Int J Child Adolesc Health 2023;16(2):111-122 ISSN: 1939-5930

Nurturing holistic development of university students: The role of non-cognitive skills

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Abstract

With the transformation of the global economy from the industrial economy to the service economy, expectations about the desired graduate student attributes have also changed. Besides simply expecting young people to get good grades from their studies (i.e., development of intellectual, cognitive, or "hard" skills), there is also a call to focus on the holistic development of university students, particularly nurturance of their non-intellectual skills, non-cognitive, or "soft" skills. In this paper, we outline several conceptual models of non-cognitive or soft skills in young people, including models of non-cognitive skills, transversal skills, transferable skills, and multiple intelligence skills. We highlight several observations about these models, particularly concerning our vision of youth development, youth empowerment, and teaching and learning soft skills. Finally, we discuss the role of soft skills in nurturing holistic university student development in the higher education sector in Hong Kong.

Keywords: University students, holistic development, non-cognitive factors, soft skills, higher education

Introduction

For policymakers, educators, and parents, they always ask how we should nurture young people and the desired attributes of thriving young people. With industrialization taking place a few centuries ago, formal school systems also emerged where students learn the "technological ethos" cherished by societies and apply the related knowledge when they grow up. Typically, the formal school system focuses on the importance of language (oral and written communication), forming the foundation for studying other disciplines such as Arts and Culture. Besides, it also emphasizes Mathematics that forms the foundation of science and engineering disciplines. In terms of assessment, as these subjects emphasize the importance of intellectual or cognitive skills (such as

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comprehension of the subject matter), these subjects are usually assessed via examinations where there is clear "right" and "wrong" answers. Hence, these skills are also commonly regarded as "hard" skills.

However, with the changing global social-political and economic landscape, the global economy has gradually been dominated by the service economy. As pointed out by Shek, Chung and Leung (1), as service economy is structurally and functionally different from manufacturing economy, the attributes of effective service leadership are also different. Obviously, mere possession of intellectual or cognitive skills would not be enough under the service economy. For example, a young person with excellent language and Mathematics skills will not perform well in helping others if he/she lacks interpersonal skills and empathy. Besides, an employee without emotional management and resilience skills would hardly be successful in his/her work. In contrast to "intellectual" and "hard" skills, such skills are commonly regarded as "non-cognitive" skills, "soft" skills and "life skills."

There are several reasons why soft skills or non-cognitive skills are essential. First, employers regarded non-cognitive skills as important for university graduates or employees. In a survey conducted by the National Association of Colleges and Employers (2), the ability to work in a team, initiatives and work ethic were endorsed by 76.3%, 72.5% and 71.0% of the respondents. Besides, 63.4%, 60.3%, and 56.5% regarded flexibility/adaptability, leadership, and interpersonal skills as important employee attributes.

Furthermore, the American Association of Universities and Colleges (3) also reported that employers regarded Liberal Arts skills to be important: the ability to work with others in teams (93%), applications of knowledge in real life (92%), ethical judgment and reasoning (91%), cultural competence (90%), civic skills (84%). Based on a study of employers, Cheang and Yamashita (4) showed that four categories of non-cognitive skills were considered important, including soft skills and personal attributes, attitude and work ethic, problem-solving skills, critical thinking, effective communication, and working well with others. Similarly, based on a review, Shah et al. (5) showed that employers expected several graduate attributes, including effective communication, the ability to organize work and effective time management, learning from errors and opening to feedback, empathy, flexibility and adaptability, and goal and priority setting.

Second, while views and research findings highlight the importance of soft skills, studies showed gaps between employers and university students on the perception of soft skills, and employers were not satisfied with the soft skills of university attributes (6, 7). Finally, soft skills are vital because they contribute to individual well-being (8) and job satisfaction of employees (9).

In this paper, we outline several models highlighting the importance of soft skills and non-cognitive skills in young people. Then we will highlight several observations based on these models. Finally, we will discuss the role of soft skills in the holistic development of university students in the higher education sector in Hong Kong.

Non-cognitive skills

Within the formal education system, there is an emphasis on cognitive skills. In primary and high schools, the focus is commonly put on traditional subjects, including languages, Science, and Mathematics. These subjects have several characteristics. First, they require cognitive competencies such as logical thinking and understanding. Second, there are usually either "correct" or "incorrect" answers. Third, they can be easily accessed via achievement tests, such as language and Mathematics tests. In fact, such skills are commonly regarded as "hard" skills which act as an important index to determine if a student is qualified enough for graduation.

Although cognitive skills are essential for success in both academic and occupational fields, researchers argued that non-cognitive skills are also important for thriving among young people. For example, Crosbie (10) suggested that developing non-cognitive skills, which take over our entire life span, predicts our success in the workplace. This is consistent with Levasseur (11) whose findings showed that employers nowadays tend to look for potential candidates possessing high non-cognitive skills (e.g.,

teamwork and communication) rather than academic qualifications.

Previous studies have developed models on non-cognitive skills based on professionals with ample working experiences from various fields, for example senior managers in Global Marketing (12) or Technical Engineering (13). However, since only 54.8% of students would choose to work in their-major-related field after graduation (14) and most of the newly developed jobs (e.g., data scientists and young entrepreneurs) do require potential candidates possessing non-cognitive skills, including teamwork, communication, and leadership (15), thus a general framework of non-cognitive skills should be proposed for university students.

One useful framework was proposed by the World Economic Forum (16) which suggested the development of 16 important non-cognitive and cognitive skills for youth in the 21st century. The proposed cognitive skills include six literacies: numeracy, literarcy, literacy in domains of science, ICT, finance, and culture. For competencies (i.e., the non-cognitive skills dealing with challenges), they include creativity, effective communication, problem-solving competence, critical thinking, and collaboration. Finally, character qualities (i.e., the non-cognitive skills dealing with the changing environment) include adaptability, curiosity, leadership, initiative, persistence/grit, as well as social and cultural awareness.

The hierarchal model of skills, which was proposed by Muzio and Fisher in 2009 (17), further supported the importance of non-cognitive skills. In this model, it is argued that innate intelligence or skills, which is equivalent to the most basic biological needs (e.g., food and sleep) in the "hierarchy of needs" proposed by Maslow, are merely the basic skills assisting us to get a job offer in a labor market. However, if we aim to gain career success, our non-cognitive skills (i.e., emotional competence and motivation) play a more important role, which locates on the top of cognitive skills and is equivalent to the higher level of need in Maslow's need theory (e.g., belonging need and self-actualization), enabling us being able to communicate and work effectively with others.

In the context of higher education, some academic disciplines such as Business Studies and Social Work do cover non-cognitive skills (e.g., communication) in their curriculum. However, some academic disciplines such as Computer Science and Engineering focus primarily on individual work (e.g., programming) rather than group work (e.g., group presentation). In fact, educators have expressed concerns about such a heavy focus on individual cognitive skills (e.g., coding) in the education system in Hong Kong. Besides, to avoid fierce competition and the stress arising from achievement, the culture of 'lying flat' is growing among young people in mainland China, which is a recent term describing the search for a life with as little desires or expenses as possible (18). According to Dong (19), this culture exists among Chinese youth with different educational levels and across different professions which even include those young professionals who work in Big Tech companies with a good wage under the "996 scheme."

With reference to such a "lying flat" culture, the cultivation of non-cognitive skills such as persistence/grit, adaptability, and leadership through the development of meta-cognition, communication, and teamwork (20, 21) is essential. Moreover, sufficient opportunities should be provided to young people to apply and practice the learned non-cognitive skills to real life settings through participating in an apprenticeship or Service Learning (22). Such activities would facilitate cortical reorganization and re-wiring which helps to further develop the flexibility of young people through utilizing past experiences to cope with challenges and changes in a novel environment (23).

In conclusion, the development of both cognitive and non-cognitive skills can promote the holistic development of young people, which would benefit their short-term development such as increasing academic performance and long-term development such as increasing their career and life satisfaction, with the ultimate aim of enhancing their well-being for a happier life.

Transversal skills

Transversal skills are defined as the competencies that can be used in different situations, including the academic and work settings (24). Transverse skills,

such as critical thinking, problem-solving, intercultural competence, social competence, and technology literacy, have been recognized as essential contributors to individuals' adjustment, academic achievement, well-being, and success (25-30).

Conceptually, serval international organizations have proposed theoretical frameworks for transversal skills. Most of the frameworks contain competencies such as ICT literacy, intrapersonal skills, communication, and collaboration. For example, the "United Nations Educational, Scientific and Cultural Organization (UNESCO)" developed a transversal skills framework that includes six aspects as follows (24):

1. *Critical and innovative thinking* (e.g., creative thinking, application skills, reflective thinking, and good decision-making);
2. *Interpersonal skills* (e.g., communication skills, organizational skills, teamwork, cooperation with others, empathy, and care for others);
3. *Intrapersonal skills* (e.g., self-discipline, independent learning skills, adaptability, self-awareness, endurance, integrity, and self-respect);
4. *Global citizenship* (e.g., tolerance, respect for diversity, intercultural understanding, national identity, sense of belonging);
5. *Media and information literacy* (e.g., ability to critically evaluate information and media content, ethics in the use of ICT);
6. *Others* (e.g., skills defined and cherished by countries/economies).

Table 1 compares the skill/competency lists of six theoretical frameworks proposed by four international organizations, including UNESCO (24), the "European Commission (EU)" (31), the "Organization for Economic Cooperation and Development (OECD)" (29,32), and "World Economic Forum (WEF)" (33,34). According to the three categories (basic competencies, advanced competencies, and attitudes and values) of transversal skills proposed by Li (35), six existent theoretical constructs of transversal skills are listed in Table 1. Most of the constructs include collaboration, communication, technological competence, responsibility, initiative, innovation, sympathy, cultural competence, and flexibility. Furthermore, all constructs involve collaboration/teamwork, indicating its widely recognized importance.

Transversal and transferable skills are usually defined and used as equivalent terms since they both focus on competencies that can be applied in multiple areas. Besides, the two concepts highly overlap in terms of their contents, with both including competencies such as critical thinking, problem-solving, interpersonal skills, and literacy (see Table 1, for the contrast between UNESCO's skills [named "transversal skills"] and EU's skills [can be called "transversal/transferable skills"]) (36).

As noted by Terzieva and colleagues (36), the terminology of transversal skills or transferable skills "have a very vague meaning" (p. 27) (e.g., "key competencies", "core competencies", "21st-century skills" or "soft skills"), which means all these terms could also be called either transversal or transferable skills. For example, the critical competencies proposed by the EU (31) were also referred to as "transversal/transferable skills" in Terzieva's review (36).

However, although "transferable" and "transferable skills" are usually regarded as equivalent (36), we sometimes use "transferable" (but not "transversal"), depending on the context. For instance, when we describe the competencies that can be transferred from one job to another or describe those skills one can learn within one area (e.g., educational or social area) and then transfer them to other areas (e.g., career), we may just use "transferable skills" because we intend to emphasize the transferring process of transversal/transferable skills (see Terzieva's review (36) p. 29, for an example).

Transversal skills are not only required for students' academic achievement in higher education but also crucial for their success in their future professional life. As such, effective application of transversal skills frameworks in higher education can help universities to foster students' transversal skills development and to facilitate their transition from school to work.

Table 1. Comparison of six frameworks for transversal skills

	Frameworks						
Transversal skills	UNESCO (2016)	OECD, DeSeCo (2005)	OECD (2017)	EU (2018)	WEF (2016)	Whiting [WEF], (2020)	*N*
Basic/fundamental skills							
Writing and speaking		✔		✔			2
Mathematical/numerical		✔		✔	✔		3
Bilingual/Multilingual				✔			1
Advanced skills							
Critical thinking	✔		✔		✔	✔	4
Reflective thinking	✔	✔	✔				3
Planning		✔					1
Creativity and innovation	✔		✔	✔		✔	4
Analytical thinking						✔	1
Decision making	✔			✔			2
Learning		✔		✔		✔	3
Collaboration/teamwork	✔	✔	✔	✔	✔	✔	6
Problem-solving		✔		✔	✔	✔	4
Conflict solving		✔					1
Communication	✔	✔		✔	✔	✔	5
Risk awareness and risk management		✔		✔			2
Digital/technological	✔	✔		✔	✔	✔	5
Resourcefulness	✔	✔					2
Attitudes/values							
Responsibility	✔	✔	✔	✔			4
Entrepreneurship	✔			✔			2
Flexibility/adaptability	✔	✔		✔	✔	✔	5
Initiative/self-motivation	✔	✔	✔	✔	✔		5
Openness/tolerance	✔		✔	✔	✔		4
Confidence/self-efficacy			✔		✔		2
Optimism			✔				1
Trust			✔				1
Energy			✔				1
Perseverance/persistence	✔		✔		✔		3
Executive		✔					1
Resilience			✔			✔	2
Self-awareness and self-Control	✔	✔	✔				3
Empathy/sympathy	✔	✔	✔	✔	✔		5
Civic involvement	✔			✔			2
Ethical/moral		✔		✔			2
Intercultural/cultural	✔	✔	✔	✔	✔		5
National identity	✔			✔			2
Environment protection	✔			✔			2

Note. *N*, Number of frameworks that mentioned the skill.

By adapting the curricula of cultivating student transversal skills to be used in the labor market, higher education institutes can prepare their students for changes during the transition to work, transformations in workplaces, and different working conditions (37).

Educationists have claimed that to foster students' transversal skills development, reconfiguration and reform are needed in higher education institutions, including (1) a shift of curriculum goals from results-oriented to competences-oriented, (2) an evolution toward constructivist teaching/learning

practice (e.g., learning based on projects, problem-based learning, and cooperative learning), (3) new assessment procedures and criteria integrating students' transversal skills attainment, and (4) permanent cooperation with the labor market (38).

In line with the suggestions above, researchers and educators have aimed to integrate transversal skills training into university curricula. For example, Rosa and colleagues (39) developed a guide for integrating transversal skills (interpersonal skills, creative and critical thinking, socioemotional competence, learning to learn, and citizen-oriented skills) training into the health and social care studies curriculum. Watson and Burr (40) proposed guidelines on incorporating the development of related transversal skills in medical school curricula. They identified 12 skills relevant to medical training and suggested that different skills might be given different priorities due to the specific university curriculum, career stage, or the student's future career. In addition, transversal skills training programs/interventions have also been developed in the university environment. For example, Larraz and colleagues (41) launched a cooperative learning program among those who majored in teaching. The result showed that the program promoted students' transversal skills, such as negotiation, leadership, teamwork, reflection, and ethical commitment.

Transferable skills

As mentioned above, transferable skills are very similar to transversal skills on the conceptual level. Transversal skills usually refer to generic skills that can be applied in various jobs, specialties, and fields. In contrast, transferable skills emphasize the "transferable" nature of skills, which usually means that students acquire transversal skills in a particular situation and then apply it to other situations, including work and non-work contexts. As mentioned above, several theoretical constructs of transversal skills have been established by some influential international organizations, including UNESCO, WEF, EU, and OECD (42). In fact, most transversal skills and transferable skills overlap. Besides, transferable skills can be seen from the key competencies defined by OECD (43) and the 21st century student outcomes defined by the "Partnership for 21st Century Learning (P21)" (44). The 2013 Asia-Pacific Education Research Institutes Network (ERI-Net) Phase 1 Regional Synthesis Report noted that "each economy would clarify and use their own definition of transferable competencies under each area in their research and applications" (45).

In a study entitled "Perceptions of Adolescents, Teachers and Parents of Life Skills Education and Life Skills in High School Students in Hong Kong" (46), researchers highlighted the importance of transferable skills in young people. The paper incorporates four studies, including a longitudinal study of high school students (N = 3328+) and three cross-sectional studies based on students (N = 2427), teachers (N = 568) and parents (N = 431) (46). The four studies revealed that different parties involved, especially teachers and parents, believed the education of life skills (with transferable skills being a significant component) in the formal curriculum is insufficient. Stakeholders perceived that Hong Kong students needed to be more adequate in terms of youth life skills and moral development education, reflecting Hong Kong schools' weakness in developing students' soft skills. In addition, research on Hong Kong students' perception of transferable skills showed that more than half sample students (54.2%) think learning transferable skills are essential (47). Most students reported that they were willing to develop transferable skills because such skills were regarded as constructive for their future careers (47). Besides, students indicated that they were looking forward to a more protean and boundaryless career rather than being an architect throughout their life, and the transferable skills acquired can be used in other areas (47). In short, there is a need to nurture transferable skills in students. This need is strong in view of the over-emphasis on academic excellence and social inequality.

The importance of transferable skills has been recognized by universities in Hong Kong. And universities have integrated them into the formal curriculum, which takes three main forms. First, embedding experiential learning procedures into major course syllabuses, including groupworks, team reports, field trip projects, and so forth. Service Learning is a pedagogy through which students

learn through providing service to the needy in the community. For example, PolyU pioneered the Service-Learning program in Hong Kong. Many students from different disciplines (such as STEM, Education, Healthcare, and Child and Adolescent Development) participate in Service-Learning projects in Hong Kong and offshore (e.g., the Chinese mainland and overseas). Second, general education programs may include subjects covering transferable skills such as innovation, communication skills, and teamwork. Third, universities hold many co-curricular activities, including forums and global learning projects. Experiential learning and achievement transcript from the Education University of Hong Kong, for instance, can attract students to participate in these kinds of activities and perform as a proof of students' qualification certificate that facilitate their employment.

Universities need student-centered education (48), which can help to promote the development of transferable skills in university students. Experiential learning is among the widely adopted strategies for nurturing transferable skills. In the Experiential Learning Model proposed by Kolb, a student goes through four stages as a cycle during experimental learning: 1) have an experience, 2) reflect on experience, 3) form knowledge from experience, and 4) test learned knowledge (49). In the future, universities need to take more steps to apply transferable skills practically. For example, students can be encouraged to participate in group discussion and exploration with confidence in a networked classroom marked by creative, flexible and functional classroom space (e.g., group desks and rolling chairs) (50). Furthermore, various elective courses and extracurricular activities facilitating transferable skills development can be offered.

Multiple intelligences

When defining intelligence, many refer to our language proficiency, innate cognitive ability to learn, and ability to memorize information. However, as our engagement in real life is also essential, the ability to adapt to the environment is also important (51). As such, Gardner (52) defined intelligence as our learnt capability that help to solve problems in our lifespan. With reference to the multiple intelligence (MI) theory, Gardner proposed that intelligence has many dimensions which are equally important. These include logic-mathematical, linguistic, visual-spatial, musical-rhyme, bodily-kinesthetic, interpersonal and intrapersonal dimensions.

Whilst linguistic intelligence is our perceptiveness to written vocabulary like orders of words, logic-mathematical intelligence is our perceptiveness to patterns and relations between numbers. With reference to the MI theory, the public strongly emphasizes linguistic and logic-mathematical intelligence, particularly teachers. Aziz et al. (53) suggested that verbal and written vocabulary positively relates to communication and reasoning skills. Hence, intelligence tests are predominantly adopted for measuring people's intelligence and prediction of their further success. Yet the validity of measuring intelligence with intelligence tests are condemned, due to its neglect of the sociocultural backgrounds, especially for those who are non-native English speakers and learners. Besides, life success cannot be solely depending on our linguistic and logic-mathematical intelligence, because intelligence comes in many forms and its development takes place throughout our lifetime (52).

Visual-spatial intelligence is our geometrical capability to visualize non-verbal or wordy information (52). It is useful for subjects that required students to create mental mapping and comparisons between items and objects. While geometrical ability may differ between individuals, studies imply that virtual reality (VR) can promote learners' learning regardless of their geometrical ability (54). Studies have also shown that individuals can advance their geometrical ability from related practices like puzzles and sport activities (55).

Bodily-kinesthetic intelligence controls motor skills and body movements (52). Studies showed that sports activities could promote our motor skills, body movements and other aspects of life (56). Thus, sports activities are empirically adopted for promoting holistic development in teenagers and to prevent their involvement in teen pregnancy, delinquency, and substance use (57).

Musical-rhyme intelligence is our perceptiveness to non-verbal sounds like tune, pitch, and tone (52). Although it does not dependent on our cognitive

abilities, it can improve our musical ability and cognitive functions, as well as various aspects of life, including creativity, critical thinking, self-expression, intellectual sensitivity, respect, mind openness, and personal, social, and emotional aspects of life (58). Therefore, music education is helpful to students and their developments. However, its importance is not widely recognized. Leung and McPherson (59) showed that Hong Kong children learn musical instruments at a younger age was mainly driven by extrinsic motivation to increase their competitiveness in society. Many were encouraged to drop out of music learning when they grew up because their parents found it unrelated to their academic achievements and accomplishments. Some students of tertiary institutions even reported that their parents constrained their choice of study and practice time (58).

Lastly, self-awareness (intrapersonal intelligence) and awareness of others (interpersonal intelligence) are fundamental in our lifetime (52). By self-evaluation, individuals can analytically alter to accomplish their goals and positively speak their minds and needs. Besides, stand in one's shoes allows us to better understand each other's feeling and emotions, and develop healthy relationships with people without upsetting them. Today, employers cherish their employees' intrapersonal and inter-personal intelligence as it plays vital roles in the social, health and personal domains (60). Employees' interaction and emotional skills can also influence the service recipients in the service sector.

Gardner's MI theory highlights the importance of various forms of intelligence related to positive developmental outcomes in young people. Integrating MI in pedagogy helps students recognize their strengths and weaknesses, and improves their learning experiences, learning motivation and literacy, and specialism in different domains (51). Unfortunately, parents, schools, and educational organizations in Hong Kong remain holding a conventional view of intelligence (i.e., cognitive intelligence) but neglect the benefits which people can gain from non-conventional intelligence in multiple aspects (61). In particular, universities are just starting to look at the talents of young people from different perspectives.

Discussion

Several observations can be highlighted from the conceptual models presented above. First, the above models highlight the importance of looking at a wide range of skills in young people. Besides intellectual or cognitive skills such as literacy and logical reasoning, attention should be paid to non-cognitive skills in multiple domains. For example, regarding the multiple intelligences theory of Sternberg, besides linguistic and logic-mathematical skills, other skills such as sports and arts are also necessary. Including non-cognitive skills in multiple domains is truly "holistic" with recognition of adolescent skills beyond the academic domain.

Second, all these models suggest using multiple criteria to understand adolescent developmental outcomes, particularly their achievements. In the traditional education system, students are ranked mainly based on academic achievement, particularly subjects that rely primarily on intellectual or cognitive skills. This approach ignores adolescent strengths in the non-academic domains. One consequence of this unitary "intellectual" criteria is that it creates much academic stress for young people and undermines their strengths in domains other than academic study.

Third, models incorporating non-cognitive skills are empowering for young people. Obviously, the sole reliance on intellectual performance to define success is very restrictive. Those who are not good academically would easily feel depressed, and their self-esteem would be low. In contrast, focusing on non-cognitive competence (without ignoring intellectual skills) would give young people the hope that "everyone is Number 1" and "everybody is (and can be) a winner." This would remove the unnecessary competition rooted in morbid academic excellence competition. Fourth, including non-cognitive skills in a holistic conception of competencies can promote adolescent well-being. The traditional focus on intellectual abilities creates failures because only one-quarter to one-third of young people can be regarded as academically successful. For the rest, they are "failures" who may have low self-esteem and poor self-image. Hence, the additional focus on non-cognitive abilities would redefine the meaning of "achievement" which would help to promote well-being in young people.

Fifth, the focus on non-cognitive skills is in line with the transformation of the global economy. In the manufacturing economy, the focus is more on 'hard" skills. Basically, employees would strive to "do things right." In contrast, human interaction is essential in the service economy, requiring not just cognitive skills but also non-cognitive skills such as empathy, care about the service recipients and moral character. It can be argued that the sole emphasis on hard skills and intellectual abilities cannot totally fit the service economy, which requires creativity, care about different stakeholders and integrity in service provision. We focus on "doing the right things" under the service economy.

Sixth, adopting conceptual models on non-cognitive skills requires different pedagogies and assessment methods. In subjects focusing on intellectual skills, the traditional method emphasizes didactic teaching, with students learning the "correct" knowledge passively. In contrast, teaching non-cognitive skills would benefit from experiential learning pedagogies through which students can learn knowledge and skills through their own experience. Similarly, assessment strategies differ for subjects focusing on cognitive and non-cognitive competencies. While teachers primarily use examinations and tests to test cognitive competencies, other forms of assessment, such as reflections and projects, would form the basis of assessment for non-cognitive skills.

Finally, some studies show that non-cognitive skills are essential for youth development and can be nurtured. Regarding youth development, different developmental assets form the basis for youth thriving. Soft skills can be regarded as developmental assets shaping adolescent development. Practically speaking, there are programs showing that soft skills development can help to promote adolescent well-being. For example, regarding social-emotional learning (SEL) programs, several meta-analytic studies showed that SEL programs could promote the development of participants who have joined the programs (62).

What is the relevance of the above observations to education, particularly higher education in Hong Kong? There are several points we should consider. First, although Hong Kong culture is a fusion of Western and Chinese cultures, the subtle influence of traditional Chinese culture is still very strong. In particular, Hong Kong is still under the shadow of the "civil service examination" practice in traditional Chinese culture, which can enable a person to climb up the social ladder. Such an examination-oriented culture can be shown by the huge number of tutorial centers emphasizing intellectual skills in Hong Kong. According to Shek and Siu (63), an examination-driven education system is a risk factor for youth development in Hong Kong. Obviously, how to change this culture by paying more attention to non-cognitive skills in the development of young people is an important issue to be considered by educators in the higher education sector.

Second, under the examination-oriented education system, students commonly learn passively with the dominance of didactic teaching. Students commonly learn through rote memorization with little involvement in experiential learning activities. Regarding assessment, the focus is on knowledge acquisition with little room for creative thinking. Besides, the focus on soft skills could be stronger in an examination-oriented education system because good grades from examinations commonly define academic success. In short, the dominant teaching and learning culture in Hong Kong is not favorable for pedagogies in teaching and learning soft skills. Suppose we promote soft skills development in young people through the formal curriculum. In that case, teachers must undergo training to broaden their mindset, and policy changes should be made.

Third, soft skills do not occupy an important position in parental expectations. In traditional Chinese culture, parents expected their children to "study well" (intellectual skills) instead of developing other non-intellectual skills. Shek and Chan (64) examined parental expectations about the attributes of an ideal child. Their findings showed that parents regarded academic excellence, obedience, and proper behavior as critical attributes of an ideal child. Fortunately, with a change in time, a recent study showed that parents also regarded life skills development in their children as important. However, they also commented that such skills are not adequately covered in the curriculum (46). Other studies also showed that high school students perceived that life skills were not adequately covered in the formal curriculum (65).

Fourth, in the higher education reform carried out in Hong Kong in the past decade, the higher education structure was changed from a three-year curriculum to a four-year one. For the extra year, it is expected that the focus should be put on General Education instead of the Major subjects. However, although there is an increase in the number of General Education subjects, such studies still focus much on intellectual skills instead of soft skills. Fortunately, there has been an increase in subjects on leadership and mental health in General Education subjects. However, as such initiatives are specific to individual universities, there is a need to consider the possibility of offering such subjects in a universal manner.

Fifth, one significant development in education reform is the growing attention paid to Service-Learning. This pedagogy links academic study to service. In Service-Learning subjects, students can learn many soft skills, including problem-solving, creativity, teamwork, communication, and leadership skills. Besides, Service-Learning highlights the importance of reflection in the learning and serving processes. Studies have shown that students displayed positive changes in their soft skills after taking Service-Learning subjects (66). Hence, it can be argued that Service Learning is a promising approach to promoting soft skills in university students.

Sixth, under the education reform in Hong Kong, there are growing initiatives to recognize non-academic skills. For example, students with special merits, such as community service and sports talents, can be nominated by principals to gain admission to universities on a highly competitive basis. Recently, the Government has launched the Student-Athlete Learning Support and Admission Scheme (SALSA Scheme) to provide personalized support for outstanding Hong Kong athletes studying in public universities in Hong Kong. In the long run, it would be desirable to admit students with strong non-cognitive skills (e.g., leadership, musical talents, etc.) to recognize achievement in non-academic domains.

Finally, we need a paradigm shift in formulating desired graduate attributes and institutional outcomes in higher education. Instead of strongly focusing on intellectual abilities, higher education educators should revisit soft skills as indicators of institutional learning outcomes and desired graduate attributes. With specific reference to Hong Kong, which strongly emphasizes academic excellence in students, we must re-think holistic development and the role of soft skills in students.

In conclusion, voices are arguing for the importance of non-cognitive skills on top of cognitive skills. By adopting this approach, we are attending to the whole-person development of university students. Regarding higher education in Hong Kong, it is still under the legacy of the "civil service examination" tradition in the Chinese culture, with a strong focus on intellectual skills and examination results. Under the higher education reform in Hong Kong in the past decade, there is growing recognition of the importance of soft skills. However, there is still much room for improvement.

Acknowledgments

The preparation of this paper is financially supported by Chow Tai Fook Charity Foundation and Keswick Foundation as well as the Research Matching Fund of the Research Grants Council for this project (1.54.xx.52UK).

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Submitted: February 20, 2023. *Revised:* March 05,2023. *Accepted:* March 15, 2023.