

Dou, D., Wu, X., Shek, D. T. L., & Leung, G. K. P. (2024). Evaluating the effectiveness of an online National Education Program for Research Postgraduate Students in Hong Kong: A multidimensional approach. In D. T. L. Shek, D. Dou, X. Zhu, X. Li, & J. Merrick (Eds.), *Hong Kong National Security Law education programs* (pp.65 – 86). Nova Science.

Chapter 5

Evaluating the effectiveness of an online National Education Program for Research Postgraduate Students in Hong Kong: A multidimensional approach

Diya Dou, PhD¹, Xue Wu, PhD², Daniel TL Shek, PhD, FHKPS, BBS, SBS, JP¹ and Gilbert KP Leung, MAP²

¹*Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hong Kong, PR China and* ²*Office of Undergraduate Studies, The Hong Kong Polytechnic University, Hong Kong, PR China*

Social stability is crucial for enhancing the quality of life, as it recognizes the interconnectedness of individuals within the society. To foster students' understanding of the National Security Law and related issues, The Hong Kong Polytechnic University provided an online National Education program to research postgraduate students during the 2022/23 Semester 1. The program included a 3-hour self-paced lecture and accompanying learning materials for self-study of three hours. 256 participants were subjected to a 19-item questionnaire to evaluate the program's effectiveness in several ways. We conducted confirmatory factor analyses to evaluate the scale's structure and multiple regression analyses to examine the relationships between different dimensions of students' perceptions of the program and their overall satisfaction. Results of the confirmatory factor analyses revealed three distinct dimensions (perceptions of course attributes, understanding of National Education and law-abiding behaviors, and perceptions of self-paced learning) that are consistent with previous findings. Results indicated that students generally held positive views of the program across all dimensions. Furthermore, multiple regression analysis demonstrated that these dimensions significantly predicted the overall evaluation. These findings imply that the research postgraduate students appreciated the online program and that it promoted their understanding of National Education and law-abiding behaviors.

Correspondence: Daniel TL Shek, PhD, FHKPS, BBS, SBS, JP, Associate Vice President (Undergraduate Programme), Chair Professor of Applied Social Sciences and Li and Fung Professor in Service Leadership Education, Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hungghom, Hong Kong, PR China. Email: daniel.shek@polyu.edu.hk

Introduction

Human beings are highly social and interdependent. Anyone is essentially a part of social systems, ranging from businesses, neighborhood groups, and educational institutions to larger communities like one's city or country (1). Therefore, social stability is a significant predictor of quality of life, as it represents a well-structured life and appropriate social engagement (2). Conversely, absence of social stability can adversely impact the quality of life and public health (3). During 2019-2020, protests by opponents of the "Extradition Bill" eventually triggered

social unrest, with two universities occupied by the protestors (4) and numerous roads closed due to arson, seriously jeopardizing social stability. Previous studies show that social unrest and public health issues have been linked to deteriorating mental health (5,6). Wong and colleagues (7) stated the association between reduced general mental well-being and social stressors, such as social unrest. Accordingly, an increasing prevalence of depressive symptoms and post-traumatic stress disorder (PTSD) was observed after the 2019-2020 social unrest in Hong Kong, irrespective of whether they participated in the events (5,8). Ng (9) used “mental health tsunami” to characterize the effects of social unrest, including the exposure to violence, the breakdown of social networks, and the deteriorating economic situations.

In the context of higher education, social unrest also severely affected students’ campus lives. First, students actively involved in the protests may have to suspend their studies due to legal sanctions. Second, in times of social upheaval, university students have to face dramatic changes in teaching and learning as well as examinations and struggle with limited resources, which may ultimately exacerbate their anxiety, stress, and frustration (4). Moreover, not only active protesters can be prone to PTSD symptoms (10). In fact, students who learned about the events on the news, lived in the affected areas, or further away from their families and stayed in resident halls in universities of Hong Kong, might experience mental health crisis as well. Their stress-related symptoms can persist for a few days or even decades after exposure to social events (10).

In response to this social event, to help people back to normal life and to rehabilitate law and social order (11), the “Law of the People’s Republic of China on Safeguarding National Security in the Hong Kong Special Administrative Region” (“HKNSL”) was enacted by the National People’s Congress for the Hong Kong Special Administrative Region (“HKSAR”) and implemented on June 30, 2020. The enactment of HKNSL significantly impacts the region’s social, legal, and political domains by addressing local legislation concerning national security (12,13). Furthermore, Article 10 of the HKNSL emphasizes the importance of cultivating legal awareness among young people and strengthening their commitment to adhering to the law. To achieve this, HKSAR is mandated to promote national security education in various institutions such as schools, universities, social organizations, and through media platforms including the Internet (14). This initiative aims to heighten the understanding of national security among Hong Kong residents and reinforce their obligation to comply with the law.

The creation and dissemination of knowledge for the benefit of people and communities is higher education’s main goal. In light of growing concerns about insufficient law-abiding awareness and legal knowledge among Hong Kong students (15,16), higher education institutions have a crucial role in fostering students’ adherence to the law and facilitating adolescents’ development of legal beliefs, attitudes, and reasoning abilities (17). Previous research has indicated that some young people may resist or even violate laws they perceive as unreasonable or unjust, despite viewing legal compliance as a prerequisite for being a socially responsible citizen (18). Moreover, peer influence can significantly impact their understanding of the rule of law (19). To mitigate the risk of students making ill-informed judgments, it is essential to introduce law-related knowledge and emphasize civic responsibility as early as possible (20). Moreover, providing legal education to university students helps maintain social harmony (21). Students could acquire legal thinking and moral sense in the legal concepts via the assimilation of legal concepts and a fundamental understanding of national security, thus

amending the legal knowledge gap. If implemented successfully, legal education can cultivate social stability and reduce social unrest.

Therefore, as one of the eight University Grants Committee (“UGC”) funded institutions in Hong Kong, a program titled “Understanding China and the Hong Kong Special Administrative Region, P.R.C.” was developed at The Hong Kong Polytechnic University to deepen student’s understanding of the concepts and importance of national security. The program covers topics of modern China history with the concept of “Century of Humiliation”, “overview of the restoration of Hong Kong to the People’s Republic of China in 1997” (including the Basic Law and the constitutional principle of “one country, two systems”), “concept of national security”, “the HKNSL and its importance”, “four major offenses listed in HKNSL”, “issues and myths surrounding HKNSL”.

As research postgraduate students have more autonomy, the program is conducted entirely online. Course content includes a 3-hour self-paced e-learning lecture, PowerPoint slides, and 20 lecture notes. To pass the course, students have to take a test with 10 multiple-choice questions and score 8 or above. They are allowed to attempt the test multiple times.

Unlike traditional face-to-face mode, e-learning is the educational approach that uses modern communication technologies to provide students with information intended to support learning (22,23). Apart from several benefits of e-learning, including the ability to study at any time and any place, the potential for considerable financial savings, the absence of crowded transportation, the freedom to make their own decisions, and time savings, students are more prone to manage, control and evaluate their learning process (24-26). In other words, the learning process is self-paced, giving students more freedom in learning. In this program, students can log in to the online platform anytime to revisit the learning materials unlimitedly to consolidate their understanding of the program contents. As research postgraduate students, their systematic studies may be filled with a large amount of literature and experiments and are also under tremendous research pressure. Therefore, time management can be a salient concern for them (27). E-learning mode provides them with more extensive flexibility of time in their learning process, which fosters them to develop time management strategies in studying the program. In addition, students’ learning experience can also be enhanced by applying a more advanced approach to delivering and receiving the learning resources (28). In particular, as a sensitive and controversial National Education program such as the National Security Law, the anonymity feature of e-learning creates an ideal learning environment for students. This online, anonymous learning model minimizes students’ pressure and anxiety when answering questions in the class and fosters their cognitive engagement (29). Thus, the participation and comprehension of the students could be improved. Moreover, compared with restudying the key concepts, multiple testing with feedback can result in enhanced learning (30), and the effect of repeat retrieval can be observed in both the short-term and long-term. This indicated that the multiple attempts feature of the program is helpful for students to recall new concepts. These features suggest that the national security education program developed by our university is expected to be able to foster students in acquiring relevant knowledge. Additionally, according to Faulconer et al (31), assessment designs with many attempts and feedforward boosted information retention and motivated students to try again, and those who repeated testing recalled 80% of the content, compared to 36% or less for their peers (32).

Compared with other general education subjects, education related to National Security Law is relatively new. Consequently, it is essential to carry out a subjective outcome evaluation to address concerns regarding the potential positive impact of the national security education program on research postgraduate students, as well as to respond to societal criticisms about the perceived indoctrination associated with National Education. This type of evaluation, which focuses on client satisfaction, has been widely employed in previous studies (33,34). It is also commonly utilized in higher education to understand students' learning experiences and satisfaction in courses (35).

Scholars believe that subjective outcome evaluation in higher education settings has many advantages. First, data collection for evaluation is cost-effective; a large sample size of data can be collected within a short time, with no need for any special skills and equipment for researchers to operate (15). Second, subjective outcome evaluation fosters the refinement of the subject, which is essential for course coordinators to ensure students grasp the message in the learning materials and receive valuable feedback to improve the loopholes in the newly developed course. Furthermore, as many students' comments are collected, researchers can obtain a more reliable picture. In addition, the use of a quantitative approach for the subjective outcome evaluation can help to transfer these findings to other populations and domains (36).

In the past, our research team investigated different student groups' perceptions of the National Education program, including undergraduate students (37) and the teachers of the undergraduate National Education program (38). No matter whether undergraduate students or lecturers, most agreed that the course improved their understanding of HKNSL and law abidance concepts (11, 15, 16, 37-39). However, since postgraduate students took this program via a different mode than undergraduates, their perceptions of the program still need to be evaluated. Therefore, to examine whether different learning modes and students' populations would lead to different results, it is essential to know about the perception of research postgraduate students toward the online national security education program.

All above, this study aims to quantitatively examine research postgraduate students' perception of the online National Education program in Semester 1 of the 2022/23 academic year. We aimed to answer the following research questions:

- Research question 1 (RQ1) What are the psychometric properties of the online National Education program? With reference to the previous findings (15), we expected the scale to capture students' perceptions of self-paced learning, understanding of National Education and law-abiding behaviors, and course attributes and be presented in a 3-factor model (Hypothesis 1).
- Research question 2 (RQ2): How do students perceive the online National Education program in terms of the benefits of the self-paced online learning mode, students' comprehension of National Education and law-abiding behavior, as well as curriculum design? With reference to previous findings (15,16), we expected the program would positively impact students in general and in different aspects of the online program (Hypothesis 2a, 2b, 2c).
- Research question 3 (RQ3): What are the predictors of the overall perception of the course evaluation scale? With reference to previous findings, it was hypothesized that

students' scores on all three subscales (course attributes, understanding of National Education and law-abiding behaviors, and self-paced learning) would be significantly and positively correlated with each other and with their overall evaluation scores (Hypothesis 3a). Besides, we expected all three attributes would contribute to the overall perception of the course evaluation (Hypothesis 3b).

Our study

This study utilized data from the subjective outcome evaluation collected in the first semester of the 2022/2023 academic year. An online course evaluation questionnaire was administered to research postgraduate students who had completed and passed the online test of the e-learning program. Participants were informed that the information collected would only be used for educational and research purposes, and they provided consent accordingly. The online survey was completely anonymous and optional.

Among the 422 research postgraduate students who passed the online assessment, 256 students (64.22%) completed the evaluation questionnaire. The sample consisted of 140 male (54.7%) and 116 female students (45.3%), with an average age of 25.90 years.

Instruments

The study employed a modified version of the post-lecture evaluation questionnaire developed by Shek and colleagues (16) to assess students' perceptions of different aspects of the online program. The primary distinction between the National Education programs for first-year undergraduate and research postgraduate students is the teaching mode. The undergraduate program incorporates face-to-face lectures and facilitates teacher-student and peer interactions, whereas the research postgraduate program is online and emphasizes self-paced learning. Therefore, items related to teachers' attributes and peer interactions were replaced with items of self-paced learning. The modified questionnaire contained 19 items, with responses recorded on a six-point Likert scale (1 = "Strongly Disagree" and 6 = "Strongly Agree"). There are several domains in this scale. The first domain is "Course attributes" with six items:

- Item 1 "The design of this course was very good."
- Item 2 "There were many opportunities for reflection in this course."
- Item 3 "This course is helpful to my personal development."
- Item 4 "This course has improved my problem-solving ability."
- Item 5 "This course has improved my understanding of the importance of attributes of successful leaders (e.g., critical thinking, moral competence, law abidance etc.)."
- Item 6 "This course has improved my critical thinking."

The second domain is "Understanding of National Education and law-abiding behaviors" with 9 items:

- Item 7 "This course helps me understand the knowledge of the history of Modern China."
- Item 8 "This course helps me understand the knowledge of the history of Hong Kong."

- Item 9 “This course has helped me understand the concepts of national security.”
- Item 10 “I understand that national security is important for the stability of a society.”
- Item 11 “This course has helped me understand the offenses and penalties surrounding the Hong Kong National Security Law.”
- Item 12 “This course has helped me understand the importance of implementing the Hong Kong National Security Law.”
- Item 13 “This course has helped me clarify some myths related to Hong Kong National Security Law.”
- Item 14 “I will try my best to serve as a law-abiding citizen.”
- Item 15 “I will try my best to serve as a socially responsible leader.”

The third domain is “Self-paced learning” assessed by three items:

- Item 16 “The self-paced online learning course enabled me to learn more efficiently about this course.”
- Item 17 “The self-paced online learning course allows me to learn the course materials according to my own situation.”
- Item 18 “Overall speaking, I like the self-paced online learning experience.”

The final domain is “Overall evaluation” using one item evaluated students’ overall perception of the course:

- Item 19 “Overall speaking, I have a very positive evaluation of this course.”

Data analysis

Data analyses were conducted using IBM SPSS Statistics 26. First, positive and negative response rates were calculated, followed by descriptive analyses to determine means, standard deviations (SDs), and correlations between variables. Then, confirmatory factor analysis (CFA) was conducted to verify the construct validity of the online course evaluation questionnaire (40). Researchers contend that for Likert scales with five or more response categories, robust maximum likelihood (MLR) is acceptable (40). Thus, we conducted MLR estimation in the CFA. The goodness of fit of the CFA model was evaluated using various indices, which include chi-square (χ^2), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standard Root Mean Square (SRMR). The cut-off criteria for fit indices were above .90 for CFI and TLI and below .080 for RMSEA and SRMR (41). Furthermore, multiple regression analysis was used to explore the relationships between variables. Specifically, the analysis examined the strength of the different areas covered in the online questionnaire in predicting the overall evaluation.

Figure 1

Findings

Results of CFA indicated that the three-factor model (course attributes, understanding of National Education and law-abiding behaviors, and self-paced learning) showed a good model fit [$\chi^2 (109) = 244.37$, CFI = .969, TFI = .956, RMSEA = .073, SRMR = .047]. Thus, Hypothesis 1 is supported, and the CFA model is shown in figure 1. Furthermore, the factor loadings of all items were greater than .60, ranging from .821 to .919 for items related to self-paced learning, from .763 to .930 for course attributes, and from .636 to .933 for students' understanding of National Education and law-abiding behaviors, respectively, indicating that each item was substantially related to the corresponding latent factor (see table 1).

Table 1

Table 2

Regarding research postgraduate students' perceptions of the online program, descriptive statistical analyses showed that students generally had a positive perception of the course, with positive responses (≥ 4 on Likert scale 1 – 6) ranging from 89.33% to 98.81% for different question items (see table 2). Students held favorable views on course attributes (item 1 to item 6), including the excellent design of the curriculum (93.33%) and the opportunities for reflection (95.67%). Additionally, students found the course helpful in enhancing their understanding of National Education and law-abiding behavior (item 7 to item 15). For self-paced learning (items 16 to item 18), the students were satisfied with this learning mode. For instance, over 90% of the participants agreed that the self-paced online learning course enabled them to learn more efficiently about this course, and they appreciated this learning experience. As expected, most students responded positively to the different aspects of the course, supported Hypothesis 2a, 2b, and 2c.

Table 3

Table 3 presents the results of the correlation analyses between students' perspectives on various aspects and their overall evaluation of the course. The findings indicate that students' self-paced learning experiences and their understanding of National Education and law-abiding behaviors were positively correlated ($r = .623$, $p < .001$). Additionally, both students' self-paced learning and their understanding of National Education and law-abiding behaviors were positively associated with their views on course attributes, with correlation coefficients of .745 and .746, respectively ($p < .001$). These results suggest that students who reported a positive experience with self-paced learning and a favorable view of the course attributes tend to have a better understanding of National Education and law-abiding behaviors. Furthermore, the results showed that all three subscales (self-paced learning, understanding of National Education and law-abiding behaviors, and course attributes) were significantly and positively correlated with each other ($p < .001$).

Moreover, students' overall evaluation of the course was positively associated with all three subscales: self-paced learning ($r = .733$, $p < .001$), understanding of National Education and law-abiding behaviors ($r = .756$, $p < .001$), and course attributes ($r = .748$, $p < .001$). These findings suggest that students who reported positive experiences with self-paced learning, a better

understanding of National Education and law-abiding behaviors, and favorable course attributes were more likely to have a positive overall evaluation of the course. In addition, the results disclosed that students' age and gender were not significantly correlated with any of the subscales or their overall evaluation of the course. These findings suggest that students' age and gender did not significantly influence their perceptions of the course. Hypothesis 3a was supported.

Furthermore, in terms of the predictors of overall course satisfaction, results of multiple regression analyses suggested that the three subscales significantly predicted the overall evaluation after controlling age and gender (Table 4). Among all attributes covered, course attributes ($\beta = .400, p < .001, \text{Cohen's } f^2 = .234$) were the strongest predictor of the overall evaluation, followed by self-paced learning ($\beta = .318, p < .001, \text{Cohen's } f^2 = .155$), and understanding of National Education and law-abiding behaviors ($\beta = .225, p < .001, \text{Cohen's } f^2 = .055$). These findings provided support for Hypothesis 3b.

Discussion

The study has some unique features. Firstly, the program "Understanding China and the Hong Kong Special Administrative Region, P.R.C." introduces the Hong Kong National Security Law (HKNSL), which is a novel and relatively controversial topic within the subjects offered by universities in Hong Kong. Consequently, individuals may hold a wide range of opinions regarding the related initiatives. Those who support this policy believe that teaching law-related knowledge in the National Education program improves students' legal thinking and moral sense (21), lowers the possibility of making illogical judgments (20), and maintains social harmony. On the other hand, the opposition worried that the HKNSL undermines the social, legal, and political freedom of Hong Kong and deepens the ideological conflicts between China and Hong Kong (12). Therefore, we gathered evidence to understand research postgraduate students' perceptions of the program to dispel the myth that the program is "brainwashing". Secondly, concerning education on law-abiding leadership for undergraduate students in different academic years, findings indicated that the related courses delivered via face-to-face or HyFlex mode were appreciated by students (15,16,37). As the course for research postgraduate students was delivered in a self-paced online environment, there is a need to examine the effectiveness of such a learning mode to determine whether this mode is applicable. Although previous studies demonstrated the advantages of e-learning for students, including avoiding the limitations of time and place, higher autonomy in making their own decisions and improving their ability to manage, control and evaluate their learning process (24-26), there were no findings available on the perceived effectiveness of online national security education for research postgraduate students in Hong Kong.

Several observations from the current study may be emphasized. First, we validated the course evaluation scale we adapted and modified for this study using confirmatory factor analyses. Results provided support for a three-factor structure of the scale, including three dimensions: course attributes, understanding of National Education and law-abiding behaviors, and self-paced learning. Hence, the results provided support for the factorial validity of the scale as well as modification of the post-lecture evaluation survey. These findings indicate that this

scale could be employed in future evaluations of law-related education delivered through online platforms.

Second, descriptive statistical results exhibited that research postgraduate students commonly had positive perceptions towards the online program in different aspects, including learning mode, curriculum design, benefits, and their appreciation of understanding National Education and law-abiding behavior. Respondents generally appreciated the self-paced online learning experience, allowing them to learn about the learning contents more efficiently and flexibly according to their situations. Students perceived that the course helped them acquire knowledge of “history of Modern China”, “history of Hong Kong”, “concepts of national security”, “importance of implementing the HKNSL”, “importance of national security to the stability of a society”, “offenses and penalties surrounding the HKNSL”, and clarified “some myths related to HKNSL”. Additionally, the students perceived that after completing the course, they would make every effort to uphold the law and act as moral role models. In terms of course attributes, most students appreciated the curriculum design, which allowed for reflection, and helped improve their personal development, critical thinking, and problem-solving ability, as well as deepen their comprehension of successful leaders.

In line with the previous studies (16), the responses from the students refuted the idea that they hold hostility towards the National Education program. Instead, their perception of becoming righteous citizens and socially responsible leaders had been strengthened through the learning process. The study also revealed that the self-paced learning mode provided research postgraduate students with greater flexibility in learning (26) and addressed their concerns regarding time management (27). For the subscales “understanding of National Education and law-abiding behaviors” and “course attributes”, the results of this study are consistent with Shek et al (15) and Shek et al (16), with respondents holding a generally positive view of these aspects. Notably, of 422 research postgraduate students enrolled in this program, 256 (64.22%) responded to our online course evaluation questionnaire. The response rate was encouraging, as in the context of teaching evaluation, a response rate of 21% is ideal for a program with more than 100 students (42). Moreover, the response rate of this study was higher than that of other similar studies that collected evaluation from Hong Kong students enrolled in online courses during the pandemic [e.g., 59% in Ng (9) and 18% in (43)].

Third, with regards to the predictors of the overall evaluation with a 3-hour self-paced e-learning lecture (Item 19), multiple regression analyses indicated that all three attributes of self-paced learning, understanding of National Education and law-abiding behaviors, and course attributes significantly and positively predicted the overall evaluation of this online program. Among these three predictors, course attributes emerged as the strongest predictor of the overall evaluation, followed by the attribute of self-paced learning and the understanding of National Education and law-abiding behaviors, respectively. This finding is consistent with our previous studies (15,16). One possible explanation of the subscale course attributes being the most robust predictor is that students found the curriculum design well-structured, enabling them to reflect on the learning process. However, further research is needed to explore which specific elements within the course design foster personal development among students and enhance their learning process.

Despite the fact that the findings are encouraging, this study has some limitations. First, although using student evaluation questionnaires to assess students' learning experience and overall satisfaction with various programs is a widely accepted practice in higher education (35), the voluntary nature of such evaluations may limit the validity of the results. It is possible that the opinions of students who did not complete the course evaluation questionnaire were not captured. Second, to gain a more comprehensive understanding of the benefits and drawbacks of the program, it would be beneficial to incorporate a qualitative approach in data collection from research postgraduate students. This could offer a more nuanced understanding of the various elements contributing to the program's different aspects.

To conclude, this present study underscores the perceived effectiveness of the National Education program offered to research postgraduate students. Overall, the program received favorable feedback from the participants. The results of our study reinforce the notion that the National Education program is a promising possibility for diverse student populations and can be delivered through various channels. These findings have significant implications for the design and implementation of educational policies and programs to enhance university students' learning outcomes.

Acknowledgments

The development and implementation of the National Security Program as well as this evaluation study were supported by The Hong Kong Polytechnic University (52UK and 52U9). The preparation of this paper is financially supported by Wofoo Foundation (ZH2C and ZH4Q) and Research Matching Fund of the Research Grants Council (ZECL). This is a reprint of an article published in the International Journal of Child Health and Human Development.

References

1. Kay AC, Friesen J. On social stability and social change: Understanding when system justification does and does not occur. *Curr Dir Psychol Sci* 2011;20(6):360-4.
2. German D, Latkin CA. Social stability and health: Exploring multidimensional social disadvantage. *J Urban Health* 2012;89(1):19-35.
3. Dingake OBK. The rule of law as a social determinant of health. *Health Hum Rights* 2017;19(2):295-8.
4. Shek DTL. Protests in Hong Kong (2019–2020): A perspective based on quality of life and well-being. *Appl Res Qual Life* 2020;15(3):619-35.
5. Ni MY, Yao XI, Leung KSM, Yau C, Leung CMC, Lun P, et al. Depression and post-traumatic stress during major social unrest in Hong Kong: A 10-year prospective cohort study. *Lancet* 2020;395(10220):273-84.
6. Vindegaard N, Benros ME. COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. *Brain Behav Immun* 2020;89:531-42.
7. Wong MYS, Siu LTT, Hui LMC, Chan KWS, Lee HME, Chang WC, et al. Changes in mental well-being in Hong Kong before and during social unrest and COVID-19. *Res Sq* 2021 Apr 19.
8. Labonté R, Mohindra K, Schrecker T. The growing impact of globalization for health and public health practice. *Annu Rev Public Health* 2011;32(1):263-83.

9. Ng R. Mental health crisis in Hong Kong: Its current status and collective responses from mental health professionals in Hong Kong. *Psychiatr Times* 2020;37:1.
10. Mogul R. PTSD and protests: How the violence on Hong Kong's streets impacts mental health. HKFP. 2019 Dec 15.
11. Shek DTL, Li X, Dou D, Zhu X. Teachers' experiences in law abidance leadership education: A qualitative study. *Int J Child Health Hum Dev* 2022b;15(1):73-84.
12. Chan JMM. National Security Law in Hong Kong: One year on. 30 *Academia Sinica Law J* 2022 Jan 04.
13. Wang C. In search of the intrinsic value of one country two systems: From selective adaptation to normative consensus. *Asian Educ Dev Stud* 2023;12(1):103-12.
14. HKSAR. The Law of the People's Republic of China on Safeguarding National Security in the Hong Kong Special Administrative Region. URL: [https://www.elegislation.gov.hk/doc/hk/a406/eng_translation_\(a406\)_en.pdf](https://www.elegislation.gov.hk/doc/hk/a406/eng_translation_(a406)_en.pdf).
15. Shek DTL, Dou D, Zhu X, Li X. Law abidance leadership education for university students in Hong Kong: Post-lecture evaluation. *Front Psychol* 2022;13:994448.
16. Shek DTL, Zhu X, Li X, Dou D. Satisfaction with HyFlex teaching and law-abiding leadership education in Hong Kong university students under COVID-19. *Appl Res Qual Life* 2022;17(5):2833-58.
17. Naftali O. "Law does not come down from heaven": Youth legal socialisation approaches in Chinese textbooks of the Xi Jinping era. *J Curr Chin Aff* 2022;51(2):265-91.
18. Kennedy KJ, Chow JKF. Adolescents' attitudes to law and law-related issues; The case of Hong Kong students. *Citizsh Soc Econ Educ* 2009;8(2-3):84-98.
19. The Hong Kong Federation of Youth Groups. Strengthening the rule of law through education. URL: <https://yrc.hkfyg.org.hk/en/2021/11/08/yi065-2/>
20. Wang J. A study on the effect of law education on attitude toward rule of law based on the perspective of legal knowledge. *Revista de Cercetare și Intervenție Socială* 2020(69):357-70.
21. Xu L. Legal education in colleges and universities. *Front Educ Res* 2022;5:1-6.
22. Aldulaimi SH, Abdeldayem MM, Keir MYA, Al-Sanjary O. E-learning in higher education and COVID-19 outbreak: Challenges and opportunities. *Educ Psychol J* 2021;58(2):38-43.
23. Clark RC, Mayer RE. *E-learning and the science of instruction*, 4th ed. Hoboken, NJ: Wiley, 2016.
24. Abuhassna H, Al-Rahmi WM, Yahya N, Zakaria MAZM, Kosnin ABM, Darwish M. Development of a new model on utilizing online learning platforms to improve students' academic achievements and satisfaction. *Int J Educ Technol High Educ* 2020;17(1):38.
25. Dumford AD, Miller AL. Online learning in higher education: Exploring advantages and disadvantages for engagement. *J Comput High Educ* 2018;30(3):452-65.
26. Yuhanna I, Alexander A, Kachik A. Advantages and disadvantages of Online Learning. *J Educ Verkenning* 2020;1(2):13-9.
27. Allan B. Time to learn? E-learners' experiences of time in virtual learning communities. *Manag Learn* 2007;38(5):557-72.
28. Sharpe R, Benfield G. The student experience of e-learning in higher education. *Brookes eJ Learn Teach* 2005;1(3):1-9.

29. Barr ML. Encouraging college student active engagement in learning: Student response methods and anonymity. *J Comput Assist Learn* 2017;33(6):621-32.
30. Wiklund-Hörnqvist C, Jonsson B, Nyberg L. Strengthening concept learning by repeated testing. *Scand J Psychol* 2014;55(1):10-6.
31. Faulconer E, Griffith JC, Frank H. If at first you do not succeed: Student behavior when provided feedforward with multiple trials for online summative assessments. *Teach High Educ* 2021;26(4):586-601.
32. Karpicke JD, Roediger HL. The critical importance of retrieval for learning. *Science* 2008;319(5865):966-8.
33. Leung H, Shek DTL, Mok BPW. Post-lecture subjective outcome evaluation of a university subject on leadership and intrapersonal development. *Int J Child Adolesc health* 2016;9:223-33.
34. Shek DTL, Sun RCF. Evaluation of the Project P.A.T.H.S. using multiple evaluation strategies. *Quality of life in Asia*. 3. Singapore: Springer Singapore, 2013:53-67.
35. Richardson JTE. Instruments for obtaining student feedback: a review of the literature. *Assess Eval High Educ* 2005;30(4):387-415.
36. Kelle U. Combining qualitative and quantitative methods in research practice: Purposes and advantages. *Qual Res Psychol* 2006;3(4):293-311.
37. Shek DTL, Zhu X, Dou D, Li X. National security law education in Hong Kong : Qualitative evaluation based on the perspective of the students. *Int J Environ Res Public Health* 2023;20(1):553.
38. Shek DTL, Chau CC, Mok B, Chai W, Cheng NS, Shek V, et al. Teachers' experience in law-abiding leadership education: Replication across time. *Int J Child Health Hum Dev* 2022;16(1):27-19.
39. Shek DTL, Chau C, Mok B, Chak Y, Cheng N, Shek V, et al. Education on law-abidance leadership: Does face-to-face teaching matter? *Int J Child Health Hum Dev* 2023;16(1):89-102.
40. Byrne BM. *Structural equation modeling with Mplus: Basic concepts, applications, and programming*. Hove: Routledge, 2013.
41. Hu Lt, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Struct Equ Modeling* 1999;6(1):1-55.
42. Nulty DD. The adequacy of response rates to online and paper surveys: what can be done? *Assess Eval High Educ* 2008;33(3):301-14.
43. Liu H, Zhu J, Duan Y, Nie Y, Deng Z, Hong X, et al. Development and students' evaluation of a blended online and offline pedagogy for physical education theory curriculum in China during the COVID-19 pandemic. *Educ Technol Res Dev* 2022;70(6):2235-54.

Appendix:

Figure 1. CFA model

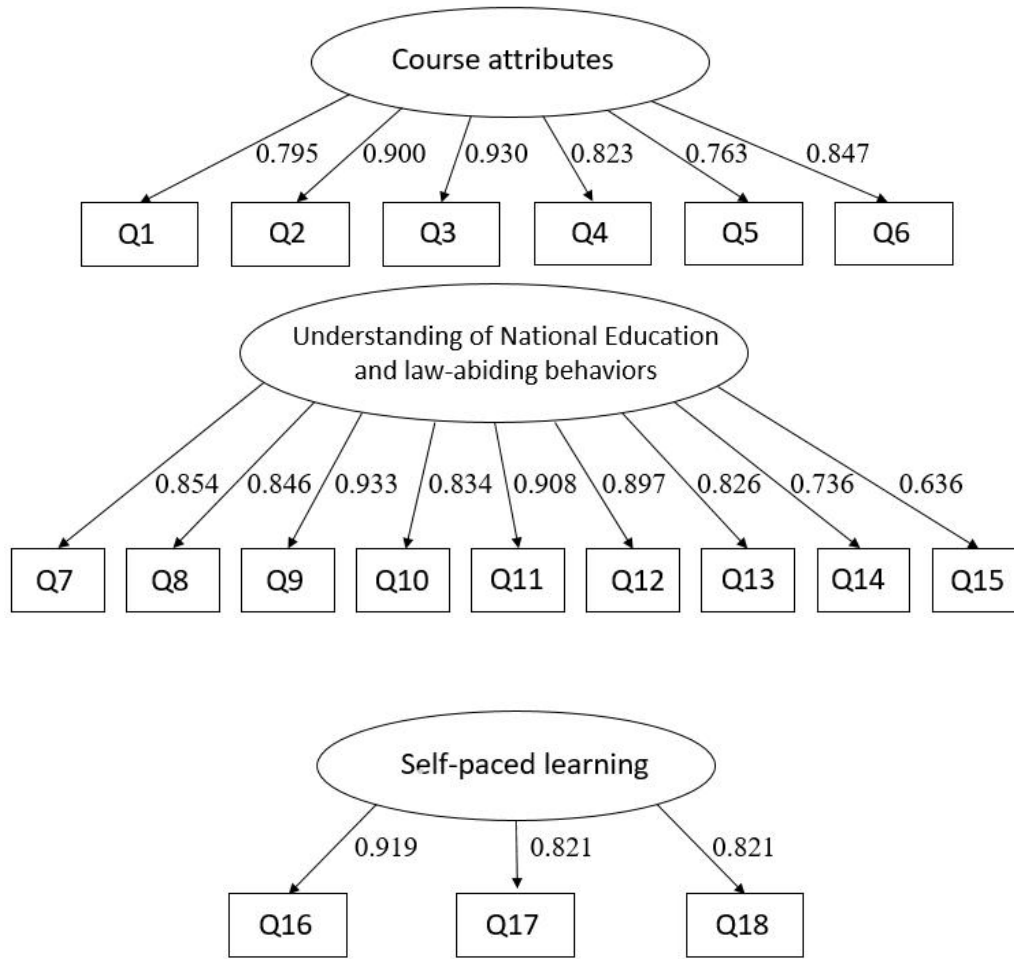


Table 1. Factor loadings of online evaluation question items

	Factor loading
<hr/>	
Factor 1: Course attributes	
Item 1	0.795
Item 2	0.900
Item 3	0.930
Item 4	0.823
Item 5	0.763
Item 6	0.847
<hr/>	
Factor 2: Understanding of National Education and law-abiding behaviors	
Item 7	0.854
Item 8	0.846
Item 9	0.933
Item 10	0.834
Item 11	0.908
Item 12	0.897
Item 13	0.826
Item 14	0.736
Item 15	0.636
<hr/>	
Factor 3: Self-paced learning	
Item 16	0.919
Item 17	0.821
Item 18	0.821
<hr/>	

Table 2. Descriptive results of students' perceptions of the course

	N	Mean	S.D.	1		2		3		4		5		6		Negative responses 1+2+3		Positive responses 4+5+6	
				N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
				1. The design of this course was very good.	255	5.11	.999	3	1.18	5	1.96	9	3.53	27	10.59	110	43.14	101	39.61
2. There were many opportunities for reflection in this course.	254	5.09	.909	1	0.39	5	1.97	5	1.97	39	15.35	113	44.49	91	35.83	11	4.33	243	95.67
3. This course is helpful to my personal development.	253	5.17	.915	2	0.79	3	1.19	6	2.37	32	12.65	107	42.29	103	40.71	11	4.35	242	95.65
4. This course has improved my problem-solving ability.	253	4.83	1.122	2	0.79	13	5.14	12	4.74	49	19.37	99	39.13	78	30.83	27	10.67	226	89.33
5. This course has improved my understanding of the importance of attributes of successful leaders (e.g., critical thinking, moral competence, law abidance etc.).	256	4.98	1.046	2	0.78	8	3.13	9	3.52	47	18.36	98	38.28	92	35.94	19	7.42	237	92.58
6. This course has improved my critical thinking.	254	5.02	1.029	2	0.79	7	2.76	11	4.33	37	14.57	105	41.34	92	36.22	20	7.87	234	92.13
7. This course helps me understand the knowledge of the history of Modern China.	252	5.52	.728	1	0.40	1	0.40	0	0.00	19	7.54	74	29.37	157	62.30	2	0.79	250	99.21
8. This course helps me understand the knowledge of the history of Hong Kong.	251	5.51	.771	1	0.40	1	0.40	4	1.59	15	5.98	71	28.29	159	63.35	6	2.39	245	97.61
9. This course has helped me understand the concepts of national security.	253	5.52	.754	1	0.40	1	0.40	3	1.19	15	5.93	73	28.85	160	63.24	5	1.98	248	98.02
10. I understand that national security is important for the stability of a society.	253	5.60	.737	1	0.40	2	0.79	1	0.40	13	5.14	60	23.72	176	69.57	4	1.58	249	98.42
11. This course has helped me understand the offenses and penalties surrounding the	253	5.53	.737	1	0.40	1	0.40	1	0.40	18	7.11	71	28.06	161	63.64	3	1.19	250	98.81

Hong Kong National Security Law.																			
12. This course has helped me understand the importance of implementing the Hong Kong National Security Law.	252	5.49	.811	1	0.40	3	1.19	2	0.79	17	6.75	72	28.57	157	62.30	6	2.38	246	97.62
13. This course has helped me clarify some myths related to Hong Kong National Security Law.	253	5.36	.883	1	0.40	4	1.58	4	1.58	23	9.09	82	32.41	139	54.94	9	3.56	244	96.44
14. I will try my best to serve as a law-abiding citizen.	252	5.67	.703	1	0.40	2	0.79	1	0.40	9	3.57	50	19.84	189	75.00	4	1.59	248	98.41
15. I will try my best to serve as a socially responsible leader.	254	5.52	.753	1	0.39	1	0.39	2	0.79	18	7.09	70	27.56	162	63.78	4	1.57	250	98.43
16. The self-paced online learning course enabled me to learn more efficiently about this course.	253	5.43	.746	1	0.40	1	0.40	0	0.00	23	9.09	88	34.78	140	55.34	2	0.79	251	99.21
17. The self-paced online learning course allows me to learn the course materials according to my own situation.	252	5.49	.739	1	0.40	2	0.79	1	0.40	12	4.76	89	35.32	147	58.33	4	1.59	248	98.41
18. Overall speaking, I like the self-paced online learning experience.	252	5.44	.783	1	0.40	2	0.79	2	0.79	18	7.14	87	34.52	142	56.35	5	1.98	247	98.02
19. Overall speaking, I have a very positive evaluation of this course.	252	5.37	.853	1	0.40	4	1.59	2	0.79	22	8.73	88	34.92	135	53.57	7	2.78	245	97.22

Table 3. Descriptive and correlational analyses

	N	Mean	SD	1	2	3	4	5
1 Age	247	25.90	3.346					
2 Gender	256	-	-	-0.085				
3 Self-paced learning	254	5.451	0.696	0.030	0.048			
4 Understanding of National Education and law-abiding behaviors	256	5.032	0.883	-0.100	0.019	0.623***		
5 Course attributes	255	5.527	0.667	0.005	0.058	0.745***	0.746***	
6 Overall Evaluation	252	5.369	0.853	0.019	0.091	0.733***	0.756***	0.748***

*** $p < 0.001$.

Table 4. Multiple regression analyses for overall evaluation

Model	Predictor	β	t	Cohen's f^2	R ² change	F change
1	Age	0.026	0.40	0.001	0.007	0.89
	Gender ^a	0.084	1.30	0.007		
2	Course attributes	0.400	7.44***	0.234	0.703	192.09***
	Understanding of National Education and law-abiding behaviors	0.225	3.60***	0.055		
	Self-paced learning	0.318	6.06***	0.155		

Note. In model 2, age and gender were statistically controlled.

^a 0 = male, 1 = female

*** $p < 0.001$