Promoting psychosocial competencies in university students: evaluation based on a one-group pre-test/post-test design

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Abstract

At The Hong Kong Polytechnic University, a two-credit general education course entitled "Tomorrow's Leaders" was developed to promote intra- and interpersonal competencies in university students. The course was piloted in four classes of students in the 2010/11 academic year. Pre-test and post-test data utilizing the Chinese Positive Youth Development Scale (CPYDS) were collected from 50 students taking the course. Positive changes in the program participants based on the total scale and subscale scores were observed. The present study provides pioneering support for the effectiveness of the course in promoting holistic development of Chinese university students in Hong Kong.

Keywords: leadership; objective outcome evaluation; positive youth development; psychosocial competencies; university students.

Introduction

There is growing dissatisfaction that education in contemporary universities is not able to help students develop in a holistic manner. In the past two decades, books criticizing higher education have been published. Some examples include "The closing of the American mind" (1), "The university in ruins" (2), and "The moral collapse of the university" (3). In his book entitled "Our underachieving colleges", the former Harvard President Derek Bok examined learning in undergraduate education and concluded that students have to catch up on critical thinking, quantitative skills, and moral reasoning to become well-informed citizens (4). In fact, Bok was skeptical whether contemporary university students actually learn more than their counterparts did half a decade ago. In another book entitled "Excellence without a soul" written by a former dean and professor of Harvard University, Harry Lewis argued that the fundamental purpose of university has been forgotten and its mission was lost (5). Lewis was critical of the "cafeteria" approach in general education courses which lacks vision and mission. He also highlighted the historic decay of moral education at Harvard and criticized that students could not gain autonomy, resilience, and a sense of responsibility from a university education. Furthermore, he also warned of the predominance of money as the driving force for education decision-making and consumer satisfaction. In short, one key message from Lewis's book is that universities fail to nurture the holistic development of university students. As pointed out by Tull (6), "while Lewis writes about his own personal observations at Harvard, his evaluations of failures and hot button issues is applicable to many other public and private institutions of higher education" (p. 2).

In a special issue focusing on contemporary tertiary education, Dalton and Crosby (7) argued that inner lives of university students is grossly neglected in university education and that university education fails to help students to "make internal connections to the defining beliefs and purposes in their lives … since they do not reach that part of students' lives where things really matter" (p. 1). Dalton and Crosby (8) further argued that contemporary universities have focused on achievements rather than one's inner life and character as criteria of success. Coupled with the problems commonly observed in university students which include mental health problems, rise in egocentrism and drop in empathy, one basic question that should be asked is how to promote the holistic development of university students.

How can, and should, we promote holistic development of university students? There are at least three ways of promoting psychosocial competencies in university students. First, services offered by the student affairs office (SAO) may perform this job. Historically, SAOs have played an important role in providing remedial as well as developmental services for university students because of two reasons – availability of clinical experts (such as clinical psychologists) in SAOs and teachers in academic departments are usually not trained to deal with issues surrounding holistic development in university students. Nevertheless, while the valuable contribution

of SAOs to student development is beyond doubt, students usually join developmental programs offered by the SAOs in a voluntary manner. Hence, those who have genuine needs may not join such programs. From a public health perspective, the possibility of "universal prevention" should be seriously considered and the question of whether "no student is left behind" should be asked (9).

Another possible approach is to change the "macro" and structural conditions in the campus. For example, we can build an accepting and empowering campus environment so that students can reflect more on their inner lives. Extracurricular and co-curricular activities can also be designed to provide opportunities for students to develop their psychosocial competencies. While this approach targets the basic system factors, there are two limitations of this approach. First, as there is always a gap between policies and practice, policies on changing the environmental factors to promote holistic development of university students may eventually stay on paper. Second, there are few attempts to evaluate the effectiveness of such attempts.

An alternative and non-mutually exclusive approach to promote holistic youth development is to develop and provide curriculum-based courses to university students. In high schools in North America, there is a strong emphasis on social and emotional learning and curriculum-based positive youth development programs are commonly implemented. For example, Catalano and his associates (10) reviewed the successful positive youth development programs in the USA and identified several constructs intrinsic to successful programs. These constructs include: promotion of bonding, cultivation of resilience, promotion of social competence, promotion of emotional competence, promotion of cognitive competence, promotion of behavioral competence, promotion of moral competence, cultivation of self-determination, promotion of spirituality, development of self-efficacy, development of a clear and positive identity, promotion of beliefs in the future, provision of recognition for positive behavior, provision of opportunities for prosocial involvement, and fostering prosocial norms.

Interestingly, such curriculum-based positive youth development programs begin to disappear in university settings. There are several possible factors leading to this phenomenon. First, there is a common belief that university students are grown adults who should possess adequate life skills. Second, universities commonly focus on "academic" subjects and courses on personal development and psychosocial competencies are regarded to be relatively unimportant. While holistic development is always in the vision statements of universities, such topics are rarely addressed in the formal curriculum. Third, there is the argument that students should be given the option to take courses on holistic development and it is inappropriate to set too many required courses.

To what extent one should design *required courses* on positive youth development for university students? There are at least two arguments supporting this initiative. First, as research findings show that university students display many problems (such as egocentrism and mental health problems), there is a need to educate and nurture them. In fact,

the strategy of required courses is consistent with the spirit of public health's notion of universal prevention. Second, universities normally have compulsory courses, such as language requirements and physical education courses. Why? It is simply because of education vision. If we believe holistic development of university students is important, required courses promoting psychosocial competencies of university students are indispensable.

With specific reference to university students in Hong Kong, there are research findings showing that there are different developmental issues. As argued by Shek (11), development of credit-bearing courses promoting psychosocial competencies in university students is an attractive option. At The Hong Kong Polytechnic University, a course entitled "Tomorrow's Leaders" was designed to enable students to learn theories, research and concepts of intra- and interpersonal qualities of effective leaders. This course also intends to train students to develop and reflect on their intra- and interpersonal qualities. Upon completion of the subject, it is expected that students will be able to: (a) understand theories, research, and concepts on the intra- and interpersonal qualities of effective leaders; (b) develop self-awareness and self-understanding; (c) acquire interpersonal skills; and (d) develop self-reflection skills in their lives.

While the rationales for developing the course are reasonable, one fundamental question that should be asked is whether the program is effective in helping the students who take the course. This question should be asked because not all positive youth development programs are effective. In the Western context, the review of Catalano et al. (10) showed that among the 77 programs under review, only roughly one-third of them were effective. In the context of Hong Kong, Shek, Lam and Tsoi (12) concluded that evidence-based social work practice was very weak in Hong Kong and there is a need to accumulate research findings on the effectiveness of psychosocial intervention programs. Shek and Yu (13) further showed that there were very few effective adolescent prevention and positive youth development programs in Hong Kong. Against this background, this study attempts to provide some evidence on the effectiveness of the course entitled "Tomorrow's Leaders" at The Hong Kong Polytechnic University.

It is noteworthy that there are different levels of evidence (Grade 1 to Grade 7) in human service programs (14). Grade 7 evidence refers to clinical information produced by researchers and practitioners in case reports. For Grade 6 evidence, pre-experimental design without the involvement of a control group is commonly used. While Grade 5 evidence is based on non-equivalent group design (i.e., participants are not randomly assigned to the experimental group and control group), Grade 4 evidence is based on at least one well-designed, randomized, controlled trial or an interrupted time-series design that is replicated across three cases. For Grade 3 evidence, multiple well-designed, randomized, controlled trials or multiple well-designed, interrupted time-series experiments conducted by a single research team are conducted. Finally, while two or more independent research teams are involved in multiple well-designed, randomized,

controlled trials or multiple well-designed, interrupted time-series experiments in Grade 2 evidence, preventive intervention is implemented in its intended setting with sufficient staff training and monitoring of implementation and outcomes is intrinsic to Grade 1 evidence.

Although randomized groups trials in multiple sites conducted by different teams of independent researchers should be attempted, there are several practical difficulties involved. First, it is very expensive to conduct randomized group trials in different settings. Second, it is not easy to randomly assign schools and clients to the control group. As remarked by McCall et al., "methodologically, it is now acknowledged that conducting robust true experiments in the field – the scientific ideal described at the beginning of this chapter – is extremely difficult and often impossible" [(15), p. 982]. In the present study, the one-group pre-test/post-test design was adopted to examine changes in the students. Although there are limitations of evaluation study based on the one-group pre-test/post-test design, this strategy has been widely used in human services evaluation research. Thyer (16) pointed out that there are many myths in program evaluation (e.g., "you must control for the most relevant threats to internal validity" and "you must randomly assign clients to various control and experimental groups") and suggested that pre-experimental designs (e.g., one-group pre-test/post-test design) are valuable strategies that could be meaningfully used in practice settings.

In the field of human services, social work researchers have commonly used one-group pre-test/post-test design to evaluate social programs. For example, to examine the effectiveness of a one-day continuing education program on evidence-based practice among community workers (n=69), Parrish and Rubin (17) used a one-group pre-test/post-test design with 3 months between pre-test and post-test to look at the program effect. Sutphen et al. (18) reviewed studies on truancy intervention and found that there were several studies using one-group pre-test/post-test design. Similarly, this design is also commonly used in the field of nursing. For example, Arslanian-Engoren and her associates (19) used a quasi-experimental, one-group pre-test/post-test design to evaluate the effectiveness of the Aid to Cardiac Triage (ACT) intervention to improve the cardiac triage decisions of nurses in an emergency department. Results showed that their decisions were improved after the intervention. Mynatt et al. (20) examined whether treatment using INSIGHT therapy could reduced psychiatric problems, hopelessness and loneliness in African-American women using a non-experimental one-group pre-test/post-test design. They found that the participants improved in the outcome measures.

The one-group pre-test/post-test design is also used in the field of education and learning in different contexts, including the college contexts. Leavy (21) used a non-experimental one-group pre-test/post-test design to examine changes in elementary preservice teachers' understandings of statistics. Using a new way of developing creative abilities (Role Play Training in Creativity), Karwowski and Soszynski (22) used a one-group pre-test/post-test design to examine the effectiveness of related training. Results showed that there

was significant increase in fluency and originality after the intervention. Sak and Oz (23) used the one-group pre-test/post-test research design to examine the effectiveness of the Creative Reversal Act on the creative thinking of students. Bicen and Laverie (24) used this design to examine the effectiveness of using group-based assessment. Curran et al. (25) conducted a one-group pre-test/post-test study to evaluate the effectiveness of an undergraduate HIV/AIDS inter-professional education program in changing the role perception and attitude towards collaboration among medical, nursing and pharmacy students. Results showed that there was an increase in awareness of the importance of inter-professional learning among the students in the medical and allied professionals.

Methods

The course titled "Tommorrow's Leaders" was piloted in the second term of the 2010/11 school year in The Hong Kong Polytechnic University. The subject was offered to four classes of students, with a total of 268 students (65 in Class A, 68 in Class B, 66 in Class C and 69 in Class D). During the first lecture, a questionnaire containing items on holistic youth development was distributed to the students to complete the pre-test assessment. The students were invited to participate in the study in a voluntary manner and informed consent was obtained. They were instructed to complete the questionnaire after class and returned the questionnaire in the next lecture. To match the pre-test data with the post-test data, informants were asked to put down their date of birth (month and date) and the last four digits of their Hong Kong Identity Card numbers. At Lecture 13, the same questionnaire was distributed to students who had completed the questionnaire at pre-test. Students were invited to return the questionnaire at the last lecture (i.e., Lecture 14).

Instruments

At pre-test and post-test, the participants were invited to respond to a questionnaire including measures of positive youth development, thriving, life satisfaction, adolescent problem behavior, and demographic information. In this paper, findings based on the Chinese Positive Youth Development Scale (CPYDS) are reported. The CPYDS was developed to assess holistic development in the program participants and it was found to possess adequate psychometric properties (9). Based on reliability analyses of both the pre-test and post-test data in the present study, some slight modifications in the composition of the items of the 13 subscales of the CPYDS are shown as follows:

1. Resilience Subscale (6 items)
2. Social Competence Subscale (7 items)
3. Emotional Competence Subscale (6 items)
4. Cognitive Competence Subscale (6 items)
5. Behavioral Competence Subscale (modified 5 items)
6. Moral Competence Subscale (6 items)
7. Self-determination Subscale (modified 5 items)
8. Self-efficacy Subscale (modified 2 items)
9. Beliefs in the Future Subscale (modified 3 items)
10. Clear and Positive Identity Subscale (7 items)
11. Spirituality Subscale (7 items)
12. Bonding Subscale (6 items)
13. Prosocial Norms Subscale (5 items)

Several composite indices based on the above measures were also formed. According to Shek et al. (26, 27), the mean score of all 13 subscales could be used as an overall measure of positive development (i.e., CPYDS). In addition, based on factor analysis, 29 items involving different domains were used to form a composite variable (KEY29). Finally, based on conceptual analyses of the items, 1 item was derived for each domain which resulted in a 13-item key measure (KEY13). Cronbach's alpha coefficients for the 13 subscales, two key measures, and the overall indicator of positive development at both pre-test and post-test are presented in Table 1.

Results

A multivariate analysis of variance (MANOVA) with pre-test vs. post-test as the independent variable and the 13 subscales as dependent variables was performed (see Table 2). The omnibus F-test was significant, which suggests that there was an overall difference between pre-test and posttest. Results based on one-way ANOVA also showed that the participants had significant increase in the scores in the domains of emotional competence, cognitive competence, behavioral competence, self-determination and positive identity. Significant increase in posttest scores was also observed in several composite scores, including CPYDS, KEY29, and KEY13.

Discussion

The objective outcome evaluation findings reported in this paper are generally positive and they are consistent with the original expectations. Significant differences between pre-test and post-test were found based on the total CPYDS

Table 1 Reliability of the different measures used in the study.

	Pre-test α (mean)[a]	Post-test α (mean)[a]
CPYDS[b] measures		
Bonding (6 items)	0.72 (0.30)	0.74 (0.33)
Resilience (6 items)	0.88 (0.56)	0.82 (0.42)
Social competence (7 items)	0.76 (0.33)	0.83 (0.43)
Emotional competence (6 items)	0.65 (0.22)	0.76 (0.35)
Cognitive competence (6 items)	0.84 (0.47)	0.84 (0.46)
Behavioral competence (5 items)	0.64 (0.27)	0.59 (0.23)
Moral competence (6 items)	0.50 (0.15)	0.68 (0.28)
Self-determination (5 items)	0.49 (0.17)	0.74 (0.37)
Self-efficacy (2 items)	0.42 (0.27)	0.66 (0.50)
Clear and positive identity (7 items)	0.73 (0.27)	0.75 (0.31)
Beliefs in the future (3 items)	0.61 (0.34)	0.73 (0.49)
Prosocial norms (5 items)	0.51 (0.17)	0.66 (0.27)
Spirituality (7 items)	0.79 (0.41)	0.80 (0.43)
KEY29[c] (29 items)	0.87 (0.21)	0.92 (0.29)
KEY13[d] (13 items)	0.78 (0.23)	0.77 (0.20)
CPYDS (71 items)	0.94 (0.19)	0.96 (0.25)

[a]Mean inter-item correlation. [b]CPYDS is the total 71 items of 13 subscales. [c]KEY29 is an indicator based on the total scores of the 29 key items of the CPYDS. [d]KEY13 is an indicator based on the mean scores of the 13 key items of the CPYDS. CPYDS, Chinese Positive Youth Development Scale.

scores and some of the composite and subscale measures. The program effect could be regarded as encouraging in view of the short duration of the intervention program which lasted for about 14 weeks. With reference to the observation that university students lacked psychosocial competencies, the present study suggests that credit-bearing course on positive youth development is an attractive and effective strategy. It is noteworthy that this is the first known scientific study which examined the effectiveness of a credit-bearing course which attempts to promote psychosocial competencies in university students in different Chinese communities. As Shek and Yu (13) pointed out that there are very few validated adolescent prevention and positive youth development programs in Asia, the present study is a pioneer contribution to the existing literature.

The present findings are consistent with the evaluation findings based on other evaluation strategies (28, 29). Utilizing subjective outcome evaluation findings collected from 189 students taking this course, results showed that students generally had positive perceptions of the program and implementers, with over 90% of the participants indicating that they were satisfied with the program and that the program was perceived as helpful to them in the domains of holistic development and leadership (30). Furthermore, post-lecture subjective outcome evaluation and process evaluation also showed that the lectures were generally well-received by the students and adherence to the curriculum materials was high. Taken as a whole, these research findings generally suggest that Tomorrow's Leaders can promote psychosocial competencies in university students in Hong Kong.

However, there are two points that should be noted when the present findings were interpreted. First, as the present study adopted a short-term cross-sectional design, the long-term effects of the course are unclear. To understand the effect of the program over time, longitudinal data are indispensable. In particular, it would be illuminating to understand the applicability of the knowledge learned from the course in the real world. One possible evaluation strategy is to ask students to write personal reflections after taking this course. This strategy has proven to be very effective in the Project P.A.T.H.S. (Positive Adolescent Training through Holistic Social Programmes) in Hong Kong (30). In addition, the use of qualitative evaluation strategies would also be helpful in understanding changes in students taking this kind of program (31–34).

Second, as the design of the study is a pre-experimental design, there are different alternative explanations for the positive changes observed. Besides the interpretation that the course was effective in promoting psychosocial competencies in university students, positive changes in the students may be a result of maturation effect. Hence, it would be helpful to add a control group to rule out this alternative explanation in future, just like the longitudinal studies conducted in Project P.A.T.H.S. (35, 36). Furthermore, as the Chinese Positive Youth Development Scale (CPYDS) was originally used in early adolescents in Hong Kong, further studies are needed to understand the psychometric properties of this scale in late

Table 2   Changes in the program participants based on the different measures of positive youth development.

Variables/subscales	Pre-test		Post-test		F-value/ T-value
	Mean	SD	Mean	SD	
GLM repeated test results					
Omnibus test effect (multivariate)	4.74		4.89		6.60[a]
Bonding	5.04	0.47	5.14	0.46	3.34
Resilience	4.91	0.65	5.05	0.54	4.03
Social competence	4.69	0.56	4.82	0.58	4.02
Emotional competence	4.40	0.59	4.67	0.53	8.42[b]
Cognitive competence	4.56	0.65	4.77	0.57	9.00[b]
Behavioral competence	4.61	0.57	4.80	0.55	5.65[a]
Moral competence	4.66	0.49	4.78	0.45	3.93
Self-determination	4.60	0.52	4.78	0.64	5.38[a]
Self-efficacy	4.41	0.75	4.51	0.75	2.74
Clear and positive identity	4.43	0.59	4.64	0.57	9.90[b]
Beliefs in the future	5.12	0.57	5.18	0.58	1.49
Prosocial norms	4.88	0.47	4.91	0.54	0.17
Spirituality	5.29	0.77	5.44	0.79	3.77
T-tests for composite and other measures					
Total scale (CPYDS[c])	4.75	0.39	4.89	0.42	–2.66[a]
KEY29[d]	134.27	12.37	139.15	13.18	–3.07[b]
KEY13[e]	4.66	0.46	4.81	0.40	–2.62[a]

[a]$p < 0.05$ (one-tailed). [b]$p < 0.01$ (one-tailed). [c]CPYDS is the total 71 items of 13 subscales. [d]KEY29 is an indicator based on the total scores of the 29 key items of the CPYDS. [e]KEY13 is an indicator based on the mean scores of the 13 key items of the CPYDS. ASC, academic and school competence; CBC, cognitive-behavioral competencies second-order factor; CPYDS, Chinese Positive Youth Development Scale; GPYDQ, general positive youth development qualities second-order factor; PIT, positive identity second-order factor.

adolescents. In view of the paucity of studies on positive youth development programs in different Chinese contexts (37, 38), the present study is an important addition to the literature.

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