged to discuss and collaborate with classmates through their group projects. Self-reflection and collaborative learning can promote the learning of the students and enhance their intra- and inter-personal competencies in the learning process. Different from students’ participation in Project PATHS, at the discretion of the schools (Shek and Wu 2016), Tomorrow’s Leaders can provide a fair opportunity to all students in the university who are willing to improve their intra- and inter-personal and leadership competencies. In each semester, this subject is offered to students from different faculties and disciplines at the university.

Program evaluation not only improves the program by collecting participants’ feedback, but can also improve the accountability of the program (Rutman and Mowbray 1983). However, only around 20% of effective prevention programs have examined the related intervention outcomes (Domitrovich and Greenberg 2000). The shortage of evaluation studies limits the widespread implementation of one effective program (Shek and Ng 2017). To overcome this limitation, various evaluation strategies have been conducted to evaluate this subject (Shek 2013). Based on the data collected from the first implementation of Tomorrow’s Leaders in the first semester of the 2012–13 academic year, the effectiveness of the program has been demonstrated by quantitative evaluation (e.g. objective outcome evaluation, subjective outcome evaluation, and process evaluation) (Shek and Leung, H 2014a; Shek and Ma 2014; Shek and Yu 2014) and qualitative evaluation findings (e.g. personal reflections and focus group interviews) (Shek and Leung, J 2014b). Good feedback from students and recognition from inside higher education enabled this subject to receive the Silver Award from the QS Reimagine Education Awards 2017 and the UGC Teaching Award, a prestigious Teaching Award from the University Grants Committee in 2018.

### The present study

Objective outcome evaluation refers to the use of objective outcome indicators (e.g. observable and reported behaviour) to measure the changes in clients and systems (Shek 2014). This method has been widely employed by researchers and clinicians. For example, Abrams et al. (2006) explored the underlying causes of overactive bladder symptoms and assessed the effects of related medical

treatments through an objective outcome evaluation of clinical practice. Luk, Chan, and Hu (2013) adopted an objective outcome evaluation to measure the effectiveness of a youth program on adolescents' positive values in Macau. Objective outcome evaluations, with the application of standardized instruments, are an effective method to evaluate the impacts of programs and human services and to address concerns regarding accountability and quality (McMurtry and Hudson 2000). The researchers completed an objective outcome evaluation of the implementation of Tomorrow's Leaders in the fall semester of the 2012–13 academic year (Shek and Ma 2014). They found that students made significant improvements in one positive youth development attribute (self-determination) after taking the subject. However, no further objective outcome evaluation of this subject has been conducted since the first implementation. Although the teaching content of this subject has basically remained the same since its initial implementation (aside from updating the lecture references), it is still necessary to re-examine how this subject can promote positive youth development attributes, psychological well-being, and desired graduate attributes in young people, and to replicate the positive findings identified in the early days of the program.

This study therefore aims to perform an objective outcome evaluation to show that this course was able to promote the positive development and intra- and inter-personal competencies of the university students involved. In this study, we collected objective outcome evaluation data from students who took the subject during the 2015–16, 2016–17 and 2017–18 academic years. Students were invited to complete the same set of pretest and posttest questionnaires before and after taking the positive youth development subject. In practice, a one-group pretest and posttest design is effective and has been widely used to evaluate program effectiveness in many education studies (Ma and Shek 2019). For example, Peter et al. (2017) evaluated the effectiveness of an adaptive information literacy instruction program on students' learning progress at a university using a pretest-posttest design. Han and Riaz (2018) measured the changes of undergraduate students in the accuracy of self-assessment English-Chinese bidirectional interpretation after they completed the consecutive interpreting courses using a one-group pretest-posttest design as well. Young et al. (2019) also used a pretest-posttest design to measure how faculty procedures influenced students' response rates to online teaching evaluation. The same design has been employed by Mathers, Finney, and Hathcoat (2018) to assess the impact of US college coursework on student learning gains. A large number of existing studies demonstrate the effectiveness and practicability of the one-group pretest-posttest design in assessing the effects of programmes.

To evaluate the impacts on university students, three sets of hypotheses were proposed.

*Hypothesis 1:* Students would experience positive changes in different indicators of positive youth development, including the primary measures (i.e., self-determination, cognitive competence, behavioural competence, social competence, moral competence, resilience, self-efficacy, spirituality, emotional competence, prosocial norms, clear and positive identity, and beliefs in the future), the composite measures (i.e., cognitive-behavioural competencies, general positive youth development qualities, and positive identity), and the total score measure of positive youth development after completing Tomorrow's Leaders.

*Hypothesis 2:* Students would have higher levels of psychological well-being (i.e., thriving and life satisfaction) after completing Tomorrow's Leaders.

*Hypothesis 3:* Students would display higher scores in the desired graduate attributes developed by the university (i.e., problem-solving ability, critical thinking, life-long learning and ethical leadership) after completing Tomorrow's Leaders.

## Methods

### Participants

Among the 6,269 first-year students at the university who took Tomorrow's Leaders between the 2015–16 and 2017–18 academic years, a total of 5,246 participants completed the pretest and 3,342 participants completed the posttest. After matching the pretest and posttest data based on students' student identity numbers, 2,876 sets of questionnaires (46% of all 6,269 students) were

**Table 3.** Demographic information of participants ( $n = 2,876$ ).

Demographic variables	Frequency	Valid Percent
<b>Academic years</b>		
2015-16	1,255	43.6%
2016-17	1,191	41.4%
2017-18	430	15.0%
<b>Gender</b>		
Male	1,409	49.1%
Female	1,460	50.9%
<b>Age</b>		
16 or below	5	.2%
17-year-old	137	4.8%
18-year-old	1,595	55.6%
19-year-old	714	24.9%
20 or above	419	14.6%
<b>Place of birth</b>		
Hong Kong	2,035	71.0%
Mainland China	632	22.1%
Other places	198	6.9%
<b>School/Faculty</b>		
School of Design	109	3.8%
Faculty of Humanities	120	4.2%
Faculty of Construction and Environment	403	14.0%
Faculty of Engineering	706	24.6%
Faculty of Hotel and Tourism Management	209	7.3%
Faculty of Health and Social Sciences	977	34.0%
Faculty of Applied Science and Textiles	351	12.2%

obtained. Of the participants, 1,409 were male and 1,460 were female; 71% were local Hong Kong students ( $n = 2,035$ ), 22% were mainland Chinese students ( $n = 632$ ), and 7% were from other regions and countries ( $n = 198$ ). A total of 95% of the respondents were adults (18 years of age or older); most of them (56%) were 18 years old. Detailed demographic data are reported in [Table 3](#).

### Procedures

Ethical approval for this study was obtained from the Institutional Review Board of the university. Students were invited to complete a pretest questionnaire at the very beginning of the subject and a posttest questionnaire at the end of the subject. Student participation in this study was voluntary and the participants were informed that they could refuse to participate in the study without penalty. Student consent was obtained from the participants before they completed the pretest questionnaire.

### Measures

The objective outcome evaluation with the pretest and posttest questionnaires adopted in this study covers three dimensions: positive youth development, psychological well-being and desired graduate attributes (see [Table 4](#)). Respondents rated each item as 1 (*strongly disagree*), 2 (*disagree*), 3 (*slightly disagree*), 4 (*slightly agree*), 5 (*agree*), or 6 (*strongly agree*), with higher scores indicating greater outcomes. Good Cronbach's alpha reliability estimates regarding all outcomes were obtained at the pretest and the posttest (see [Table 5](#)).

#### Positive youth development attributes

The Chinese Positive Youth Development Scale (CPYDS) (Shek, Siu, and Lee 2007) was employed to measure the positive youth development of students. Based on previous findings, 34 core items were used to measure the 12 constructs of positive youth development. Following the

**Table 4.** Descriptions of all measures.

	No. of items	Sample items
<b>Primary positive youth development factors</b>		
<i>Cognitive-behavioural competencies (3 factors)</i>		
Self-determination	2	I am confident about my decisions
Cognitive competence	4	I know how to find the causes of and solutions to a problem
Behavioural competence	2	I can face criticism with an open mind
<i>General positive youth development qualities (6 factors)</i>		
Social competence	3	I can interact with others in a harmonious manner
Moral competence	3	I have high moral expectations about my behavior
Emotional competence	3	When I have conflict with others, I can manage my emotions
Resilience	3	I believe problems in life can be solved
Self-efficacy	2	I can finish almost everything that I am determined to do
Spirituality	3	My life is colorful and full of excitement
<i>Positive identity (2 factors)</i>		
Clear and positive identity	4	I know my strengths and weaknesses
Beliefs in the future	3	I have confidence to graduate from university
<i>Prosocial attributes (1 factor)</i>		
Prosocial norms	2	It is my pleasure to obey rules and regulations
<b>Psychological well-being</b>		
Thriving	5	I am capable of managing my own life
Life satisfaction	5	I am satisfied with my life
<b>Desired graduate attributes</b>		
Problem-solving ability	3	I know how to effectively solve problems in my daily life
Critical thinking	3	I know how to use critical thinking skills when solving problems
Life-long learning	2	It is important to understand the development of oneself
Ethical leadership	15	I will sacrifice myself for others

**Table 5.** Outcome changes between pretest and posttest ( $n = 2,876$ ).

	Pretest Mean (SD)	$\alpha$	Posttest Mean (SD)	$\alpha$	F	$\eta^2_p$
<b>Primary positive youth development factors</b>					<b>31.23***</b>	<b>.118</b>
<i>Cognitive-behavioural competencies (3 factors)</i>						
Self-determination	4.54 (.75)	.76	4.64 (.79)	.84	47.50***	.016
Cognitive competence	4.64 (.61)	.79	4.71 (.69)	.87	34.31***	.012
Behavioural competence	4.60 (.69)	.62	4.68 (.75)	.76	29.94***	.010
<i>General positive youth development qualities (6 factors)</i>						
Social competence	4.66 (.72)	.85	4.71 (.78)	.91	15.97***	.006
Moral competence	4.83 (.66)	.69	4.83 (.73)	.81	.20	.000
Emotional competence	4.50 (.69)	.68	4.57 (.76)	.79	20.99***	.007
Resilience	4.78 (.74)	.78	4.76 (.79)	.86	2.88	.001
Self-efficacy	4.58 (.77)	.58	4.65 (.80)	.72	21.17***	.007
Spirituality	4.58 (.86)	.71	4.63 (.90)	.79	12.01**	.004
<i>Positive identity (2 factors)</i>						
Clear and positive identity	4.30 (.74)	.81	4.46 (.81)	.87	131.94***	.044
Beliefs in the future	4.89 (.68)	.78	4.85 (.75)	.84	6.99**	.002
<i>Prosocial attributes (1 factor)</i>						
Prosocial norms	4.86 (.73)	.61	4.85 (.76)	.76	1.25	.000
<b>Higher-order positive youth development factors</b>					<b>25.18***</b>	<b>.034</b>
Cognitive-behavioural competencies	4.60 (.58)	.87	4.69 (.67)	.93	48.11***	.017
General positive youth development qualities	4.66 (.56)	.89	4.69 (.66)	.94	9.21**	.003
Positive identity	4.55 (.66)	.87	4.63 (.74)	.91	38.57***	.013
Total positive youth development	4.64 (.53)	.95	4.69 (.64)	.97	23.29***	.008
<b>Psychological well-being</b>					<b>130.42***</b>	<b>.084</b>
Thriving	4.59 (.58)	.56	4.54 (.60)	.51	19.11***	.007
Life satisfaction	3.89 (.90)	.86	4.13 (.98)	.91	182.48***	.061
<b>Desired graduate attributes</b>					<b>8.93***</b>	<b>.013</b>
Problem-solving ability	4.53 (.65)	.75	4.58 (.76)	.84	8.96**	.003
Critical thinking	4.68 (.65)	.81	4.76 (.72)	.88	36.10***	.013
Life-long learning	4.69 (.70)	.56	4.74 (.76)	.70	9.48**	.003
Ethical leadership	4.70 (.52)	.90	4.76 (.63)	.94	20.52***	.007

Note. \*\*\* $p < .001$ ; \*\* $p < .01$ .

results of a higher-order confirmatory factor analysis (Shek and Ma 2010), measures based on three second-order factors, including cognitive-behavioural competencies, general positive youth development qualities, and positive identity were also employed.

### *Psychological well-being*

Thriving and life satisfaction were used to measure students' psychological well-being (Ma and Shek 2019). The thriving scale consisting of five items (e.g. "I am capable of managing my own life") was used to measure students' thriving in regard to plasticity in human development and the adaptive regulations of person-context relations (Lerner, Dowling, and Anderson 2003). The five items cover different areas, including the ability to manage life, apologies, spiritual values, possession of moral principles, and leadership. Students rated each item from 1 (*strongly disagree*) to 6 (*strongly agree*), with a higher score indicating a greater ability to thrive. The Cronbach's alpha reliability estimates were .56 and .51 at the pre-test and post-test, respectively. The Satisfaction with Life Scale (SWLS; Diener et al. 1985), consisting of five items (e.g. "I am satisfied with my life"), was adopted to measure participants' global judgment of their quality of life. The scale has been translated into Chinese and widely used in Hong Kong (Ma and Shek 2019). Items were rated on a six-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*), with a higher score indicating a higher level of life satisfaction. Good Cronbach's alpha reliability estimates regarding life satisfaction were obtained at the pre-test ( $\alpha = .86$ ) and the post-test ( $\alpha = .91$ ), respectively.

### *Desired graduate attributes*

University students' desired attributes included their problem-solving ability, critical thinking, life-long learning and ethical leadership (Shek and Ma 2014). A total of 23 items were rated by the university students to measure their qualities defined by the graduate attributes.

### *Data analysis plan*

To compare the differences in primary positive youth development constructs, higher-order positive youth development factors, psychological well-being and desired graduate attributes before and after students took the subject, a series of repeated-measure multivariate analyses of variance (MANOVAs) were conducted, with the independent variable of time (pretest and posttest), using SPSS 25.0. Following that, a series of repeated-measure univariate analyses of variance (ANOVAs) were carried out on each outcome. Values of partial eta squared of .01, .06, and .14 represent small, medium and large effect sizes, respectively (Cohen 1988).

## **Results**

Compared to the 2,370 students who only completed the pretest (but failed to complete the posttest), the 2,876 students who completed both the pretest and the posttest showed higher levels of positive youth development, psychological well-being and desired graduate attributes (see Table 6). Only the respondents with complete data for both the pretest and the posttest ( $n = 2,876$ ) were included in the following analyses. Since the data in this study were missing completely at random and the missing rate of all study variables was between zero and 1.2%, the missing values were therefore not imputed and pairwise deletion was used.

### *Changes in the primary measures and the composite measures*

The means, standard deviations and Cronbach's alphas of all outcomes at pretest and posttest are reported in Table 5. As predicted, students showed significant positive changes at posttest in

**Table 6.** Differences between students only with pretest data ( $n=2,370$ ) and with completed data ( $n=2,876$ ) in initial scores.

	Only pretest Mean (SD)	Both tests Mean (SD)	<i>t</i>
<b>Primary positive youth development factors</b>			
<i>Cognitive-behavioural competencies (3 factors)</i>			
Self-determination	4.47 (.79)	4.54 (.74)	−3.31**
Cognitive competence	4.61 (.64)	4.64 (.61)	−1.45
Behavioural competence	4.57 (.71)	4.60 (.69)	−1.60
<i>General positive youth development qualities (6 factors)</i>			
Social competence	4.64 (.73)	4.66 (.72)	−.71
Moral competence	4.78 (.69)	4.83 (.66)	−2.94**
Emotional competence	4.47 (.73)	4.50 (.69)	−1.69
Resilience	4.73 (.76)	4.78 (.74)	−2.65**
Self-efficacy	4.55 (.82)	4.58 (.77)	−1.43
Spirituality	4.51 (.86)	4.58 (.86)	−2.61**
<i>Positive identity (2 factors)</i>			
Clear and positive identity	4.27 (.79)	4.30 (.74)	−1.52
Beliefs in the future	4.84 (.71)	4.89 (.68)	−2.70**
<i>Prosocial attributes (1 factor)</i>			
Prosocial norms	4.82 (.76)	4.86 (.74)	−1.87
<b>Higher-order positive youth development factors</b>			
Cognitive-behavioural competencies	4.56 (.60)	4.60 (.57)	−2.30*
General positive youth development qualities	4.62 (.58)	4.66 (.56)	−2.69**
Positive identity	4.51 (.69)	4.55 (.66)	−2.11*
Total positive youth development	4.59 (.56)	4.63 (.53)	−2.68**
<b>Psychological well-being</b>			
Thriving	4.54 (.59)	4.58 (.58)	−2.63**
Life satisfaction	3.85 (.94)	3.89 (.90)	−1.46
<b>Desired graduate attributes</b>			
Problem-solving ability	4.51 (.70)	4.53 (.65)	−1.07
Critical thinking	4.65 (.68)	4.68 (.65)	−1.78
Life-long learning	4.64 (.74)	4.69 (.70)	−2.62**
Ethical leadership	4.67 (.54)	4.70 (.52)	−2.10*

most of the positive youth development constructs, psychological well-being and desired graduate attributes. Concerning primary positive youth development measures, significant multivariate time effects were found: Wilks'  $\lambda = .88$ ,  $F(12, 2808) = 31.23$ ,  $p < .001$ ,  $\eta^2_p = .118$ , with a medium effect size. Follow-up repeated-measure ANOVAs on each outcome showed that, with the exception of resilience, moral competence and prosocial norms ( $ps > .05$ ), students reported significantly higher posttest scores in eight primary positive youth development factors: self-determination, cognitive competence, behavioural competence, social competence, emotional competence, self-efficacy, spirituality and clear and positive identity ( $ps < .01$ ; see Table 5). However, it was noted that students reported higher pretest scores for beliefs in the future ( $F(1, 2838) = 6.99$ ,  $p < .01$ ) than at posttest.

As expected, repeated-measure MANOVAs revealed significant multivariate effects of time in all higher-order factors (Wilks'  $\lambda = .97$ ,  $F(4, 2839) = 25.18$ ,  $p < .001$ ,  $\eta^2_p = .034$ ). The results of further univariate repeated-measure ANOVAs revealed that the students experienced significant improvements in cognitive-behavioural competencies, general positive youth development qualities, positive identity and total positive youth development at posttest ( $ps < .01$ ; see Table 5). Hypothesis one is supported to a great extent based on the primary positive youth development measures, composite positive youth development measures and total scale measure.

### **Changes in psychological well-being**

We found significant multivariate effects of time in psychological well-being, with a medium effect size (Wilks'  $\lambda = .92$ ,  $F(2, 2828) = 130.42$ ,  $p < .001$ ,  $\eta^2_p = .084$ ). Further analyses using

repeated-measure ANOVAs showed that students displayed a significantly higher level of life satisfaction at posttest, while students' thriving score at posttest was lower than at pretest (see Table 5). Hypothesis two is partially supported.

### ***Changes in desired graduate attributes***

As predicted, significant multivariate effects of time were observed in all desired graduate attributes (Wilks'  $\lambda = .99$ ,  $F(4, 2812) = 8.93$ ,  $p < .001$ ,  $\eta^2_p = .013$ ). Compared to their performance at pretest, students experienced significant improvements at posttest in their problem-solving ability, critical thinking, life-long learning and ethical leadership ( $ps < .01$ ; see Table 5). Hypothesis three is fully supported.

## **Discussion**

This study explored the changes experienced by university students in regard to positive youth development attributes, psychological well-being and desired graduate attributes, after they completed Tomorrow's Leaders, a leadership subject that incorporated positive youth development concepts. In line with our expectations, students showed significant and positive improvements in most of the primary positive youth development attributes, all higher-order positive youth development factors, life satisfaction and all desired graduate attributes. These findings support the effectiveness of Tomorrow's Leaders in emerging adulthood when positive youth development concepts are incorporated into a leadership subject.

### ***Positive changes after taking tomorrow's leaders***

Compared to the pretest scores, students displayed significantly higher posttest scores in most positive youth development attributes. Similar findings were revealed in Project PATHS, a positive youth development program that has been applied in Hong Kong secondary schools during the past 10 years (e.g. Ma and Shek 2019; Ma, Shek, and Chen 2019). The research team found that adolescents in junior high schools benefit greatly from this program and displayed significant positive improvements in most of the positive youth development attributes after they participated in the positive youth development training program.

Students showed no significant improvements in a few of the positive youth development constructs at posttest, including resilience, moral competence and prosocial norms. Such findings are consistent with the first implementation of Tomorrow's Leaders in 2012 (Shek and Ma 2014). One explanation for this is that it may take more time to enhance individuals' resilience and shape their moral character and prosocial norms, as a short-term program taking place over 13 weeks is not long enough to make a difference in these respects. Another explanation is that students may need to encounter some specific contexts (e.g. adversities and moral dilemmas) in order to be aware of the changes they have made in these aspects.

A decline in students' beliefs in the future at the posttest was also noted. Two factors may account for this negative change. On the one hand, when students completed the posttest questionnaire, the final examination period was approaching, which is likely to have made them feel anxious and uncertain about their future. Besides, as undergraduate students may face many difficulties, challenges, and choices that are different from their expectations and dreams in high school, they may need more time to think about their four-year university lives and future careers, and further consolidate their beliefs regarding the future. A one-semester program covers a relatively short period of time in measuring this concept and a longer program may be required to clarify these results.

Despite these unexpected changes in a few of the individuals' constructs, the students showed significant and positive posttest improvements in all higher-order positive youth development factors and the total score measure. This implies that the students performed significantly better in cognitive-behavioural competencies, general positive youth development qualities, positive identity and total positive youth development. Tomorrow's Leaders effectively utilised the positive youth development constructs that promote students' holistic development by enhancing their cognitive-behaviour competencies, strengthening their general positive youth development qualities, and shaping their positive identity. These findings are in line with the application of positive youth development programs in adolescents (Ma and Shek 2019).

After taking Tomorrow's Leaders, students experienced significant improvements in life satisfaction, suggesting that this subject can promote this. Shek and Ma (2014) also obtained the same finding when this subject first ran at the university. However, we found the thriving score at posttest to be slightly lower than that at pretest. It is possible that the concept of thriving is not covered successfully in the subject.

Compared with the pretest, significant improvements were found at posttest in all desired graduate attributes, demonstrating that Tomorrow's Leaders promotes youths' problem-solving ability, critical thinking, life-long learning and ethical leadership. These findings echo Shek and J. Leung's (2014) expectation of the subject, in that university students should develop better problem-solving abilities and critical thinking, and become life-long learners and ethical leaders by completing the course.

### ***Strengths of "tomorrow's leaders" as a positive youth development leadership subject***

Although Tomorrow's Leaders is not perfect in promoting all 12 positive youth development attributes covered during the course, this course has promoted the holistic development of the students. When the subject was first run at the university in the fall semester of 2012, students only made significant improvements in self-determination among the 12 positive youth development attributes (Shek and Ma 2014). In this study, the students showed significant and positive changes in eight positive youth development constructs, including self-determination, cognitive competence, behavioural competence, social competence, emotional competence, self-efficacy, spirituality and clear and positive identity. Different from the lack of significant improvement in desired graduate attributes that was found after students took the subject in 2012 (Shek and Ma 2014), this study found that the students made significant improvements in regard to all four of the desired graduate attributes.

Compared to previous positive youth development programs involving adolescents, Tomorrow's Leaders is more effective in terms of its intervention period and the number of positive youth development attributes that can be improved. Around 80% of positive youth development programs need at least a nine-month period to be effective (Catalano et al. 2004). Tomorrow's Leaders enables students to make significant changes within three months (13 weeks). In addition, most programs only focus on the prevention of a single problematic behaviour (Catalano et al. 2004), whereas Tomorrow's Leaders promotes most of the positive youth development attributes.

Overall, this positive youth development leadership subject can help undergraduates to successfully transit from high school to university and adapt more easily to university by improving their competence and personal development. Positive youth development involves the development of mutually adaptive and beneficial relationships between young people and their new contexts (Lerner et al. 2015). With good performance in the attributes of positive youth development, young people are more likely to make commitments and contributions to themselves, their families and the community, and become responsible citizens in society (Lerner, Dowling, and Anderson 2003).

## Implications

Replication, as the cornerstone of scientific progress, is meaningful. As early as 1969, the American psychologist Donald Campbell (1969) noted the importance and value of replication studies in the social sciences, because it is difficult to achieve experimental isolation in this context, and intervention effects interact with diverse social factors in different settings. Therefore, replicating findings in different contexts and with different populations can benefit the knowledge-building process and theoretical refinement and generalizability (Coulton 1982; Bettis, Helfat, and Shaver 2016). However, the value of replication studies is usually underestimated, resulting in a very small number of studies actually being replicated. For example, Kranz and O'Hare (2011) demonstrated the factorial validity and reliability of the Substance Abuse Treatment Self-Efficacy Scale through replicating their own previous studies conducted in 2003 (Kranz 2003) and 2006 (Kranz and O'Hare 2006), respectively. Ma, Shek, and Leung (2019) successfully replicated two previous studies (i.e. Ma and Shek 2019; Ma, Shek, and Chen 2019) and confirmed the effectiveness of a youth program in promoting adolescents' positive youth development attributes and psychological well-being. Singer et al. (2019) replicated Ray et al. (2013) study and revealed that higher levels of compassion satisfaction and lower levels of compassion fatigue predicted lower rates of burnout in victim advocates.

In short, replicating existing findings by following the route taken by previous researchers is the most common and scientifically productive method of building and consolidating knowledge (King 1995). Without doubt, this study not only successfully replicates the effectiveness of a positive youth development program that has been established in Chinese adolescents (e.g. Shek and Sun 2013; Ma, Shek, and Chen 2018; Ma and Shek 2019), but also extends our understanding of positive youth development applications from adolescents to emerging adults. This enables us to be more confident in promoting the positive youth development program in a university context (Shek et al. 2019).

Through investigating 55 leadership program operators in Hong Kong, the Commission on Youth (2000) concluded that leadership covers five domains, including personal ability, the ability to relate to others, teamwork, community participation and national/international perspective. These domains are closely related to different positive youth development constructs that are essential to nurturing university students (Catalano et al. 2004). In contemporary society, positive youth development attributes are required by all young people, but are not limited to leaders. The integration of positive youth development in leadership development makes the subject explored in this study different from most traditional leadership programs with the mission of cultivating elitism and promoting leadership skills; it places more emphasis on individuals' uniqueness and strengths. With leadership capacity and holistic development qualities, one is more likely to have a strong perspective in regard to life and equip oneself to be a leader. It implies that incorporating positive youth development components into leadership subjects is necessary and beneficial for university students.

## Limitations and future directions

Although this study has many strengths and implications, the findings should be interpreted in light of several limitations. First, less than half of the students completed both the pretest and posttest. It precludes us to gain a comprehensive picture of the changes experienced by all students who took Tomorrow's Leaders. In particular, we have noticed that, compared with students who completed both the pretest and posttest, students who only completed the pretest showed significantly lower initial scores in regard to the positive youth development attributes, psychological well-being and desired graduate attributes. Participation in this study was voluntary, but we should consider strategies to increase the response rate in the future, in order to gain a

more comprehensive understanding of the students who take this subject. We can also adopt various evaluation strategies, such as subjective outcome evaluation and process evaluation, to confirm the effectiveness of this subject from other perspectives. It is noteworthy that the existing findings are basically consistent – the subject is able to promote holistic youth development based on different evaluation strategies (Shek 2013).

Second, this study followed a pretest and posttest design within one semester, and there was no follow-up test. A follow-up evaluation would allow us to investigate whether or not the positive effects of this subject on students' development can be sustained throughout their four-year university lives, or even longer than this (after their graduation). Third, this study employed a single-group design and did not include a control group consisting of students who did not take the subject. Although a single-group pre-test and post-test design is documented as being an effective way to capture the changes studied (Ma and Shek 2019), it precludes us to differentiate between the improvements caused by the subject and those resulting from students' natural maturation.

Fourth, we only explored the positive outcomes of the subject and did not examine any prevention effects in regard to the more negative experiences of students, such as their emotional problems (e.g. depression and anxiety) and behavioural problems (e.g. aggression, drug use and suicide). The prevention or intervention effects of Tomorrow's Leaders on potential risk factors could be explored in future studies. Finally, although the evaluation findings were overwhelmingly positive in this study, the results cannot be generalised to other settings, as this subject is only taught at one university in Hong Kong. There is a need to promote similar subjects and replicate the findings obtained from this study in other universities in Hong Kong, as well as in other Chinese contexts.

## Conclusion

Despite the aforementioned limitations, the positive effects reported by this study demonstrate the successful application of a positive youth development leadership subject in emerging adults in a university context. This subject is a pioneering and innovative attempt to integrate positive youth development concepts into a credit-bearing course in higher education and has provided a good example of the application of positive youth development programs in universities. This successful experience should be promoted in more universities because positive youth development leadership subjects can enable young people to feel prepared for the future challenges they may face by promoting their intra- and inter-personal competencies and leadership skills.

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