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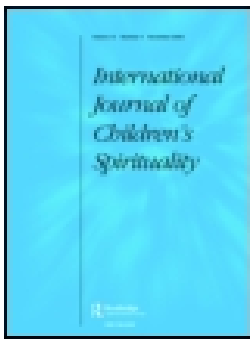
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The cultivation of university students' spiritual wellbeing in holistic education: longitudinal mixed-methods study

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ABSTRACT

This longitudinal mixed-methods study, which consisted of (1) questionnaire surveys and (2) individual in-depth interviews, explored the development of the spiritual wellbeing of university students over the past four years under the cultivation of holistic education. A sample of 276 in quantitative and 32 students in qualitative studies was successfully followed up. The quantitative results suggest a main effect of time on the spiritual wellbeing of students, though no significant interaction effect is found between time and other variables, including gender, age and major disciplines. Qualitative results further show that holistic education through experiential learning contributes highly to the development of Chinese university students' spiritual wellbeing in three specific domains, namely personal and communal, environmental and transcendental. The finding indicates that (1) environment-related forces and (2) education-related dynamics were critical factors for the successful implementation of holistic education through experiential learning in universities.

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KEYWORDS

Spirituality; holistic education; spiritual wellbeing; experiential learning

Introduction

In previous decades, many studies have focused on the academic achievements and intellectual developments of students (McKenzie and Schweitzer 2001; Pike and Kuh 2005). For example, the study of McKenzie and Schweitzer (2001) concerned the factors predicting the academic performance of university students. Education definitely improves students' cognitive ability (Yen, Konold, and McDermott 2004), whilst higher education also enhances students' generic abilities (Bitzer 2005), including professional knowledge (Matoba, Shibata, and Arani 2007), vocational techniques (Boden and Nedeva 2010) and communication skills (Hannah, Millichamp, and Ayers 2004). Accordingly, the following question should be answered: Is higher education limited to these developments for the younger generation? In fact, the development of students'

spirituality and inner lives should also be concerned and emphasised. These students, who are in the life stages of adolescence and evolving adulthood, experience significant growing transformations, developmental transitions and progressive challenges in terms of their physical and psychological health (Yonker, Schnabelrauch, and DeHaan 2012). Hence, another question should be answered: Could the spiritual wellbeing of university students be nurtured through holistic education in higher educations?

The higher education system of Hong Kong underwent substantial changes in the 2012 academic year (Chan and Ngai 2014). A new scheme (that is 3 + 3 + 4) replaced the old system (that is 3 + 2 + 2 + 3) to respond to the requirements of global economic development, that required multi-tasks and functions, for versatile talents. This new scheme focuses on the academic structure of Hong Kong's senior secondary and higher education, with three years of junior secondary school, three years of senior secondary school and four years of university education. The education reform shifted from the formerly narrow-focused curriculum to provide a broad, balanced and diversified curriculum (Education and Manpower Bureau 2005) that will promote the holistic development of students (Lai and Cheung 2013). The spirituality of students is thought to be promoted under a holistic education system (Miller et al. 2005) because it emphasised the integration of students' body, mind and spirit. Students could be well cultivated in virtue, intelligence, physical, solidarity, beauty and spirituality.

Few studies have been conducted that focus on the effects and contributions of holistic education in universities on the development of students' spiritual wellbeing. Nevertheless, Astin et al. (2010) indicated that experiential learning experiences in the university could help develop the spirituality of students. Moreover, information is limited in terms of the fundamental mechanism that enables this specific link, especially one that could be applicable in Chinese societies.

Research questions

This study aims to provide answers to the following questions.

Question 1: Can the spiritual wellbeing of young Chinese undergraduate students be nurtured through holistic education in universities?

Question 2: If so, in what ways can holistic education facilitate changes in the spiritual wellbeing of students?

Question 3: How do students experience (process) these changes (growth and development)?

Different academic major disciplines and their relationships with experiential learning

Various major disciplines promote the development of students in numerous areas, including literacy (Butler, 2013), temperament (Noël, Michaels, and Levas 2003) and spirituality (Astin et al., 2010). For instance, science has a linear and hierarchical course structure and curriculum design, and its assessment tasks are 'objective' and conducted in a regular, systematic and explicit manner (Neumann, Parry, and Becher 2002). Students of science and technology are trained to be well organised and self-controlled in laboratory sessions, experiments and fieldwork activities (Smeby 1996; Hativa 1997).

The arts and humanities have an open course structure and curriculum design as well as flexible and qualitative content areas and ranges (Kolb 1981; Neumann, Parry, and Becher 2002). Activities related to teaching and learning are also constructive and interpretative (Neumann, Parry, and Becher 2002). The students are nurtured to exhibit an open-ended nature of soft pure knowledge and individualistic interpretation (Smart and Ethington 1995).

Moreover, the contents of social science and business courses are generally related to life, thereby enabling students to think, criticise and reflect on life and humanity (Neumann, Parry, and Becher 2002). Social science and business constantly adopt student-centred learning (Kember 2009; Lindblom-Ylänne et al. 2006), project-based learning (Helle, Tynjälä, and Olkinuora 2006; Major and Palmer 2001) and cooperative learning (Johnson and Johnson 2009).

Numerous studies found that experiential learning has been embedded in various disciplines in universities for the holistic development of students (Healey and Jenkins 2000; Kolb and Kolb 2006; Shek 2010). Kolb and Kolb (2006) found that the success and effectiveness of university courses delivered in the ways of experiential learning largely depended on the capabilities, experience and enthusiasm of the teacher. Resource allocation, teacher training and supports from universities are also crucial for the successful implementation of experiential learning in universities (Hickcox 2002) and Kolb and Kolb (2006). The course curriculum and learning process of students were likewise integrated with problem-solving and decision-making skills to enhance the learning satisfaction and academic achievement of students (Howard et al. 2011). Stiernborg, Zaldivar, and Santiago (1996) proposed that the important elements in experiential learning include (1) facilitating students' initiative through role play and personal involvement through reflection; (2) providing occasions and opportunities in reality for students' application and integration of theories, concepts and knowledge learned; and (3) allowing course designs to be more flexible and diverse with a learner-centred focus.

Spirituality, health, spiritual health and spiritual wellbeing

Spirituality is believed to be a pursuit of an individual to determine life's purpose that may or may not be related to religious beliefs (Tanyi 2002). Fisher (1998) believed that spirituality involves the inner emotional state, experiences, endeavours and beliefs of humanity related to the value of life. In particular, spirituality enables individuals to pursue life with love, respect and care for oneself and others, the environment and God (Fisher 1998).

Health is also a multidimensional concept that covers the following: (1) physical body, (2) psychology, (3) spiritual, (4) emotion and (5) social (Ewles and Simnett 2003). These different dimensions are closely interrelated. The concept of spiritual health is consistently employed in the evaluation and measurement of the spirituality of individuals (Fisher, Francis, and Johnson 2000). Spiritual health is the integration of body, mind, and spirit contained by the environment of internal harmony and with regard to connections with others and with nature (Young 1984) and transcendence (Fisher 2000). In addition, spiritual health is regarded as a vital dimension to overall well-being.

Nonetheless, spiritual health and wellbeing are completely different from each other (Ellison 1983). In particular, spiritual wellbeing means the current state of spiritual health, which is similar to how the physical appearance, psyche and mood of people show the status of their health (Fehring, Brennan, and Keller 1987; Cottrell, Girvan, and McKenzie 1999; Fisher 2000). The results of these studies have revealed that people's quality of life and condition of spiritual health are evident through their spiritual wellbeing (Fehring, Brennan, and Keller 1987; Cottrell, Girvan, and McKenzie 1999). In terms of the spiritual aspect, spiritual wellbeing indicates individuals' value of life (Miller and Martin 1988), whereas spiritual health is possibly exhibited by pursuing the essence, objective and path of life (Kitko 2001; Insel and Roth 2006). Individuals express spirituality differently, which is substantially dependent on their ideologies, ideas, values and experiences (Kitko 2001).

Insel and Roth (2006) explained that the spiritual wellbeing of individuals can be revealed in his or her behaviours, thoughts and attitudes. If people have high spiritual wellbeing, then they can have high spiritual health and vice versa (Pong 2017). Thus, these people possibly possess a harmonious and consistent soul (that is inner self) and material reality (that is forces from the outside) (Kitko 2001; Pong 2018).

Spirituality has been confirmed to be an organised setting, in which individuals reside and express their worthy relations with their self (personal), other people (communal), nature (environment) and God (transcendent) (Fisher 1998). In 1998, Fisher also formulated Spiritual Health and Life-Orientation Measure (SHALOM). In the measure, the personal domain involves life's essence, objective and path; the communal domain comprises relationships and interactions amongst people; the environmental domain

discusses integrating humanity and the natural environment, in which integration involves responsibility and gratitude; the transcendental domain focuses on human–transcendent communication. Fisher (2013) indicated that in the modified SHALOM, a Supreme Being or a heavenly departed individual with the highest control can be considered the transcendent. Such a wide-ranging treatment embraces perspectives that range from believing in a Supreme Being to a lack of faith. The present research employs spirituality and spiritual wellbeing on the basis of the definition of Fisher (2013) but slightly adjusts the SHALOM model into three domains that are mostly suitable for the Chinese youth population in Hong Kong (Pong, Leung, and Lung 2019).

Contributions of holistic education in universities to the development of students' spiritual wellbeing

Holistic education combined with experiential learning is used to cultivate youngsters in all-round development, including virtue, intelligence, physical, solidarity, beauty and spirituality, which are the main focus of whole-person development (Hare 2006). Several studies in the past decades have affirmed the relationships between holistic education and the development of students' spirituality (Miller 1991; Miller et al. 2005). The process of experiential learning entails the development of students' intelligence, capabilities and morals from their actual experiences away from the customary scholastic environment (Kolb 2014). Experiential learning consists of varied endeavours, including community service learning, work-integrated learning, interdisciplinary study, overseas study experience and undergraduate research (Beard and Wilson 2002). Experiential learning is a considerably concrete and substantial experience of whole-person education (Hoover et al. 2010).

Hypothesised conceptual model

The spiritual wellbeing of students is evaluated using SHALOM, which Fisher developed in 1998 and modified in 2013. Figure 1 shows the hypothesised conceptual model of the current study. The proposed model suggests the process by which the spiritual wellbeing in specific domains of Chinese undergraduate students is nurtured under holistic education during their four years in universities. This framework satisfies the personal and communal, environmental and transcendental domains.

1. Service learning or community service learning

Service Learning or community service learning, which is a type of practical learning, is a method of delivering life or character education to students (Bingle and Hatcher 1996) because it nurtures the multiple connotations and self-cultivations of students. For example, students are cultivated gradually to develop active attitudes, positive thinking and core values from the processes of participation, commitment and reflections for charity and social contribution

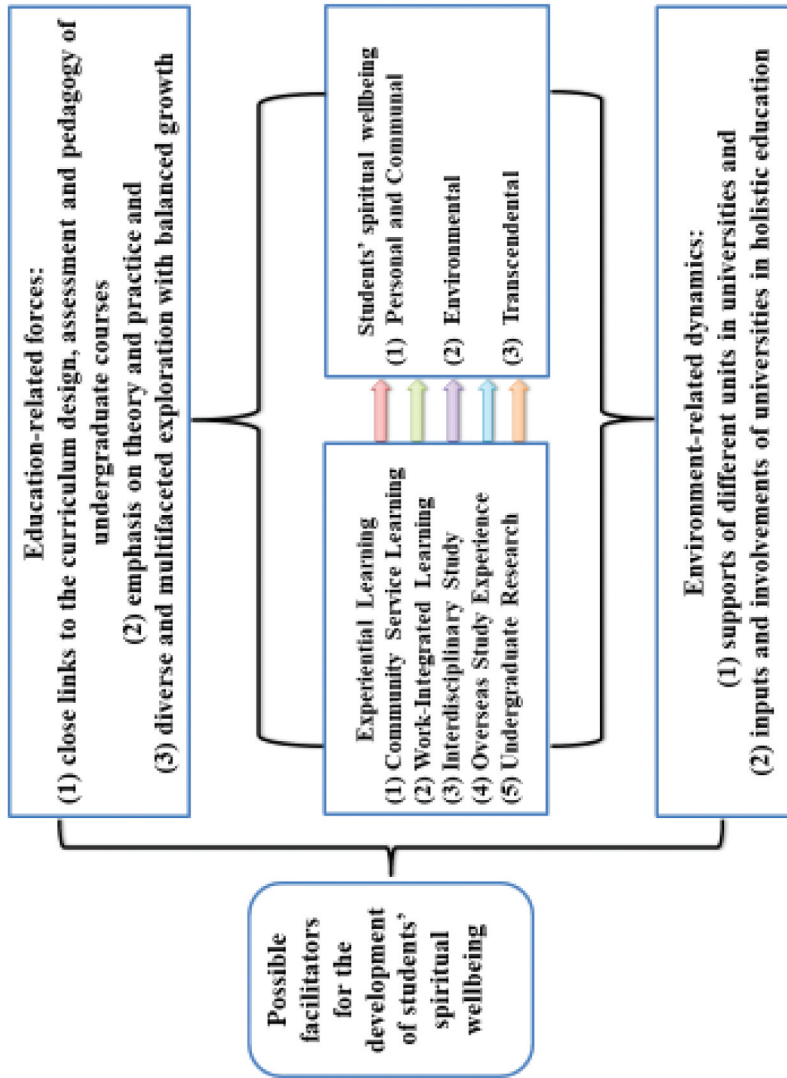


Figure 1. Conceptual model of the holistic education and development of undergraduate students' spiritual wellbeing.

(Einfeld and Collins 2008). Moreover, their cognition ability, psychological quality and moral awareness are well fostered (Einfeld and Collins 2008). Numerous studies have found that students who participated more in service-associated activities or community service learning, could have more positive growth in personality (King 2004; Liu and Lee 2011; Tonkin and Quiroga 2004), better professional development (Curtin et al. 2013; Walsh 2003), good interpersonal relationship (Anderson et al. 2011), higher spirit of serving people (Marsolek et al. 2012; Walsh 2003), good social citizenship (Clayton et al. 2010) and increased cultural awareness (Curtin et al. 2013).

2. Work-integrated learning

Work-integrated learning, such as placement and internship, combines and integrates lesson learning and its workplace application regardless of whether this integration occurs in the industry or whether it is real or simulated (Cooper, Orrell, and Bowden 2010). This learning is the instant interaction between (1) people and people and (2) people and the environment through an accumulation of experience, problem identification and problem resolution (Dewey 1986). Previous studies have found a close relationship between work-integrated learning and life experience, which is closely linked to the development of students' matureness and stability. For example, students can accumulate work experience (Kane, Healy, and Henson 1992) and develop invaluable cultivations, such as diligence, punctuality (Trede 2012), courtesy, responsibility and honesty (Jackson 2015). Moreover, participant students further understand and experience the meaning and value of working in society (Dudeck 2004), think about the balance between life and career (Jackson 2013), develop good attitudes towards the employer–employee relationship (Jackson 2015), build up the desired working environment (Smith 2012) and better civic education awareness (Garman 1995) through internships.

3. Interdisciplinary study

Interdisciplinary study enhances students' cross-disciplinary integration which is a type of cognitive ability (Repko, Navakas, and Fiscella 2007). It includes the (1) development of interdisciplinary knowledge, (2) techniques of multiple perspectives and (3) integration of conflicts from cross-disciplinary areas. Thus, students are nurtured to be more open-minded and tolerant of the self, others and the world. The results of some studies (e.g. Lattuca et al. 2017; Braßler 2016) have indicated that interdisciplinary study can enhance the attitudes and directions of students towards academic pursuits (in terms of academic achievements). These interdisciplinary studies will facilitate the understanding and learning of the abilities, characters, attitudes and thoughts of specialists in different fields, enabling them to work and solve problems together effectively in their future working environment with different professionals (Knight et al. 2013). The findings of the longitudinal study conducted by Newell, Doty, and Klein (1990) indicated that students taking interdisciplinary

study show higher lenience for ambiguity or paradox than do traditional students.

4. Overseas study experience

Jackson (2008) showed that the cross-cultural experience of studying overseas positively affects the self-awareness, self-efficacy and views of students regarding the cultures of different countries. Constructive impact is also evident on the development of their psychology and mind (Vygotsky 1980) because it further shapes students' personalities (Trapnell and Wiggins 1990) and develops their different outlooks (Bakalis and Joiner 2004) and perceptions (Lindsey 2005). Accordingly, they gradually adjust their values and worldview (Schmidt-Rinehart and Knight 2004). Students may be exposed to different living habits, lifestyles, customs, religions, social norms and academic cultures of overseas universities (Holoviak et al. 2011; Byram and Feng 2006). Although they may face cultural and lifestyle shocks, students' personal experiences have positive effects. For example, their self-confidence is improved (Lindsey 2005), their adaptability is strengthened (Anderson et al. 2006), communication skills and interpersonal relationships are enhanced (Martinsen et al. 2010) and the international competitiveness of domestic students is increased (Lewin 2009).

5. Undergraduate research

Undergraduate research is the embodiment of engaged learning (Zydney et al. 2002). Currently, research often involves cross- and multi-disciplinary fields. It cultivates undergraduate students' attitudes of lifelong learning and self-improvement (Ishiyama 2002). Undergraduate research has various advantages for university students (Boenninger and Hakim 1999; Spilich 1997), particularly in their personal development and growth (Madan and Teitge 2013). Research is a difficult and complicated job that requires perseverance (Johnson et al. 2015; Jacobi 1991), seriousness (Zydney et al. 2002), self-discipline, diligence (Boenninger and Hakim 1999) and prudence (Zydney et al. 2002).

Methods

Study design

This research used a mixed methodology of quantitative survey and qualitative study in a longitudinal (pre- and post-test) design to study the variations of students' spiritual wellbeing over time. Snowball and convenient sampling were also used for the quantitative and qualitative studies.

For the quantitative survey, the first wave (Time A1) of data collection was conducted from September to December 2013 in three government-subsidised universities (where holistic education is implemented), selected out of eight in total. With the help and supports of university teachers,

administers and programme leaders, a total of 307 out of 420 invited students finished the questionnaires, resulting in a response rate of 73.1%. The data included the participants' demographic information (that is gender, age and religious beliefs) and the status of their spiritual wellbeing measured in SHALOM.

After three years, a follow-up and second measurement of the 307 participants were carried out in the 2016–2017 academic year. This was the second wave (Time A2), which lasted from February to May 2017. Finally, a total of 276 participants' data was successfully traced and matched (age: mean = 19.42; S. D. = 0.75 at Time A1) across the two waves, indicating an acceptable attrition rate of 10.1% throughout four years. This attrition rate compared satisfactorily with those of other longitudinal studies (e.g. Dion et al., 2016; King et al., 2015; Scales et al., 2006). The results did not show significant differences between the matched sample ($n = 276$) and those of students who dropped out of the research ($n = 31$) after the first wave in gender, age, religious beliefs and status of spiritual wellbeing.

For the qualitative study, 32 Year 2 students with different backgrounds (e.g. gender, age and major disciplines) and had not participated previously in the aforementioned quantitative survey (that is SHALOM) were recruited to participate voluntarily in the individual in-depth interviews between September and December 2014 (Time B1). After two years, follow-up interviews were conducted with the 32 participants, who had then become Year 4 students. Thereafter, the students were invited to undergo individual in-depth interviews between February and May 2017 (Time B2). SHALOM was used as a basis for the design and development protocols of individual in-depth interviews.

The pre-test measurements, namely questionnaire surveys and individual in-depth interviews, at Times A1 and B1 could be used as meaningful bases and baseline scores for comparison between before and after being nurtured under holistic education in the universities. The post-test measurements at Times A2 and B2 provide evidence and tracks for the facets of their changes and growth in spiritual wellbeing.

Ethical considerations

Approval was granted in Sept 2013 from the Research Ethics Committee before the current study was conducted. Participation was voluntary and no reward was provided. The interviewees could withdraw at any time without punishment or prejudgement. All information and data obtained were kept anonymous and confidential. All participants were given a consent form with a questionnaire for the quantitative and a separate information sheet for qualitative studies respectively.

Data analysis

It is more suitable for the data in a mixed method research to be analysed separately initially to keep the characteristics of each, for example, the numbers for quantitative statistics and the word expression for qualitative information (Sandelowski 2000).

For the quantitative survey, the data of the first (Time A1) and second (Time A2) waves were analysed using IBM SPSS Statistics 26. Descriptive statistical analyses were utilised to describe the samples thoroughly. T-test and one-way ANOVA employed to explore whether the significant changes exist in spiritual wellbeing in the specific domains across participants' demographics in their year 1 (Time A1) and year 4 (Time A2). To diminish the risk of prejudice and a skewed consequence, only a complete dataset was adopted in the analysis (Son, Friedmann, and Thomas 2012). One-way repeated-measures ANOVA with time (Time 1 and Time 2) as the within-subject variable (Time effect) and other variables, such as the four academic disciplines as the between-subject variable (Discipline effect) was employed to evaluate whether the spiritual wellbeing of students evolved as a function of experiential learning activities under holistic education.

The qualitative studies at Time B1 and Time B2 – individual in-depth interviews were recorded and transcribed word for word. The resultant qualitative records were analysed using the five-step 'thematic analysis' process as detailed by Braun and Clarke (2006) producing themes and subthemes relevant to university students' spiritual wellbeing in the specific domains. First, the process of transcription make the author more familiar with the data. Second, the interview transcripts were repeatedly read and then supplementary notes about the original explanations were prepared. Third, the preliminary codes were generated, and then the data related to each code were organised in a systematic mode. Fourth, after the codes were systematised and prepared into categories and themes, they were presented to the research assistant to further check the logic of each code, category, and theme. Fifth, special and professional terminologies and more abstract ideas were utilised to describe, explain and generate the categories and themes. The thematic analysis was completed by the way of the construction of themes.

Table 1. Cronbach's alpha.

	Cronbach's alpha (α)	Cronbach's alpha (α)
	2013	2017
Personal and Communal domain	0.898	0.877
Environmental domain	0.839	0.839
Transcendental domain	0.924	0.924
Overall	0.929	0.914

Table 2. Three-factor exploratory factor analysis (EFA) of the SHALOM scale.

	Domains					
	Personal and Communal		Transcendental		Environmental	
	2013	2017	2013	2017	2013	2017
Q1: Love for others	0.817	0.773				
Q2: Personal relationship with the Divine/God			0.813	0.803		
Q3: Forgiveness towards others	0.46	0.47				
Q4: Connection with nature					0.806	0.777
Q5: Sense of identity	0.659	0.573				
Q6: Worship of the Creator			0.799	0.778		
Q7: Awe at a breathtaking view					0.554	0.64
Q8: Trust between individuals	0.642	0.601				
Q9: Self-awareness	0.634	0.591				
Q10: Oneness with nature					0.827	0.787
Q11: Oneness with God			0.854	0.862		
Q12: Harmony with the environment					0.721	0.677
Q13: Peace with God			0.829	0.816		
Q14: Joy in life	0.493	0.486	0.411	0.419		
Q15: Prayer in life			0.829	0.827		
Q16: Inner peace	0.502	0.529				
Q17: Respect for others	0.869	0.842				
Q18: Meaning in life	0.684	0.67				
Q19: Kindness towards other people						
Q20: Sense of 'magic' in the environment					0.646	0.627
Explanation of variance for each factor (%)	42.774	38.295	12.231	11.538	7.69	8.155
Cumulative variance (%)	42.774	38.295	55.004	49.833	62.694	57.988

N = 276. items that loaded on each factor are in boldface.

Measures

Part 1 – Quantitative survey: Questionnaire

The questionnaire has two sections, namely, (1) personal information and (2) status of their spiritual wellbeing, which were measured in the SHALOM developed by Gomez and Fisher (2003) and revised by Fisher (2013). SHALOM (2013) was used to evaluate the spiritual wellbeing of university students in specific areas. The 20-item questionnaire used a five-point Likert-type scale in the following aspects: (1) personal, (2) communal, (3) environmental and (4) transcendental. Each domain comprised five questions, with scores ranging from 5 ('very high') to 1 ('very low'). SHALOM, Cronbach's coefficient alpha and principal component analysis (PCA) were used to assess the reliability and validity of the research instrument.

Table 1 shows that the three domains in the 2013 and 2017 data for students in Years 1 and 4, respectively, are over 0.7 in terms of alpha value, thereby surpassing the critical watershed value of 0.7 (Bar-On 2002). The scores in 2013 and 2017 are substantially dependable owing to the statistical accuracy of the 20 items' (variables), particularly given that the Cronbach's alpha are 0.929 and 0.914, respectively. PCA using SPSS Version 26 is adopted to analyse the data.

The Kaiser–Meyer–Okin values were 0.909 and 0.899 in 2013 and 2017, respectively, thereby surpassing the suggested minimum value of 0.6 (Kaiser 1970, 1974). Bartlett's test of sphericity (Bartlett 1954) was likewise statistically

significant (χ^2 (190, $N= 276$) = 3591.062, $p < 0.001$) in 2013 and (χ^2 (190, $N= 267$) = 2824.854, $p < 0.001$) in 2017, thereby reinforcing the correlation matrix factorability. The eigenvalues of the three aspects in 2013 and 2017 also exceeded 1.0 and respectively explain 42.774, 12.231 and 7.690% in 2013 and 38.295, 11.538 and 8.155% in 2017 of the variance as shown in [Table 2](#). Exploratory Factor Analysis (EFA) with principal component extraction method and varimax rotation was employed. [Table 2](#) shows that the three domains are (1) combined personal and communal factors, (2) environmental and (3) transcendental aspects. This result is consistent with the results of Pong (2017), Pong, Leung, and Lung (2019) and Yuen (2015). Close associations were determined between the personal and communal aspects in traditional Chinese culture. Evidently, the aspects of individuality and community are definitely related to each other (Hofstede 2001). Thus, the model of the three domains was used for the following discussions.

Part 2 – Qualitative studies: Individual in-depth interviews

The first (B1) and second time (B2): with the help and supports of university teachers, administrators and programme leaders, the appropriate participants were invited to join the individual in-depth interviews conducted at Times B1 and B2. The purpose was to carry out a detailed comparison and comprehensive analysis based on the first and second individual in-depth interviews for the growth and development of the participants' spiritual wellbeing during their four years in their universities. In-depth interviews used were a relatively appropriate technique for assessing subjective experiences (Nielsen and Kaszniak 2007). The participants were instructed to remember their particular experiences. They were likewise asked questions on the related changes and ways. Fisher's (2013) SHALOM was used as basis of the questions for the individual in-depth interviews.

The author formulated semi-structured interview questions in the specific domains after conducting a literature review and supplementing it with the outcomes of prior research (Pong 2017, 2018; Pong, Leung, and Lung 2019). Instead of structured questions, semi-structured questions were provided because the main objective of the current study was to investigate the positive experiences that the participants remembered and related. The intention of providing the questions was to prompt the participants to recall their positive answers to various learning circumstances, conditions and proceedings, including internship, overseas exchange study, service learning and interdisciplinary studies. For example, the participants were asked the following questions in the personal domain: 'Do you think your university education has any impact on your personal growth and pursuit of ideals?' and 'Can you please share your experience about your campus life and study in the university and the development of your spiritual wellbeing?' Each individual in-depth interview lasted

Table 3. Descriptive statistics: participants' demographics and their spiritual wellbeing in the longitudinal study.

Factors	N (%)	Spiritual well-being (personal and communal)	Spiritual well-being (environmental)	Spiritual wellbeing (transcendental)
Year 1 (Age)				
(1) 18	4 (1.4%)	3.83 (0.32)	3.00 (0.78)	1.90 (1.01)
(2) 19	179 (64.9%)	3.47 (0.53)	3.02 (0.65)	2.74 (0.76)
(3) 20	74 (26.8%)	3.51 (0.61)	2.98 (0.61)	2.83 (0.89)
(4) 21	14 (5.1%)	3.57 (0.64)	2.76 (0.74)	2.57 (0.95)
(5) 22	3 (1.1%)	3.00 (0.61)	2.40 (0.00)	2.20 (1.06)
(6) 23	1 (0.4%)	3.90 (N.A.)	3.40 (N.A.)	3.00 (N.A.)
(7) 24	1(0.4%)	3.50 (N.A.)	3.90 (N.A.)	3.00 (N.A.)
Year 4 (Age)				
(1) 21	4 (1.4%)	3.93 (0.26)	3.20 (0.52)	2.10 (0.81)
(2) 22	179 (64.9%)	3.55 (0.47)	3.14 (0.55)	2.79 (0.69)
(3) 23	74 (26.8%)	3.59 (0.54)	3.09 (0.50)	2.88 (0.82)
(4) 24	14 (5.1%)	3.66 (0.56)	2.96 (0.46)	2.66 (0.87)
(5) 24	3 (1.1%)	3.20 (0.35)	2.87 (0.42)	2.33 (0.92)
(6) 25	1 (0.4%)	3.90 (N.A.)	3.40 (N.A.)	3.00 (N.A.)
(6) 26	1(0.4%)	3.70 (N.A.)	3.00 (N.A.)	3.00 (N.A.)
(7) 27				
Year 1 (Gender)				
(1) Male	110 (39.9%)	3.46 (0.53)	3.03 (0.65)	2.72 (0.78)
(1) Male	166 (60.1%)	3.51 (0.57)	2.96 (0.64)	2.75 (0.84)
(2) Female	110 (39.9%)	3.54 (0.47)	3.15 (0.53)	2.78 (0.71)
Year 4 (Gender)				
(1) Male	166 (60.1%)	3.59 (0.51)	3.09 (0.52)	2.81 (0.77)
(2) Female				
Year 1 (Religious affiliation)				
(1) None	216 (78.3%)	3.38 (0.52)	2.92 (0.64)	2.49 (0.67)
(1) None	46 (16.7%)	3.90 (0.51)	3.28 (0.56)	3.73 (0.58)
(2) Christian	8 (2.9%)	3.79 (0.48)	3.20 (0.82)	3.63 (0.94)
(3) Catholic	3 (1.1%)	4.07 (0.38)	2.80 (0.92)	2.67 (0.12)
(4) Buddhist	3 (1.1%)	3.60 (0.70)	3.20 (0.35)	2.73 (0.70)
(5) Taoist	216 (78.3%)	3.48 (0.45)	3.06 (0.51)	2.57 (0.58)
Year 4 (Religious affiliation)				
(1) None	46 (16.7%)	3.93 (0.48)	3.33 (0.52)	3.73 (0.58)
(1) None	8 (2.9%)	3.83 (0.49)	3.35 (0.74)	3.68 (0.81)
(2) Christian	3 (1.1%)	4.07 (0.38)	3.07 (0.50)	2.80 (0.20)
(3) Catholic	3 (1.1%)	3.63 (0.70)	3.33 (0.12)	2.80 (0.72)
(4) Buddhist				
(5) Taoist				
Year 1 (Academic disciplines)				
(1) Arts and humanities (A&H)	69 (25%)	3.38 (0.51)	3.08 (0.59)	2.74 (0.82)
(1) Arts and humanities (A&H)	70 (25.4%)	3.47 (0.53)	3.09 (0.62)	2.68 (0.80)
(2) Business (Bus.)	67 (24.3%)	3.40 (0.51)	3.08 (0.57)	2.71 (0.63)
(3) Science (Sci.)	70 (25.4%)	3.70 (0.61)	2.71 (0.71)	2.82 (0.98)
(4) Social science (S.S.)	69 (25%)	3.49 (0.43)	3.20 (0.46)	2.81 (0.76)
(4) Social science (S.S.)	70 (25.4%)	3.55 (0.45)	3.25 (0.45)	2.74 (0.72)
Year 4 (Academic disciplines)				
(1) Arts and humanities (A&H)	67 (24.3%)	3.47 (0.47)	3.16 (0.49)	2.76 (0.56)
(1) Arts and humanities (A&H)	70 (25.4%)	3.77 (0.55)	2.85 (0.60)	2.88 (0.90)
(2) Business (Bus.)				
(3) Science (Sci.)				
(4) Social science (S.S.)				
Year 1 (University)				
(1) University A (Uni.A)	78 (28.3%)	3.72 (0.53)	3.09(0.76)	2.67 (0.94)
(1) University A (Uni.A)	117 (42.4%)	3.31 (0.50)	2.89 (0.54)	2.74 (0.71)
(2) University B (Uni.B)	81 (29.3%)	3.52 (0.58)	3.03 (0.64)	2.79 (0.83)
(3) University C (Uni.C)	78 (28.3%)	3.79 (0.48)	3.24 (0.59)	2.75 (0.84)
Year 4 (University)				
(1) University A (Uni.A)	117 (42.4%)	3.40 (0.44)	2.99 (0.45)	2.79 (0.65)
(1) University A (Uni.A)	81 (29.3%)	3.61 (0.49)	3.17 (0.53)	2.84 (0.78)
(2) University B (Uni.B)				
(3) University C (Uni.C)				
Years of samples collected in				
1. 2013: Year 1 students	276 (100%)	3.49 (0.55)	2.99 (0.64)	2.74 (0.82)
2. 2017: Year 4 students	276 (100%)	3.57 (0.49)	3.11 (0.53)	2.80 (0.74)

approximately 90 minutes. The participants' responses in the interviews would also be a basis for the comparative analysis in the next stage.

To conduct further analysis, the interviews were audio recorded and transcribed into full transcripts three months within the conduct of every interview. A research assistant cross-checked the transcripts and verified the content by sending the original transcripts to the respondents through email attachment. The research assistant also invited them to specify the possible aspects they required to 'add, change or clarify'. Every participant sent emails indicating that changes were no longer needed. Next, these transcripts were divided into two parts and coded based on the framework and theme analysis. The framework with themes was also finally generated. During the process of coding work, meetings were regularly conducted with experienced researchers with rich experience in the qualitative study and data analyses to maintain coding accuracy and consistency. Lastly, the codes of all two years were combined, and a complete coding structure of the research was generated. The transcripts were studied, evaluated and modified and then organised, clustered, selected, processed and assessed on the basis of the personal and communal, environmental and transcendental domains.

Findings

The findings have two parts, namely, quantitative and qualitative. The quantitative analysis section mainly discusses whether the spiritual wellbeing of Chinese undergraduate students is nurtured in universities. The qualitative analysis section focuses on the verification of the quantitative findings and further explores the possible facilitators for the changes and growth of students' spiritual wellbeing during their years of studying in universities.

Quantitative findings and analysis

Table 3 shows the descriptive statistics from the quantitative surveys. Table 4 shows the results of T-tests and one-way ANOVA with the post-hoc analysis using the LSD test. Results shown in Table 4 revealed no significant differences in spiritual wellbeing in the specific domains across participants' ages and gender in their year 1 and year 4. However, across religious affiliations, one-way ANOVA showed a significant difference in the spiritual wellbeing in specific domains, including (1) personal and communal, (2) environmental and (3) transcendental domain in both their year 1 (Time A1) and year 4 (time A2).

One-way ANOVA found a significant difference in spiritual wellbeing in the personal and communal in both year 1 [$F(3, 272) = 5.095; p < 0.01$] and year 4 [$F(3, 272) = 5.598; p < 0.01$] as well as the environmental domain in both year 1 [F

Table 4. Results of T-tests and one-way ANOVA for the changes in spiritual wellbeing in the specific domains across participants' demographics in their year 1 (time A1) and year 4 (time A2).

Factors	Spiritual wellbeing (personal and communal)	Spiritual wellbeing (environmental)	Spiritual wellbeing (transcendental)
Year 1 (Age)	$F(6, 269) = 0.824$	$F(6, 269) = 0.846$	$F(6, 269) = 1.214$
Year 4 (Age)	$F(6, 269) = 0.864$	$F(6, 269) = 0.486$	$F(6, 269) = 1.056$
Year 1 (Gender)	$t = -0.781$	$t = 0.817$	$t = -0.293$
Year 4 (Gender)	$t = -0.870$	$t = 0.908$	$t = -0.376$
Year 1 (Religious affiliation)	$F(4, 271) = 11.523^{***}$ Christian > None; Catholic > None;	$F(4, 271) = 3.458^{**}$ Christian > None	$F(4, 271) = 36.811^{***}$ Christian > None; Christian > Buddhist;
Year 4 (Religious affiliation)	$F(4, 271) = 11.018^{***}$ Buddhist > None Christian.>None; Catholic.>None; Buddhist.>None	$F(4, 271) = 3.125^{*}$ Christian > None	Christian > Taoist Catholic > None; Catholic > Buddhist; Catholic > Taoist $F(4, 271) = 41.465^{***}$ Christian > None; Christian > Buddhist Christian > Taoist Catholic > None; Catholic > Buddhist Catholic > Taoist
Academic major disciplines	$F(3, 272) = 5.095^{**}$ S.S. >A&H; S.S. > Bus; S. S. >Sci.	$F(3, 272) = 6.136^{***}$ S.S. < A&H; S.S. < Bus; S. S. <Sci.	$F(3, 272) = 0.765$ $F(3, 272) = 0.703$
Year 1	$F(3, 272) = 5.598^{**}$ S.S. >A&H; S.S. > Bus; S. S. >Sci.	$F(3, 272) = 8.954^{***}$ S.S. < A&H; S.S. < Bus; S. S. <Sci.	
Year 4	$F(2, 273) = 14.118^{***}$ Uni.A > Uni.B > Uni.C	$F(2, 273) = 2.815$ $F(2, 273) = 5.981^{**}$ Uni.A > Uni.C; Uni.B > Uni.C	$F(2, 273) = 0.418$ $F(2, 273) = 0.278$
University	$F(2, 273) = 14.118^{***}$ Uni.A > Uni.B > Uni.C	$F(2, 273) = 2.815$ $F(2, 273) = 5.981^{**}$ Uni.A > Uni.C; Uni.B > Uni.C	$F(2, 273) = 0.418$ $F(2, 273) = 0.278$
Year 1	$F(2, 273) = 16.990^{***}$ Uni.A > Uni.B > Uni.C	$F(2, 273) = 16.990^{***}$ Uni.A > Uni.B > Uni.C	
Year 4	$F(2, 273) = 16.990^{***}$ Uni.A > Uni.B > Uni.C	$F(2, 273) = 16.990^{***}$ Uni.A > Uni.B > Uni.C	
Years of samples collected in	$t = -9.846^{***}$ 3.49 (0.55)	$t = -9.020^{***}$ 2.99 (0.64)	$t = -7.302^{***}$ 2.74 (0.82)
1. 2013: Year 1 students	3.57 (0.49)	3.11 (0.53)	2.80 (0.74)
2. : Year 4 students	Year 4 > Year 1	Year 4 > Year 1	Year 4 > Year 1

Note: *** $p < .001$; ** $p < 0.01$; * $p < 0.05$

Table 5. Interaction effects between time and other variables in the undergraduate students' spiritual wellbeing in the three specific domains.

Spiritual wellbeing: Specific domains	Time X Discipline	Time X Gender	Time X Age
Personal and Communal	$F(2, 272) = 1.653$, $p > 0.05$	$F(2, 274) = 0.014$, $p > 0.05$	$F(2, 274) = 1.875$, $p > 0.05$
Environmental	$F(2, 272) = 1.153$, $p > 0.05$	$F(2, 274) = 0.043$, $p > 0.05$	$F(2, 274) = 0.035$, $p > 0.05$
Transcendental	$F(2, 272) = 0.315$, $p > 0.05$	$F(2, 274) = 0.093$, $p > 0.05$	$F(2, 274) = 0.005$, $p > 0.05$

(3, 272) = 6.136; $p < 0.001$] and year 4 [$F(3, 272) = 8.954$; $p < 0.001$] for academic major disciplines. One-way ANOVA likewise showed a significant difference in spiritual wellbeing in the personal and communal domain in both year 1 [$F(2, 273) = 14.118$; $p < 0.001$] and year 4 [$F(2, 273) = 16.990$; $p < 0.001$] across universities. Moreover, one-way ANOVA revealed a significant difference in the

Table 6. Summary of the participants for the individual in-depth interviews in the interviews conducted in 2013 and 2017.

Universities	Number of students	Percentage (%)
A	11	34.4
B	13	40.6
C	8	25
Total	32	100
Major Disciplines	Number of students	Percentage (%)
Social Science	8	25
Business	8	25
Arts and Humanities	8	25
Science and Technology	8	25
Total	32	100
Gender	Number of students	Percentage (%)
Male	15	46.9
Female	17	53.1
Total	32	100
Age	Number of students	Percentage (%)
19 year (in 2013; year 1)	5	15.6
20 years (in 2013; year 1)	14	43.8
21 years (in 2013; year 1)	11	34.4
22 years (in 2013; year 1)	2	6.2
Total	32	100
Religious Beliefs	Number of students	Percentage (%)
Christianity	6	18.8
Catholicism	3	9.3
Buddhism	5	15.6
Taoism	3	9.4
No religious beliefs	15	46.9
Total	32	100

spiritual wellbeing in the environmental domain in year 4 [$F(2, 273) = 5.981$; $p < 0.01$] only.

Development of Chinese university students' spiritual wellbeing

The outcomes for the first research question on the development of the spiritual wellbeing of students indicate that the time effect was significant in all three specific domains: (1) personal and communal ($t = -9.846$; $p < 0.001$), (2) environmental ($t = -9.020$; $p < 0.001$) and (3) transcendental ($t = -7.302$; $p < 0.001$) as shown in Table 4.

In evaluating whether the spiritual wellbeing of students evolved as a function of experiential learning activities (e.g. university life, including community service learning, work-integrated learning, interdisciplinary studies and overseas study) under holistic education, one-way repeated-measures ANOVA were conducted with time (Time 1 and Time 2) as the within-subject variable (Time effect) and other variables, such as the four academic disciplines as the between-subject variable (Discipline effect).

When the impact of other variables (including academic disciplines, gender, age and university) on the development of students' spiritual wellbeing was explored, the outcomes of the one-way repeated-measures ANOVA indicated

no significant interaction effect between Time and these variables (including disciplines, gender and age) ($p > 0.05$) in all three specific domains of their spiritual wellbeing shown in Table 5. However, Year 4 students reported their spiritual wellbeing in the three specific domains to be significantly higher than their first-year results. This finding indicated that the students, regardless of their academic major disciplines, gender and age, considered themselves to have developed in all specific domains of spiritual wellbeing during their four years of study under holistic education.

Qualitative findings and analysis

Table 6 shows a summary of the students' participation in the interviews conducted in 2014 and 2017. The qualitative findings verified the quantitative outcomes of this study whether Chinese undergraduate students could be spiritually nurtured in holistic education. The majority of the interviewed students tended to exhibit clear goals in life and strong self-affirmation. They matured and developed independence and displayed their considerable concern, respect, love and mercy towards others and the nature compared with their performance three years ago. Most of the participants with religious beliefs were found to be more faithful and passionate about their own beliefs and the participants without religious beliefs, who expressed in a way of spirit, attitude or thought, were also found to be interested in exploring or thinking more in this regard compared with three years ago. They said that their four years of study in universities and campus life 'helped me understand myself more', 'taught me about acceptance of others', 'understand that natural disasters, such as earthquakes, floods and tsunamis, could be minimised by human beings', and 'Good and evil must at last have their reward'.

From the qualitative data analysis, five themes were identified: (1) 'close links to the curriculum design, assessment and pedagogy of undergraduate courses', (2) 'emphasis on theory and practice', (3) 'diverse and multifaceted exploration with balanced growth', (4) supports from different units in universities and (5) inputs and involvements of universities in holistic education. These five themes could be classified into two categories: (1) education – related forces (the former three) (2) environment related dynamics (the latter two). The five themes were complementary to the quantitative results and also the keys for the successful implementation of holistic education through experiential learning in universities.

The qualitative findings also indicated what and how holistic education, conducted through experiential learning, including (1) community service learning, (2) work-integrated learning, (3) interdisciplinary studies, (4) overseas study experiences and (5) undergraduate research substantially contributes to the

development of young Chinese university students' spiritual wellbeing in specific domains during their four years of study.

(1) Close links to the curriculum design, assessment and pedagogy of undergraduate courses

Participants expressed that the experiential learning activities were closely and well connected to the curriculum design, assessment, and pedagogy of their studies. Participants showed their willingness and enthusiasm to join the different community services because of the support and encouragement of universities, for example through the Student Affairs Office.

Emily (Year 2) said:

During one of my visits (parts of assignments) to a poor farming family in an impoverished place, a 70-year-old grandmother independently took care of her five-year-old grandson because his parents left him. The elderly had to farm every day and take care of her grandson. On the one hand, she is regarded as extremely poor and sad. On the other hand, the elderly is a great and strong person.

The respondent learned mutual appreciation and respect during her community service learning. She understood that feeling over-sympathetic and having a subjective bias towards others and matters were unnecessary. The respondent went to help others, but she felt that she has benefited more from this experience than the people they helped.

After two years (Year 4), Emily said:

I am happy to receive the 'Volunteer Award' in my university because I could really apply what we have learned to good use. Moreover, I could see people's smiles in my works in the community (parts of her course assessments).

This reflects her gradual growth in spirituality. She felt joyful and satisfied in her efforts and contributions recognised in the series of meaningful tasks (parts of the curriculum designs) organised through close partnerships between the university and the communities.

Participants perceived that they enriched their knowledge and life experience under the innovative pedagogies of holistic education.

Jacob (Year 2) shared:

'I chose business because I hope I can find a shortcut to accumulate my wealth quickly'

However, He seems to be changed considerably and he (Year 4) said:

We are given many opportunities to learn soft skills, including communication skills, mutual understanding and commitments to others in internships, company visits and field trips. I learned that a successful business is established on trust and built through

cooperation. We (business students) are often reminded in the business case studies: "honest" and "reliable" are critical factors of a successful career in businesses.

His attitude and focus on money and life have been immensely changed. He believed he found the meaning and significance of studying and doing business. He developed knowledge and skills and acquired core values, principles and ethics. Moreover, he understood that cooperation, which requires mutual understanding and trust, is critical to successful businesses. He gradually developed these qualities through the combination of various and diversified learning activities in his studies.

(2) 'Emphasis on theory and practice'

Participants appreciated the balance of theory and practice promoted in holistic education. They felt that they were not only equipped broadly in knowledge under the cultivation of interdisciplinary studies, including general education and liberal studies but also were given more realistic opportunities to apply and integrate the knowledge in different work-integrated learning activities. Peggy said:

University doesn't only train us to think from personal factors, but also takes into consideration other variables. An increasing number of interdisciplinary modules, such as sustainability, global studies and geography and resource management were offered. I was also arranged in a utility corporation - China & Light Power (CPL) for my internship and I had a visit to the renewable energy company – the plant of BYD Co., Ltd (Electric car).

It reflects that the participants' horizons were broadened due to the nurture of interdisciplinary modules, the practical experience was also gradually accumulated through the different work-integrated learning.

Susan said with a smile:

'Looking back these four years of my study, I surely feel very fulfilling and meaningful although I was constantly busy and occupied by placements, visits (as a volunteer) and my assignments. But I can apply what I have learnt to good use to contribute to the community and help numerous people in need'.

Her skills and abilities in knowledge application have been greatly improved, and her critical thinking skills have been well trained. She also discovered her happiness, satisfaction and achievement in the learning process, including the integration of theory and practice and the arrangement of experiential learning.

Participants realised that both theory-driven and research-driven methods were emphasised in holistic education. Participants recognised that the interactive pedagogies were utilised in the theory-driven approaches, for example, Amelia (in her second year) said:

'We were always asked to present, discuss and debate in the lessons for these controversial topics, such as legalisation of homosexuality, abortion, euthanasia and human cloning.

Our teachers often encourage and guide us to think of the questions from different perspectives.

The continuous progression in spiritual wellbeing was found in the participants, also the real work practices were employed in the research-driven methods. Hanley (Year 2) said:

Science helps me explore nature, analyse the universe and understand the world (theoretically)

After two years (Year 4), he said as follows:

There is a deep change in my understanding of nature, the earth and the universe through a series of the experiments in laboratories, field trips and final year project (undergraduate research). Currently, I would study nature, earth and the universe from the whole system — the ecosystem rather than a piece of isolated item.

It reflected that the interviewees' understanding and attitude towards knowledge pursuit have been greatly improved during the training of experiential learning (including experiments, field trips and undergraduate research)

(3) 'Diverse and multifaceted exploration with balanced growth'

Participants felt being well nurtured by holistic education for their diversified development, deeper exploration and balanced growth. Participants were impressed by the many different types of experiential learning activities provided. Tony said:

We were offered more options in general education, including the areas of music, sports and arts. I like sports and music concurrently, so I feel very joyful to have the chance to choose sports-related and music-related as my general education subjects during my 4 years.

University students were broadened in the scope of pursuing knowledge and wisdom in general education. Participants believed this could help them develop the attitude of lifelong learning.

Participants agreed that overseas exchange studies in the series of experiential learning offered all-around and deeper learning. Participants felt that they were given more opportunities in these overseas exchange experiences that were valuable and useful to the growth in life and values.

I could experience and feel the cultures, traditions and histories of different countries (through overseas exchange study). It really widened my views of world. A proverb says: "It is better to travel far than to read voluminously", but I think both are equally important!

Participants felt being trained not only professional identity formation and professionalism but also being nurtured to be more considerate and responsible citizens. Susan said:

During these four years, I was assigned to different types of organizations for my placements (work-integrated learning), including non-governmental organizations, government departments and business companies. I feel I am more mature and serious to work than before. Also, I learned how to communicate and treat different people in different situations. These different exposures really colored my life.

These findings reflected that the spiritual wellbeing of participants has been multidimensionally enhanced in holistic education through experiential learning.

(4) Supports from different units in universities

Participants felt that the supports and helps of different units in universities contributed to holistic education. These supports and coordination of different units are largely attributed to the institution-level supporting plan or schedule. Chloe said:

I regularly receive updated and useful information through email for the activities of community service and internships from the office of Student Affairs and from the Office of Service-Learning respectively. I would also join some of their workshops and seminars, such as recruitment talks and mentorship programmes.

Mia shared:

I really thank the help of the office of academic links not only for the help in my application and arrangement but also in my financial aids and scholarship for my overseas exchange studies. These financial supports were critical to students from a poor family, like me.

Charlotte said:

I find the office of general university requirements very helpful because I am notified regularly about the updated and detailed information for my general education. I never think I can study "Appreciation of Music Cultures" and "Theatre Acting" as my general education choices and I was also impressed with the innovative pedagogies and diverse curriculum.

Participants agreed that they could be easily devoted to holistic education with the support and help of different units in universities.

(5) Inputs and involvement of universities in holistic education

Participants realised that their spiritual development and growth would be different because each school has different resources, inputs and focus on students. Tony said:

Fortunately, the school has rich resources (including hard and soft equipment) and different choices (from the lists of General education modules and internships) that allow me to have different learning experiences and exposures.

Conversely, Susan shared:

I really want to have experience in overseas exchanges, but the competition is fierce. This opportunity does not belong to me.

Apple said:

I can choose from a list of general education and work-integrated learning, but their choices are few and narrow.

Participants expressed that inadequate inputs would limit their development, while rich resources and sufficient supports are critical keys for their development of spirituality. The responses reflected that there is a close and direct relationship between inputs and involvements of universities on these experiential learning and the development of students' spirituality.

Discussion

The quantitative findings of this longitudinal study showed that significant differences and changes exist in the spiritual wellbeing of young Chinese university students in the periods between initial admission and near graduation, regardless of major disciplines, gender and age. Additionally, the qualitative findings verified the preceding quantitative outcomes. Significant growth in students' spiritual wellbeing of students in specific domains were found during their near graduation. The longitudinal qualitative findings further indicated holistic education through experiential learning substantially contributed to the development of young Chinese university students' spiritual wellbeing in specific domains.

The qualitative findings further indicated that (1) environment-related forces and (2) education-related dynamics were critical factors for the successful implementation of holistic education through experiential learning in universities.

For the environment-related dynamics, (1) supports of different units in universities and (2) inputs and involvements of universities in holistic education were found as the key elements for the successful implementation of experiential learning in universities. Firstly, the different progress and development levels of university students' spiritual wellbeing were found to be highly associated with the various combinations, arrangements and methods of experiential learning in four-year undergraduate courses. Their success and effectiveness highly depended to a large extent on the institutional-level support plans to support and coordinate the works of different departments in universities. Moreover, the inputs and involvements of universities in holistic education

were found to influence resource allocations, including teacher training and course development. These results are consistent with the discoveries of Hickcox (2002) and Kolb and Kolb (2006).

This study discovered that holistic education conducted in experiential learning, which contributed to the development of students' spiritual wellbeing, resulted from the following arrangements (education-related dynamics):

(1) close links to the curriculum design, assessment and pedagogy of undergraduate courses;

(2) emphasis on theory and practice and

(3) diverse and multifaceted exploration with balanced growth.

These findings were likewise used to explain the fundamental mechanism that enables this link, especially how an all-encompassing education may function in Chinese societies.

Close links to curriculum design, assessment and pedagogy of undergraduate courses

The findings of this study revealed that the cooperation and support of various faculties, departments and units of universities are needed for holistic education. These are supported by the results of Shek (2010), who indicated that the Student Affairs Office, which is composed of psychologists, social workers and counsellors, was established in Hong Kong universities with the mission to promote the holistic developments of university students. Successful institutionalisation of experiential learning, including community service learning in universities, needs the support and involvement of different stakeholders (Ma and Chan 2013); for example, innovative partnerships between universities and the communities were set up for the needs of communities (Bringle and Hatcher 1996). Additionally, the findings of the current study are consistent with the results of previous work which specified experiential learning, such as service learning (Chan and Ma, 2006), work-integrated learning (Tanaka and Carlson 2012) and general education (Shek and Yu 2017), have been integrated closely with the curriculum design, assessment and pedagogy of four-year undergraduate courses to promote the holistic development of students.

Numerous studies showed that the close links between service learning and university curriculum, including the objectives and assessment, contributed to the development of stronger student academic commitment and performance outcomes (Billig, Root, and Jesse 2005), greater improvement in problem-solving skills (Conrad and Hedin 1982) and better-quality learning and fulfilment with their studying (Hamilton and Zeldin 1987). Melchior and Bailis (2002) and Meyer (2006) demonstrated that students' commitment in service learning was a strong predictor of self-confidence, self-discipline, social responsibility and pursuit of excellence in their studies. However, the findings were not consistently supported by the results of other research (Astin et al. 2006; Billig, Root,

and Jesse 2005; Eyler et al. 2001), which failed to find significant effects in each of the abovementioned areas.

The most essential keys depend on how to utilise the pedagogies of experiential learning. They include student-centred learning (Kember 2009; Lindblom-Ylänne et al. 2006), project-based learning (Helle, Tynjälä, and Olkinuora 2006; Major and Palmer 2001) and cooperative learning (Johnson and Johnson 2009). Also, role-play and personal involvement through reflection, integration and application of what they learned into reality, and more flexible and diverse curriculum design with a learner-centred focus were employed (Stiernborg, Zaldivar, and Santiago 1996). Kolb and Kolb (2006) emphasised its success and effectiveness highly depended on the abilities, involvement and passion of the teacher.

Equal emphasis on theory and practice

This study found that an increasing number of elements of personal and social matters, such as the meaning of life, social responsibility, environmental harmony and ethical issues, had been included in the course contents and curriculum design to theoretically cultivate and equip students well in terms of knowledge, values, beliefs and ethics. Ma and Chan (2013) also indicated that an independent unit, such as the Office of Service Learning, was set up in universities in Hong Kong to coordinate with other academic faculties and different units to provide realistic opportunities for students to apply and integrate the knowledge.

Crosby (2007) contended that one of the major tasks of university education is to cultivate the ethical and spiritual attitudes of students, help them understand more about their inner lives and develop holistic visions of life through liberal studies. Larson (2000) and Schuetz (2008) respectively indicated that theory-driven and research-driven learning, such as interdisciplinary learning/general education contribute to the overall development of adolescents, including personal virtues, civic responsibilities and interpersonal relationships. The findings of these previous studies (Larson 2000; Schuetz 2008) were consistent with the results of the current research, which specified that in the training of interdisciplinary studies, including liberal arts or general education, the majority of the interviewed students' character traits (e.g. gentleness, politeness, elegance and refinement) and some of their social and communication skills (e.g. kindness, sophistication and sociable) were found to be considerably nurtured.

This research also found that the majority of the interviewed students agreed that they benefited substantially from their experiences in studying overseas compared with merely book learning. They were supported by the findings of Yang, Webster, and Prosser (2011), who studied 214 undergraduates with study abroad experience in Hong Kong and found improvements and growth in the

personal, intercultural and disciplinary/career competencies of students with study abroad experience.

Moreover, the results showed that undergraduate research leads to a thorough review and profound reflection for undergraduate students' quest of knowledge. The interviewed students agreed that undergraduate research could help them integrate and consolidate concretely and practically what they learnt in four years. The results of this study are consistent with those of Noddings (2018) that the greatest function of education is to enable people to generally meet the challenges of life. Young people were also observed to be inspired to learn and practice core values, morality and principles through the different environments and scenarios. This result is relatively similar with the analysis of Martin (2002), who proposed that holistic education is different from other forms of education and emphasises experiential learning and fulfilling its meaning.

Diverse and multifaceted exploration with balanced growth

The findings indicated that the university students could be well nurtured in comprehensive development, including virtue, intelligence, physical, solidarity, beauty and spirituality through the combination of 'holistic education' and 'experiential learning'. The integration of the undergraduate students' body, mind and spirit (soul) was highly emphasised as well.

General education/liberal studies (Shek et al. 2019), work-integrated learning (Tanaka and Carlson 2012) and service learning (Chan and Ngai 2014), all of which were mandatory requirements for full-time undergraduate students in Hong Kong, could facilitate the all-round development of students. The findings of these previous studies were consistent with the results of the current research. For example, the longitudinal study of Shek et al. (2019) found that general education courses greatly contributed to the holistic development of students in (1) attributes including effective communication, professional competence, critical thinking, innovative problem solving, lifelong learning and ethical leadership; (2) pursuits of knowledge and wisdom; and (3) emphasis on mental health.

Trede (2012) likewise found that work-integrated learning, professional identity formation and professionalism embedded throughout a course curriculum with more real-work opportunities well nurtured students to be more critical, considerate, responsible citizens and lifelong learners.

The findings of the previous studies indicated that interactive, innovative and collaborative pedagogies, including in general education or liberal arts education, community service learning and capstone courses, have a constructive impact on the growth and progress of students, who then gain ideal learning outcomes (Kilgo, Sheets, and Pascarella 2015; Schneider 2008; Shek 2019). These active and innovative learning strategies include group-based learning with authentic tasks (Cozine 2015), game-based learning (Johnston et al. 2015),

group discussion tasks, in-class presentation and role-play activities (Kim et al. 2013). Not only were self-awareness, self-understanding, interpersonal skills and self-reflection skills gradually nurtured amongst students, but lifelong learning attitudes and ethical leadership were also well developed (Shek 2019).

Holistic education is not only an educational philosophy but also a high-level indication (Miller and Nigh 2017). Balanced development is highly emphasised amongst the different items. The findings indicated a balanced development and involvement in all aspects of students' life under holistic education. The reason is that for four years these students were nurtured through a series of experiential learning activities under holistic education; they were not just inspired by intellectual development but also fostered their positive emotional, psychological and spiritual development. They were cultivated to have a higher level of reflection and deeper thinking on their inner world, grasp the subtle relationship between people, integrate closely with the natural environment and search for the ultimate answer in life.

Conclusion

This study contributes to the field by demonstrating the development and process of Chinese university students' spiritual wellbeing under the cultivation of holistic education during their four years in universities. The study fills in the following research gaps. Firstly, only a few quantitative or qualitative research and longitudinal studies have been conducted on the value and role of holistic education in the higher education context of Hong Kong. Secondly, this research provides different case studies on the application of experiential learning activities for holistic education in the context of a four-year undergraduate degree programme with honour system. Simultaneously, moral cultivation, value education and spiritual development should be adopted amongst university students (Pong 2017). The findings of the study lays the foundation for further and future investigation about holistic education in primary and secondary school contexts of Hong Kong.

The current study has three major limitations. Firstly, the sample sizes of the quantitative surveys ($N = 276$) and individual in-depth interviews ($N = 32$) are extremely small. Thus, the representativeness may not be reliable, and the generalisability may be limited because only three universities were involved. Secondly, the concepts of 'spirituality' and 'spiritual' are abstract, metaphysical and unfamiliar to the majority of the participants. Thus, some of the respondents may have misunderstood the questions. Thirdly, the participants may have chosen their ideal status rather than their real situation through a self-reporting system in the questionnaire survey. Thus, the participants may occasionally have overestimated or underestimated themselves in the quantitative research. Fourthly, the analysis and judgement of the qualitative studies based on the observation of individual in-depth interviews may be subjective and

biased because only the interviewer (the author) was involved.

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No potential conflict of interest was reported by the author.

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