Taiwan Health Promoting Schools
Case Studies of Student Engagement







HPA
Health Promotion Administration,
Ministry of Health and Welfare

Preface

The health-promoting schools (HPS) program is an important international health policy promoted by the World Health Organization (WHO). Through the promotion of HPS, it aims to enhance the health and well-being of children and young people. In 2002, Health Promotion Administration, the Ministry of Health and Welfare (formerly the Department of Health, Executive Yuan) and the Ministry of Education, Taiwan have signed the "Joint Declaration on the Promotion of HPS program" to collaborate in promoting the HPS policy, in the expectation that every school will become a health-promoting school (HPS).

Since the promotion of HPS program in Taiwan in 2002, there has been continuous progress in implementing strategies for HPS, ranging from policy advocacy, counseling support networks, evidence-based action research programs to HPS international accreditation. These efforts have effectively implemented the six major areas of HPS strategy. The WHO and UNESCO in 2021 issued the latest global standards for HPS, which proposed eight more up-to-date HPS standards. These emphasize the infusion of policies and resources at the governmental level as well as whole-school-oriented management and the involvement of all school members at the school level. To align with global standards, Health Promotion Administration, the Ministry of Health and Welfare, and the Ministry of Education began revising the existing HPS program strategy, thus advocating for Taiwan HPS 3.0. and emphasizing the importance of a whole-school approach and the involvement of all school members.

Health is not simply an accessory to academic achievement but should be considered an equally important value. As members of the school community and civil society, every student should take responsibility for their own health. In view of this, Health Promotion Administration, the Ministry of Health and Welfare has commissioned the team of Health Promoting Schools International Network Center (HPSINC) to solicit case studies of student engagement, covering students ranging from primary schools, secondary school, high school to universities to compile the book titled " Taiwan Health Promoting Schools: Case Studies of Student Engagement ".

This book provides seven case studies of student engagement, each of which includes background, strategies for student engagement, highlights of the case's achievements, and implications to provide reference for practitioners in the field of HPS when they implement HPS programs. It is hoped that every student will recognize the importance of individual agency in school setting and actively engage in it.

Director General

Health Promotion Administration
Ministry of Health and Welfare, Taiwan



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Introduction

(1) Why is it necessary to invest in health-promoting schools (HPS)?





In 2021, the World Health Organization (WHO) and the United Nations Educational, Scientific, and Cultural Organization (UNESCO) put forward a vision of "**Making every school a health-promoting school**" (WHO, 2021a).

Schools are crucial settings for education, health, and well-being, where students learn knowledge, attitudes, behaviors, skills, and experiences to gain the fundamental competencies of becoming a healthy citizen. The organizational capacity of a school can link government and community resources to work together to promote healthy lives for students, thereby enhancing overall educational and health outcomes.



In 2021, the WHO and UNESCO outlined four dimensions that highlight the importance of investing in health-promoting schools (HPS) (WHO, 2021b)

Eduaction

- To prevent and mitigate negative impact of health crises (e.g. COVID-19) on education.
- To improve school enrolment, academic performance and educational achievements.
- To improve equality in education achievements.

Government

- To decrease the burden of diseases in children and adolescents.
- To increase workforce capacity, social capital and social cohesion.
- To fulfill national commitments to equitable health and education and gender equality.

Health and well-being

- To reduce health risk factors affecting the school community.
- To reduce inequities in student`s health and well-being.
- To establish behavioural foundations for lifelong health and well-being.

Community

- To enhance community engagement in school operations.
- To promote healthier communities and community cohesion.
- To foster and sustain multisectoral collaboration for education, health and well-being.



(2) What are the third-generation health promoting schools in Taiwan (Taiwan HPS 3.0)?

Laying a solid foundation, Taiwan has been promoting HPS programs since 2002. However, the WHO and UNESCO in 2021 issued the latest global standards for HPS (as shown in Figure 1) (WHO, 2021a), which proposed eight more up-to-date HPS standards. These emphasize the infusion of policies and resources at the governmental level as well as whole-school-oriented management and the involvement of all school members at the school level. To align with global standards, Health Promotion Administration, the Ministry of Health and Welfare, and the Ministry of Education began revising the existing HPS program strategy, thus advocating for Taiwan HPS 3.0.

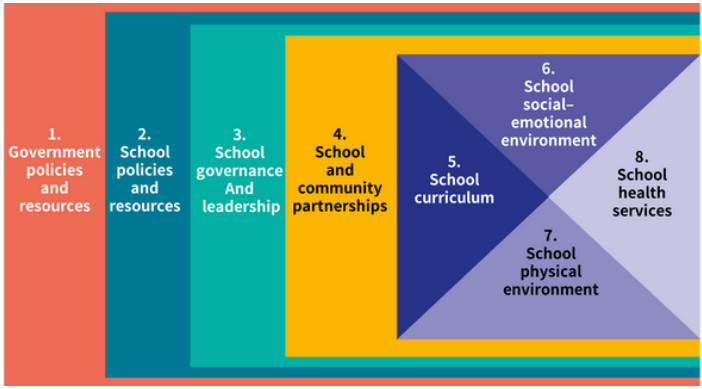

Figure 1: Global standards for health promoting school, WHO, 2021 a

By not only referencing global standards issued by the WHO and UNESCO as well as relevant literature on HPS but also adopting the experience and suggestions of experts from education and health units and school practitioners in Taiwan and abroad, HPS 3.0 standards have been developed based on Taiwan's local characteristics and international development trends, in the hope that HPS policies can be sustainably promoted and implemented.

What are the differences between Taiwan HPS 3.0 and the current HPS initiative?





The HPS initiative in Taiwan was school-centered and promoted health issues through six major areas: HPS policy, school physical environment, school social environment, healthy life skills teaching and action, community relations, and health services.

Based on the new global standards for HPS issued by the WHO and UNESCO, Taiwan HPS 3.0 has proposed eight standards based on the original HPS 2.0 six areas and incorporated key points emphasized by the global standards (Figure 2): government policies and resource allocation, developing school-wide health policies, involvement of all school members, partnership between schools and communities, incorporation of health promotion into school curriculum, building physical environments, creating social-emotional environments, and utilizing health services and resources (Figure 3).

The aim of Taiwan HPS 3.0 is to establish a system that aligns with the well-being and sustainable operation of schools. Encompassing the entire growth and learning journey within the school setting, it is expected that this approach will be implemented from kindergarten to university.

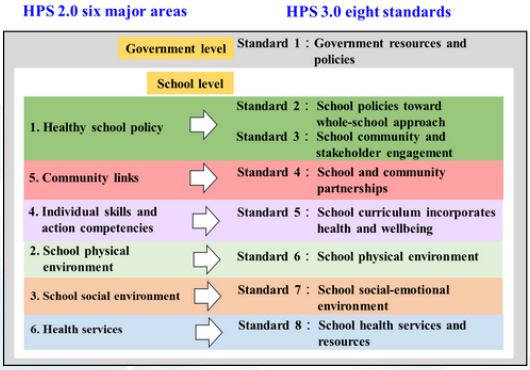

Figure 2: The comparison between HPS 2.0 six major areas and HPS 3.0 eight standards

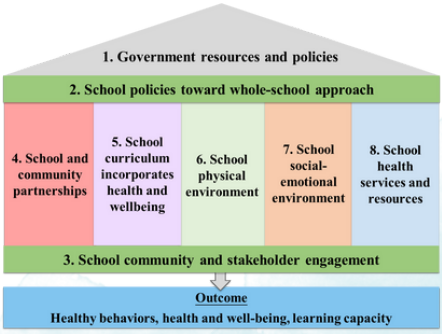

Figure 3: Taiwan HPS 3.0

What are the features of Taiwan HPS 3.0?



With the spirit of sustainable practice, the features of Taiwan HPS 3.0 can be summarized according to the eight standards as follows:

1. Policy and resources infusion at the government level

In the past, the importance of the government level was overlooked. For schools to successfully implement HPS programs, they rely highly on the support of the central and local governments. Furthermore, the willingness of the education and health sectors to work together to develop HPS policies and to commit resources to HPS programs will allow for fruitful inter-departmental coordination and the establishment of a platform for information sharing.

2. Involving all school members at the school level

In the implementation of HPS programs, a school should not rely solely on health promotion staff; instead, it requires the collective effort of all school members. This includes the principal actively leading the school to commit to health promotion, the engagement of all school staff, students independently and actively participating in health promotion activities, parents accompanying their children in school activities to enhance health literacy among family members, and the community partnering with and injecting relevant health resources into the school.



3. Emphasizing staff health literacy and health promotion

In the past, emphasis was placed on the health of students. However, as an integral part of any school, the physical and mental health of staff should also be of primary concern. It is essential to encourage staff to actively engage in health promotion and provide them with relevant training opportunities to enhance their health literacy and skills. This will enable staff to lead by example in practicing healthy behaviors, which will not only increase their own health but also enable them to serve as role models for students. Thus, a significant step towards the whole-school approach to being a HPS can be taken.

4. Utilizing innovative strategies to integrate health issues into formal and informal curriculum to enhance students' health literacy

Health issues should not be confined to health education courses alone. They can also be intertwined with other subjects and integrated into daily life guidance. This allows the curriculum of a school to support the holistic development of students' physical and mental health.

5. Strengthening the social-emotional environment to promote positive mental health among staff and students

The social-emotional environment of a school emphasizes interpersonal relationships among all school members in addition to a sense of belonging and identity that individuals develop. In order to build a safe, inclusive, respectful, and joyful atmosphere in schools, schools should be guided by the positive mental health needs of staff and students as well as utilize creative strategies and establish facilities conducive to health promotion.





(3) The key points of student engagement in health-promoting schools(HPS) programs

The characteristics of Taiwan HPS 3.0 standards highlight the importance of school-wide health policies and the involvement of all school members. In the past, it was commonly believed that students were mere learners and were not asked to participate in the decision-making process regarding school health promotion. However, students are also members of the school community and society and thus should be empowered to contribute to the health and well-being of their schools and communities. As such, it is crucial that students move from passive to active engagement in HPS programs.

After the adoption of the "United Nations Convention on the Rights of the Child" in 1989, the issue of participation by children and adolescents has become a significant concern in many countries (Simovska, 2007). The active participation of children and young people in improving their lives is a human right, as identified by UNICEF (Hart, 1992). Similarly, the Revised European Charter on the Participation of Young People in Local and Regional Life (Council of Europe, 2015) suggests that society itself should also consult young people and that the youth have the right to take part in the decision-making process on any issue that is relevant to their lives. As citizens, every student should take responsibility for their own health. Health is not simply an accessory to academic achievement but should be considered an equally important value. Every student should recognize the importance of individual agency and actively engage in it.

Student participation in HPS programs can come in many forms, such as consultants, collaborators, and leaders. Consultants mean that students are consulted through questionnaires, interviews, and other methods to understand their problems and needs when developing related programs and health policies. Collaborators indicate that while HPS programs are initiated by the school's administrative team, students actively collaborate with the school team. They work together to plan and implement strategies, contributing to the effective execution of the HPS program. Leaders designate that students participate in the decision-making process and significantly influence decisions.

Genuine participation of children and young people is an effective way to improve their health. When children and young people actively collaborate in planning HPS programs, participate in the decision-making process, and engage in the actual implementation, it allows for HPS strategies to be more closely aligned with their needs, increases their participation, strengthens their health competencies, and ultimately improves their health behaviors. Furthermore, their genuine participation in HPS programs fosters the cultivation of health-related competencies, enabling them to take action and responsibility for their own health, their families' health, and the health of the community.

The benefits of youth participation encompass multiple dimensions. Griebler et al. (2017) found that student participation has positive effects on not only individual students but also school organizations, social relationships, staff, and families.

Effects on students

Student motivation, ownership, health-related knowledge, skills and competencies, self-confidence, and self-esteem have been enhanced, and health behaviors have been improved.

Effects on social relationships

Interactions among peers and student-staff relationships have been improved, and peer cooperation has been strengthened.

Effects on school organizations

School culture has been changed. The school becomes more respectful of students by listening to their voices, adopting their ideas, and acting upon their inputs. In addition, student participation has a positive impact on the school's physical environment, health policies, and curriculum.

Effects on staff and families

The positive attitudes of staff and parents toward HPS have been enhanced, which makes them more willing to actively engage in cooperation with the school. Moreover, the active participation and collaboration between students and staff can relieve the workload of the staff.

Genuine participation of children and youth can bring about many benefits. From the perspective of student engagement, this book invites school field practitioners in Taiwan to share how to utilize various strategies to truly implement the concept of student engagement in health promotion in schools and communities. This book provides seven case studies of student engagement, covering students ranging from 7 to 22 years old from elementary schools to universities. Among these case studies, four are elementary schools, junior high schools, and high schools' cases, and three are university cases. Through this preliminary exploration, this book aims to share insights with international experts and practitioners in the field of HPS and provide them with a better understanding of Taiwan's efforts in promoting student participation in HPS.

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Case Studies of Engagement of Children and Young People in Health-Promoting Schools(HPS) in Taiwan

Case 1

The Effects of Students' Participation in Promoted School Oral Health Programs in Rural Areas: A Case Study of Da-Shiang Elementary School in Taiwan

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Background

Da-Shiang elementary school was awarded the Gold Award for International Accreditation of Health Promoting Schools in 2016, demonstrating the school's concern for students' health and well-being.

The school is a small school with 93 students located in the suburb of Putzu City, Chiayi County, Taiwan. There are no dental clinics in the school district. Most parents are of low socio-economic status, and their occupations are mainly agriculture and livestock farming. Approximately 25% of the students come from immigrant families or are raised by their grandparents. Because parents are always busy with work and have no time to take care of their children, resulting in intergenerational care and parenting. Some immigrant families have cultural differences.

The school principal and staff found that students had not yet developed the habit of cleaning their teeth after meals and that parents were unaware of proper hygienic dental behaviour. Many students were not using fluoride toothpaste to clean their teeth after meals and had poor snacking habits between meals. From August 2021 to April 2022, the school vision “Healthy, Happy, Creative Da-Shiang” was adopted to be the core mission of HPS oral health program. Student representatives were one of the key facilitators for the school.

This program targeted 4th to 6th-grade students, with a total of 40 students participating in it. The overall goal of this project was to enhance school children’s oral health behaviours whereby school students play a proactive role in advocating for health-promoting school (HPS) policies and share oral health knowledge and skills learned in school with their families to improve their oral health.



View of school campus

Why should students have participated in the endorsement of health-promoting schools ?

Health is a goal that everyone should pursue, as it is said that health is wealth. Without good health, one's knowledge and wealth are of little value. The primary vision of Da-Shiang Elementary School is "health." We hope that both the teachers and students working, learning, and growing at Da-Shiang Elementary School can lead healthy lives. It is only with good health that they can pursue their dreams and have the opportunity to achieve their life goals.

A health-promoting school (HPS) is a health setting where school students and staff living in the school for learning and work. Each student is the largest group in the school and should be encouraged to participate in various health-promoting programs to enhance healthy campus.

What were the main ways for students to participate ?

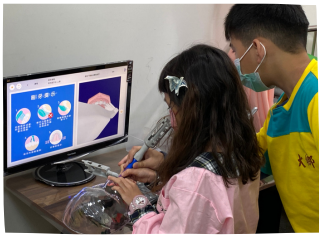
The school included student representatives in the implementation organization (such as working groups or committees) when developing strategies to promote HPS programs.

When the working groups or committees were convened, the administrative team discussed with the students possible ways of student engagement. Student opinions are emphasized from the initial stage of HPS strategy development, in contrast to the past when students only took part in the activities planned by the school.

As advocates and collaborators

1. Students participated in the promotion of the oral health action plan

(1) 5th-6th grade students set up a Health Service Club to act as Oral Health Angels, instructing the lower grades in the use of an AR-based tooth-cleaning simulator, assisting students in cleaning their teeth after lunch, preparing fluoride mouthwash, and compiling records of students' dental cleaning records. As a result of the efforts of the Health Services Club, all students at the school were able to have their teeth cleaned on time, resulting in a 100% cleaning rate.



Senior students guided the junior students in AR simulation to learn dental cleaning

(2) Students learned proper cleaning and flossing methods through health education courses and took the initiative to teach their grandparents how to use it when they returned home to clean their teeth efficiently. School students' grandparents could also learn the correct tooth-cleaning skills from students' influence.



Tooth cleaning after meals - using dental floss

As leaders

2. Students actively engaged in the formulation of health-promoting school policies

(1) Students voted for representatives to join the School Council, with the same rights and responsibilities as other members and staff, to advise and make decisions on health promotion issues.



Students attending school council meetings

(2) Grade 4-6 students participated in the school oral health promotion workgroup. They worked together with school staff to plan the oral health action plan.

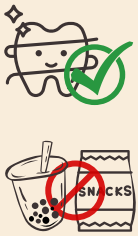
After students participated in the health promotion program, what changes have occurred in student health and the school's environment ?

To understand the changes that have occurred as a result of students' engagement in the oral health promotion program, the school used both qualitative tools (student learning sheets, parent-teacher contact books) and quantitative tools (online surveys) to assess the achieved changes. The results were as follows:

1. Positive changes in student health behaviors and health data

The results of the pre and post-test showed that students' oral health care behaviors, attitudes, and knowledge all improved in the post-test compared to the pre-test, indicating that the intervention program could effectively improve oral health problems among students. Students gradually developed oral health habits and implemented them in their daily lives.

(1) The percentage of students cleaning their teeth with fluoride toothpaste after lunch, brushing teeth before bedtime, flossing at least once a day, and refraining from consuming sugary drinks between meals all improved significantly in the post-test compared to the pre-test, especially the percentage of students not eating snacks between meals improved the most (41.67%).



(2) The whole school's student-parent-teacher engagement in the oral health action program had been effective in implementing healthy oral care habits to whole families.



(3) The data analysis by Bureau of Education in Chiayi County revealed that the fourth-grade initial caries screening rate in 2022 (25.0 %) significantly decreased from the initial caries screening in 2021 (41.38%), and on average was lower than the county and city averages.



2. Parents were more supportive of health-promoting school

The student's active participation in the oral HPS program resulted not only in the development of healthy behaviours among the students, but also in more enthusiastic support from parents for the school. Parental interaction had gradually extended from academic achievement to the health of their children, and parents agreed that health was of prime concern. With the support of parents, the promotion of students' health can be sustained in the long term.

3. Community healthcare resources actively injected to the school

Furthermore, Community healthcare resources had been actively invested to provide comprehensive health services to students. The school management had gained a reputation in the community, with the community dental clinic taking the initiative to reduce registration fees to alleviate the burden of parents.

What were the highlights of the program's achievements ?

Da-Shiang Elementary School involved the senior students to lead the junior students in cleaning their teeth after meals. Peer-to-peer teaching made tooth cleaning more engaging and enjoyable. Students had taken the initiative to recognize that "health" were their own choice and self-responsibility and all students in the school were actively performing the act of cleaning their teeth after school lunch. During the process, their attitude was more proactive than before.

The main challenge in promoting oral health program was that students might not continue to maintain tooth-cleaning behavior when they returned home, which inevitably had a negative impact on their oral health. However, Da-Shiang Elementary School adopted a student-centered approach, involving students playing the role of seeds to teach their family members correct tooth-cleaning skills, thus influencing the oral health of family members. It resulted in parents being more supportive of health promotion, and with the support of the family, students could sustain oral health practices throughout their life journey.

Furthermore, the impact of students' engagement in the oral health program was even greater than in the past. It was evident that, in addition to fostering healthy behaviors in children, it could also influence the teaching staff to be more health-conscious, shifting from passive participation to providing more support to students. Students could receive support from their teachers and classmates at any time, creating a healthy atmosphere and a culture of health promotion on campus.

Implications

Da-Shiang Elementary School successfully engaged students in oral health program not only by building a supportive environment where teachers and students can work together to support students' civic action, but also by establishing a comprehensive reward system. This system allowed children to feel that adopting healthy behaviors was praiseworthy and rewarded with tangible rewards, rather than just being praised for good academic performance. This made health a common goal among students.

Viewing the effectiveness of the oral health program at Da-Shiang Elementary School, we can learn that when students are engaged in the oral health program, they are able to recognize that health as an important issue. The impact extended beyond changing the health of the students themselves; it rippled into their families and communities, strengthening the supportive environments within families and communities. Health-promoting schools inherently connects the three main pillars: school, family, and community. These three aspects form an interactive and interconnected relationship. It is suggested that future school policy makers should value the subjectivity of students, understand their ideas, and allow them to play the role of decision makers in the process of formulating relevant health policies, and empower them to do so, which is believed to have unexpected results.



Case 2

A study on the effectiveness of vision health promotion programs in rural schools: Using Songmei Elementary School as an example

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Background

Songmei Elementary School is located along Provincial Highway 19 in the southernmost part of Puzi City, Chiayi County, making it reachable by most forms of transportation. It is a typical rural community school, with most families in the school district being single-parent or inter-generational. The majority of the population is elderly as most young people make a living in other, larger cities. Most parents in the school district have relatively low levels of education and rely on subsistence farming for a living. As a result, they seldom have the resources to monitor the academic performance of their children; therefore, school-based education is particularly important. Although there is insufficient dissemination of general health information in the community to effectively reshape the lifestyle of its residents, it is still necessary to integrate and utilize both human and physical resources in schools and communities to establish proper health concepts.





View of school campus; Aerial photograph of community

In recent years, the vision or eyesight of students has gradually deteriorated, with the rate of myopia exceeding 30%. This is attributed to the fact that most families lack sufficient knowledge of vision care with few restrictions on students' use of electronic products. It is hoped that by promoting vision care through specialized courses (Strong as Pine Trees, Beautiful as Plum Blossoms) such as canoeing (Rowing Down the River), Cochin pottery courses (Cultivation of the Soul, Relaxing for FUN), and food farming education courses (Songmei Little Gourmet), students will be able to establish correct vision care knowledge, skills, and attitudes. This will assist in the implementation of the "3010" regimen, the aim of which is to encourage students to value the importance of nutritional balance and regular exercise as well as the appropriate use of electronic products to prevent vision deterioration. The project promotion targeted fourth-grade students, with a total of 12 participants.

Overall goals

1. Assist students in developing healthy habits by participating in courses, club activities, and guided leisure.
2. Improve the knowledge, attitudes, and skills of students regarding vision care, allowing them to develop correct lifestyles and habits.
3. Effectively prevent students from developing myopia or preventing myopia from worsening.

Why should students have participated in the endorsement of health-promoting schools ?

The vision of Songmei Elementary School is “health”, “happiness”, “morality”, “responsibility”, and “innovation”. It puts health first and wishes to establish “a health wonderland where children can make their dreams come true” in the hope that children are healthy and confident to explore the world.

However, parents in the school district spend much of their time farming and often neglect the behavior and habits of their children. The parents also often lack relevant health knowledge. As a result, students' vision gradually deteriorates due to the use of electronic products without parental restrictions. Because families are unable to assume an effective supervisory role, good vision care habits cannot be successfully implemented and developed at home. Thus, we conclude that students need to play an active role in their own self-control. Therefore, we employed diverse and interesting methods to engage students, which combined designing curriculum and club activities, formulating school policies, and promoting vision care plans.

What were the main ways for students to participate ?

As consultants

We invited students to participate in the questionnaire survey and used the results as a reference for formulating and revising plans for the following year.

As collaborators

Students were the main body of learning. Through their participation in general, specialized, and extracurricular courses (such as clubs, recess, and winter and summer learning activities), students became collaborators in course design. School courses and clubs were organized in line with students' learning interests to encourage subtle changes in their attitudes toward education and lifestyle.

(1) Students assisted in designing diversified and independent elective courses that offered the opportunity to learn from nature, which provided sustenance for the body, mind, and soul.

Songmei Elementary School provided canoeing, culinary agriculture, and community tour guide courses for students. The school also arranged outdoor clubs such as in-line skating and skateboarding for students on Wednesday

afternoons. When parents did not have plans for their children's free time on weekends, Saturday art classes offered them the opportunity to paint and sketch. Furthermore, a wide variety of club activities for winter and summer vacations were also planned, allowing students the freedom to choose according to their own interests.

(2) Students participated in vision care courses and designed their own menus to promote vision health.

Food health and food nutrition are indispensable for learning. The school set up a special greenhouse farm (farming garden) and a food farming classroom and invited children to plant vegetables beneficial to vision health. This allowed them to learn vegetable farming and produce creative menus tailored towards eye health-friendly foods. In this way, students could experience the entire process from farm to table, not only learning about fruits and vegetables that promote vision health but also tasting them as well.

(3) For daily activities, senior students were invited to serve as "health angels" to assist in vision protection activities and the implementation of vision health campaigns.

Learning to live is a key aspect of life education that is passed down from generation to generation. Through the assistance of "health angels" from senior students, students in middle and lower grades learned from one another and developed good health habits. They followed the example of their seniors, and senior students could learn from each other as well. During the process of leadership, students were educated on implementing good vision habits.

As leaders

Students are always the protagonists of learning and should have the right to participate in planning and formulation. With the school's assistance and guidance, students gradually took back the initiative in learning through authority, decision-making, and further autonomy.

(1) Incorporated student representatives into various meetings and allowed them to actively participate in health policy formulation.

As both leaders and implementers, not only were students members of health policy committees, but they were also chaperons and pioneers of such systems. This allowed the results to be reflected in the student body.

(2) The school vision care promotion group included student representatives, experts, scholars, and parent representatives, which allowed the joint discussion and development of vision care policies.

Health is an important matter that must be accomplished by collective efforts. Only through cooperation can we achieve the best results. The vision care promotion team included experts and parent representatives as well as students, who are invited to participate in the joint development of promotion plans

Students planting their own vegetables



Students riding unicycles



Students taking canoeing classes



Weekend art classes



After students participated in the health promotion program, what changes have occurred in student health and the school's environment ?

The school used the School Vision Care Questionnaire in the Chiayi County 2021 School Year Online Questionnaire System Health Promotion System to conduct pre- and post-test surveys. At the same time, qualitative observations were conducted to understand the effectiveness of vision care promotion after involving school children. The results were as follows:

1. Data on vision health and vision-related behavior showed signs of positive development

After the project was initiated, the implementation of "3010" regular usage of eyes reached 100% in both the pre- and post-tests, with the six measures of vision care awareness (including knowledge, attitude, behavior, the "120" outdoor activity achievement rate, the "less than 1" consumer electronic use accomplishment rate, and the recess clearance rate) all greater than previously measured. In addition, according to the visual examination of students in the 2021 school year, the rate of myopia in the fourth grade was 37.5%, which was 12.5% less compared with the 2020 school year and was lower than the county and city average. The medical re-examination rate for those with vision impairments also reached 100%. These results demonstrate that both appropriate vision care methods and vision health habits have been successfully implemented and internalized.

2. Encouraged parents to actively participate in vision care promotion

Once students actively participated in vision care promotion, they often requested their parents to bring them to related medical institutions for re-examination or correction. Parents gradually learned to value their children's vision and were willing to assist them in improving their vision instead of relying on the education system. As a result, schools and families have established a virtuous and interactive relationship.

3. Strengthened teachers' emphasis on health

With the participation of students, changes have occurred in the mindsets of school staff. Homeroom teachers have gradually realized the importance of "mind clearance after class" to protect the vision of students and actively urge students to leave the classroom during recess.

4. Improved interpersonal relationships

The school designed scheduled and elective courses that were diverse and creative. For example, in the canoeing course, students had to work together to complete canoeing tasks and had opportunities to interact more with school staff. Solid interpersonal relationships were thus established among peers, teachers, and students, which strengthened the self-esteem and confidence of all involved.

What were the highlights of the program's achievements ?

Songmei Elementary School not only improved the vision health of students through mind clearance measures after class, but it also combined the surrounding unique natural environment to plan creative and distinct courses. For example, although the canoeing course "Rowing Down the River" had been planned by the school, students were active learners and were given the opportunity to cooperate with peers and school staff, which cultivated their social skills. Another required course was the Food Farming Education Course, which set up a food farming classroom and garden. Students were immersed in every aspect from planting vegetables, designing creative menus, preparing food, and tasting them. In this way, they not only took the initiative and shared the knowledge about food learned at school with their family but also influenced their ideas. In terms of elective courses and club activities, the school offered diversified courses for students, which they could freely choose from according to their own interests. This reflected their self-determination and autonomy in addition to highlighting the spirit of student participation.

Songmei Elementary School encouraged students to participate in the curriculum, planning a wide variety of courses with local characteristics to foster active learning. Through subtle influences, students were cultivated to put away their electronic devices and engage in outdoor activities. As a result, lifestyle habits beneficial to vision health accumulated.



Implications

The atmosphere of a given environment affects the longevity of promotion. Health work is not a business but a continuous educational undertaking. Songmei Elementary School took students as the main body and promoted the inclusion of vision care issues through various curriculum planning that encouraged the autonomy of students. The results extend to many aspects, including raising the awareness of eye protection among teachers and students. The development of healthy behavior in children and parental support for schools were also more pronounced. Because of student participation, the results achieved were also beneficial to key stakeholders such as teachers and parents. With support from both groups, there have been major improvements. It is clear that a healthy and friendly campus can inspire everyone to identify with health. In the process, teachers and students have realized that health is not merely a slogan but a goal that can be happily achieved.



Case 3

Creating a Smoke-Free Hai-Shan High School

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Background

New Taipei City Hai-Shan High School is a comprehensive school that currently has 3,860 students in 117 junior high school classes and 27 senior high school classes. The school is located in the center of New Taipei City and is conveniently connected by a train station and an MRT station. Students at the school generally come from more affluent and prosperous socio-economic backgrounds.

Students and staff are not specifically concerned about health issues. However, there has been an increase in the number of students smoking in recent years. Survey results have indicated that the students are exposed to a high rate of secondhand smoke from various sources. Furthermore, the students exhibit lower self-efficacy in refusing others' invitations to smoke and have little knowledge of e-cigarettes. The results of the pre-test questionnaire indicated that 0.92% of the population smoke cigarettes; thus, based on a student population of 3,860, it is estimated that approximately 35 students are smokers.

During a recent renovation of the school building, a large number of workers, many of whom smoke, were entering and exiting the school grounds. Concurrently, both teachers and students have expressed concerns about the serious issue of secondhand smoke within the school. As a result, tobacco harm prevention has become the primary focus of the school's health promotion issue.

Overall goals

1. Encourage students to participate in tobacco-free campus activities andemonstrate health promotion actions.
2. Enhance students' knowledge, attitudes, and self-efficacy in rejecting smoking.
3. Reduce the rate of smoking and the harm of secondhand smoke exposure among students.

Why should students have participated in the endorsement of health-promoting schools ?

Teenagers are easily tempted to try cigarettes out of curiosity. An incorrect understanding of the harms of smoking could lead to the development of a habit of smoking, which will have a negative impact on their physical and mental health. Therefore, it is crucial to establish a correct understanding of the dangers of smoking among teenagers.

Hai-Shan High School has been promoting health-promoting school (HPS) programs for many years. In the past, the implementation of strategies for health promotion was mainly planned by the administrative team. However, the school realized that involving students as the main driving force and using a bottom-up approach would be the most effective ways to cultivate the concept of health. Giving students a space to express themselves led to a deeper understanding of the impact of smoking on their lives. This enabled them to truly internalize this knowledge into their thoughts and behaviors and thereby influenced their lifelong health.

What were the main ways for students to participate ?

As advocates

Students took the initiative to advocate for tobacco harm prevention activities on campus, making all teachers and students more aware of the importance of preventing tobacco hazards.

(1) Smoke-free campus Christmas flash mob events

Flash mob events were originally designed by students from the school's dance team as a way to recruit new members. However, when they noticed anti-smoking posters displayed around the school, they asked the school if they could incorporate the theme of tobacco prevention into their recruitment. With the school's approval, students performed during the 15-minute break between classes. During the week from Christmas to New Year's Day, students openly recruited interested peers. During break times, they performed dances, held anti-smoking signs, and chanted slogans. In the festive atmosphere of Christmas and New Year's Day, they created a smoke-free campus environment, capturing the attention of all staff about the issue of tobacco hazards.



Flash mob activity

(2) Anti-smoking LINE stickers

The school often organizes anti-smoking poster competitions, and students winning these contests had a suggestion: "Posting the posters around the campus doesn't reach enough people, and the impact is limited. Why not create the winning posters into LINE stickers?" They felt that turning their artwork into LINE stickers would be a fantastic idea and mentioned, "With LINE stickers, we can send them to family and friends, which will motivate more students to participate in the contest. It's not just about creating a drawing and posting it on a bulletin board." As a result, students actively proposed the idea, and it was highly valued by the school. After multiple discussions between the school and students, and with the necessary funding, the selected works were designed into LINE stickers and approved for listing on the LINE platform after passing LINE's review process.

Furthermore, the school also produced the winning posters into bookmarks, phone stickers, and other merchandise. In this way, it made the students' anti-smoking artworks more practical, and the digitalization of the artworks could multiply the benefits of promoting their work.



LINE sticker design

As leaders

The HPS program targets all school staff and students, and the Health Promotion Committee includes representatives from various school offices, teachers, and parents. In addition, the high school division has a student self-governing organization, and the school invites student representatives to participate as members of the Health Promotion Committee to collectively promote the HPS program. Student representatives are also included in school affairs meetings to participate in the development of tobacco harm prevention policies.

As collaborators

Students collaborated with school staff to engage in both formal and informal tobacco hazards prevention activities on campus.

(1) Healthy campus week during the Christmas month

During the Christmas month, the school set up gatecrashing stations in various corners of the campus. Each station designed questions related to

the harmful effects of smoking, such as the dangers of smoking, secondhand smoke, and thirdhand smoke. Students could earn healthy snacks by answering questions correctly at the stations. The event promoted the concept of "eating healthy for a healthy lifestyle" as an alternative to smoking and tobacco consumption and encouraged the rejection of smoking and its harmful effects. The activity took place within a festive atmosphere, making it a lively and well-received event among staff and students.

(2) "You're the Internet Celebrity" event

Teachers encouraged the students to participate in the "You're the Internet Celebrity" event. The students first came up with a concept from life situations and wrote a script, which was then discussed and revised many times with the Section Chief of Hygiene, a teacher, an instructor, and an acting teacher. Creating a video required professional photography and editing skills. Although the students did not learn the relevant skills, they still successfully produced the video with the assistance of teachers and the enthusiastic participation of the entire class.



'You're the Internet Celebrity' shooting scene

(3) Tobacco refusal curriculum

The school designed an interdisciplinary teaching module called "Creating a Smoke-Free Hai-shan." In this curriculum, students learned about tobacco harm through the creation of mind maps. This systematic approach helped students better understand the harms of smoking and boosted their refusal skills. In addition, through this curriculum, students were better able to make the right decision when they encountered situations where they were asked to smoke or eat betel nut.

After students participated in the health promotion program, what changes have occurred in student health and the school's environment ?

1. Enhancing students' self-efficacy and awareness of tobacco refusal, and reducing the frequency of smoking

According to the post-test assessment, it is evident that students gained a clear understanding of smoking cessation through these activities, leading to an improvement in their smoking refusal self-efficacy and awareness. In addition, almost all of the smoking students attended a 4-hour smoking cessation course and received periodic carbon monoxide follow-up and counseling. The number of students smoking has indeed decreased, and there have been no new students taking up smoking due to the school's continued concern.

2. Successfully creating a smoke-free environment and atmosphere

Students freely conceived activities and participated in them, attracting the attention of their peers and generating widespread discussion and awareness, which enriched the atmosphere of the school's smoke-free environment. In addition, displaying the award-winning works of students in the school environment successfully created a supportive environment.

3. Enhancing teachers' and students' identification of health-promoting schools

Through the demonstration of student autonomy, the tobacco control program was able to spread rapidly throughout the school. Teachers and students went from not being particularly concerned about tobacco prevention to having a consensus across the school, positively affecting their sense of identification with HPS. For instance, during the construction of school buildings, instances of workers smoking were reported proactively by students or teachers, demonstrating their commitment to keeping the campus free from tobacco harm.

What were the highlights of the program's achievements ?

1. Students' bottom-up influence attracted the attention of the entire school

In the past, schools' health promotion programs had been mainly planned by school administrators. However, with the incorporation of student involvement, the tobacco control prevention strategies became more closely aligned with the needs of the students, and students' creativity and their influence among peers attracted more students to participate. This led to a change in the campus atmosphere, making both teachers and students more passionate about the issues surrounding tobacco harm and prevention.

2. Students utilized creative marketing to vitalize issues of tobacco harm and prevention

Traditionally, the campus environment had mostly been enhanced with equipment and hardware, such as posting posters, electronic billboards, or scrolling marquees. However, the involvement of students provided various new creative ideas, such as LINE stickers, flash mob events, and "You're the Internet Celebrity" event, which have successfully created a trend of discussion among students and made them more aware of anti-smoking issues.

For example, the flash mob event was performed during the Christmas and New Year's holidays and lasted for about a week after school hours. Watched by the whole school, the flash mob succeeded in attracting the attention of young people and changing their perception of the dangers of tobacco.

Furthermore, students integrated digital products with anti-smoking campaigns, whether it was "You're the Internet Celebrity" or LINE stickers, both of which were related to digital social media. Applying digital products to health promotion activities, such as sending messages through social media, allows for quicker dissemination of anti-smoking messages.

3. Administrative workload of staff was reduced

With the incorporation of student participation in HPS, the students' self-driven involvement in anti-smoking activities, self-planning, and the coordination of all parties involved helped to alleviate the workload of the school's administrative staff.

Implications

Youth participation not only enhanced their autonomy but more importantly made them more aware of the harmful effects of tobacco, leading to the increased awareness of health issues and changes in their health behavior.

Both the LINE sticker and flash mob events were creative ideas that were fed back to the school after the students received anti-smoking concepts. From the development to the execution of the activities, the students were enthusiastically involved, and the influence of their peers was able to deepen their understanding of the harmful effects of smoking.

Taken together, the power of the students' participation brings many benefits, not only in changing tobacco harm perceptions and smoking behavior but also in successfully creating a smoke-free atmosphere in the school. This enhances cohesion among all members of the school community and increases a sense of identification with HPS. The value of health has been naturally internalized in the hearts of every member of the school. Therefore, when promoting any health issues in the future, achieving success will indeed be more efficient and effective.



Case 4

Health Promoting School Campus Health Anchors Campaign Promotes Students' Engagement, Health Literacy and Behaviours in Taiwan

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Background

In Taiwan, students faced several health challenges. For example, students' physical examination results indicated that about one-third of students were overweight or obese; over two-thirds of students were myopic; one-third of students had dental caries. Taiwan officially launched Health Promoting School (HPS) program in 2002. The Ministry of Education and Ministry of Health and Welfare worked to provide the financial resources and technical support for local governments and schools to adopt an HPS approach. In 2008, the Ministry of Education asked all primary and middle schools to implement an HPS approach, and schools began to initiate HPS programs in that year.

Students' engagement is key for HPS implementation, thus the HPS Campus Health Anchors Campaign was launched since 2017 to promote students' engagement in school health initiatives and facilitate HPS implementation. The HPS support network and Campus Health Anchors Campaign were conducted by the National Taiwan Normal University (NTNU) and commissioned by the Ministry of Education, Taiwan. Each year, the Ministry of Education invites schools to participate in the HPS Campus Health Anchor Campaign, encouraging students and teachers to

discuss and create creative short video to advocate health concepts and demonstrate the promotion of HPS. The number of participant schools increased from 33 in 2017, 81 in 2018, 148 in 2019 to 142 in 2020, and drop to 119 in 2021 and 90 in 2022 due to COVID-19 pandemic. Overall, from 2017 to 2022, a total of 613 schools (330 elementary schools, 164 junior high schools, and 119 high schools) participated in the HPS Campus Health Anchor Campaign.

At each participant school, students and teachers collaborated on co-creating a video to report students', teachers' and parents' perspectives regarding students' health problems, health needs and school strategies. The videos were uploaded to the YouTube and school website to advocate students' health needs and disseminate schools' effective health promotion strategies. Each year the Campus Health Anchors awards were reported by many national newspapers.

Overall goals

In order to encourage schools to actively implement the HPS program, develop school-based health promotion distinctive activities, and align with the competency-based approach of the 2019 new curriculum, efforts were made to strengthen the school-based health promotion practices and work based on the three dimensions of "voluntary," "interaction," and "common good." In order to enhance the application of evidence-based supportive environment strategies for health promotion, it combines strategies of "student participation," "life skills," "parental involvement," and "community alliance. The HPS Campus Health Anchors Campaign was specially organized to show and promote the achievements of HPS in various counties and cities, aiming to achieve the purpose of exemplary learning and experience sharing. Furthermore, through the HPS Campus Health Anchors Campaign, schools foster a health-supportive environment by involving families and the community to enhance health literacy, health behaviors, physical and mental well-being of students, teachers, and parents.

Why should students have participated in the endorsement of health-promoting schools ?

The United Nations Convention on the Rights of the Child (CRC) emphasizes the rights of children to express their opinions, receive education, and maintain health. The United Nations International Children's Emergency Fund (UNICEF) released the "Engaged and Heard! Guideline on Adolescent Participation and Civic Engagement" in 2020, stated the responsibility of governments to create a supportive environment that enables children and adolescents to express their opinions on policies related to them. Teachers, parents, and all sectors of the community are also responsible for listening to and valuing the opinions of children and adolescents, providing them with influence in policy decisions. Adolescent participation and empowerment contribute to enhancing their communication, problem-solving, and life skills, leading them to become healthy, resilient, and engaged citizens (UNICEF, 2020). Literature review shows that student involvement in school health promotion activities can enhance their health knowledge, motivation to engage, positive attitudes, life skills, healthy behaviors, and development. This involvement positively impacts school health policies, atmosphere, culture, supportive environments, as well as school social environments, improving teacher-student relationships and connections (Griebler et al., 2017).

What were the main ways for students to participate ?

The HPS Campus Health Anchors Campaign involves students acting as anchors, utilizing an interview format to create feature reports on HPS Program. By using diverse and lively audio-visual materials, the video documents the progress and outcomes of health promotion activities, highlighting the school-based characteristics and unique features of HPS. The HPS Campus Health Anchors Campaign aims to empower adolescents

to enhance their advocacy skills for health. Through the engagement of students, it deepens their understanding of school health issues, and enables them collaboratively explore the causes and develop feasible strategies.

Teachers encouraged students to participate in the the HPS Campus Health Anchors Campaign, which allowed students to become anchors to report on school health news, student health issues, and school's response strategies. Participant students interviewed with their school principal, students, parents, teachers, school nurses, and community health professionals to understand their perspectives regarding students' health problems, determinants, and strategies. Students' health issues included physical activity, healthy eating, oral health, vision health, mental health, tobacco prevention, sexual health, and correct medication. Teachers also guided students to discuss, co-create the video and report students' health problems, health needs, school strategies, and HPS implementation.

Campus Health Anchors participant students commonly had different roles and tasks to engage in the campaign. For example, some students were involved in school's health policy committee meeting to express their views, while some students were trained as journalists to interview and communicate with school members (i.e., students, teachers, school principal, school nurses, nutritionists), parents, and community health professionals (i.e., dentists, ophthalmologists, pharmacists) to collect their opinions regarding strategies to improve students' health problems (i.e., dental caries, myopia, obesity). Some students were trained as reporters to organize the information and to write the stories regarding the interview journeys and their school's health initiatives, while some students were trained as campus anchors to report students' health problems and effective school strategies. Some students acted as YouTube influencers to advocate health and to increase students', teachers' and parents' awareness and understanding regarding students' health needs and evidence-based strategies. Students uploaded the video to the YouTube and school websites to disseminate the

information regarding students' health problems, schools' strategies, health promotion activities, school-parent-community collaboration, and HPS implementation efforts.

The level of students' participation varied among different schools and varied across primary, middle, and high schools. Primary schools commonly had better HPS implementation than middle and high schools, thus more primary school students participated in the HPS Campus Health Anchors Campaign and health activities.



After students participated in the health promotion program, what changes have occurred in student health and the school's environment ?

The HPS Campus Health Anchors Campaign is an inclusive platform for discussion and co-creation across students, teachers, parents, and community members. The campaign encouraged students to cooperate with other peers, to discuss ideas with teachers, to plan project, and to implement the interventions, while the process promoted youth inclusion and leadership in decision making.

By using student engagement and empowerment advocacy approach, this campaign enhances students' life skills and provided valuable contributions to empower students and teachers to advocate health and advance HPS implementation. During the past six years, about 743 school health videos uploaded in the YouTube to present students' voices regarding students' health needs and school strategies. The impacts of this campaign included empowering students' capability to advocate health and to promote engagement in HPS implementation, enhancing students', teachers', and parents' awareness and commitment on promoting students' health and wellbeing. Each year many national newspapers reported the HPS implementation efforts in award schools.

The project was evaluated through annual national survey and conducted by the National Taiwan Normal University (NTNU), and the results showed that student participation enhances their health literacy and health behaviors.

(1) Participant students reported that the campaign let them have more opportunities to understand students' health issues, enhance health knowledge and skills, and felt more confident to advocate students' health needs and strategies.



(2) Participant teachers reported that the campaign strengthened Intersectoral collaboration for HPS implementation and enhanced students', teachers', and parents' awareness and commitment to improve health literacy and health behaviours.

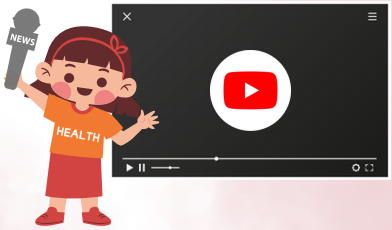


(3) The HPS national survey results showed that students' participation in health curriculum and activities significantly enhances students' health literacy, health behaviors, and well-being.



What were the highlights of the program's achievements ?

The HPS Campus Health Anchors Campaign is a program that empowers youth to enhance their capacity for health engagement and health advocacy. Both teachers and students work together to explore school health issues and causes, collectively develop feasible strategies, integrate community and family resources, extending from the school to fostering healthy families and communities, thereby creating a supportive health environment together.



This campaign deepens students' and teachers' understanding of HPS. Throughout their participation, health is no longer a rigid topic but a topic close to the daily life, enhancing students' health literacy and skills, such as data collection, conducting surveys, interviews, communication, analysis and advocacy. Participant teachers reported that students learned team work and communication skills during the video co-creation and continued to advocate health. Participant teachers also reported that this campaign advanced teachers' understanding and HPS implementation and continued to refine strategies.

The Campus Health Anchors videos uploaded on YouTube and school Facebook had positive impacts on increasing dialogues and facilitating discussion among students, teachers, and parents to promote HPS implementation. The Campus Health Anchors videos and dialogues served as a catalyst for students in discussions with teachers, parents and community health professionals to promote health and advance HPS collective actions and commitments.

Implications

The project's implementation revealed that less schools from rural areas participated in this campaign. Local education departments could provide more funding and resources for schools to facilitate HPS implementation and encourage students participating in the HPS Campus Health Anchors Campaign. Additionally, elementary school students need schools to provide more platforms for dialogue, in aspects such as creating videos, discussing student health issues, and conducting interviews with students, teachers, parents, and community health professionals regarding strategies to improve student health issues.

Children as social actors were emphasized by the United Nations Convention on the Rights of Children. HPS Campus Health Anchors Campaign is an annual innovative video co-creation contest to promote

students' engagement in HPS, advocate health, enhance students' health literacy and health behaviors. This campaign using youth voice strategy to empower and engage students in HPS implementation and health advocate, while the Campus Health Anchors videos uploaded in the YouTube and School websites had greater impacts on increasing students', teachers' and parents' awareness and commitment to implement HPS strategies and promote students' health and wellbeing.

Engaging students in this campaign and HPS implementation help students become passionate about health and wellness and model healthy behaviours for other students. Students' voices provided a pathway to increase involvement in HPS implementation, strengthen school-community connections, and improve health and wellbeing. The process and effects of this campaign to empower students to advocate health and engage in HPS are in line with the UN Sustainable Development Goals(SDGs) to achieve health, wellbeing and equity.



Reference

- Griebler U., Rojatz D., Simovska V., Forster R. （2017） Effects of student participation in school health promotion: a systematic review. Health promotion international, 32（2）,195–206. doi: 10.1093/heapro/dat090.
- UNIFEF （2020） ENGAGED AND HEARD! Guidelines on Adolescent Participation and Civic Engagement. Retrieved from UNIFEF https://www.unicef.org/media/73296/file/ADAP-Guidelines-for-Participation.pdf

Links to awarded school videos

- **Campus health anchors award videos**

- **Campus health anchors awards 2021**

Shuiyuan Elementary School, Hsinchu City

Guangming Elementary School, Hsinchu County

Fuxing Middle School, Tainan City

Beitou Elementary School, Taipei City

Dazhu Elementary School, Changhua County

- **Campus Health Anchors Awards 2020**

Shijou Elementary School, Miaoli County

Shidong Elementary school, Taipei City

Annan Middle School, Tainan City

Case 5

Preliminary Study of a Smoke-free Campus Ambassador Program at a University: Case Study

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Background

According to a survey conducted by the Health Promotion Administration, the Ministry of Health and Welfare, Taiwan, the smoking rate among teenagers over the age of 18 has been steadily increasing over the years. Young people can quickly develop harmful smoking habits, leading to various health risks. In addition, tobacco is often an entry substance to other drugs for students during their college years, making it crucial to continue promoting smoke-free campuses.

In this case study, a university was selected as the intervention site, and a total of 31 university student volunteers were recruited to serve as anti-smoking ambassadors to promote a smoke-free campus program. The unique geographic location of the university fosters strong connections among students and allows for the rapid dissemination of activities via the student body. The university also has a well-established history of promoting tobacco hazards prevention through its healthcare volunteers. The tobacco hazards prevention measures and working groups are well-organized, and the university maintains strong relationships with the community and government agencies, with ongoing interactions in various fields. This high level of collaboration enhances the feasibility of promoting tobacco control initiatives.

The smoke-free campus ambassadors were actively involved in the entire program. They assisted in training new members, planned and implemented tobacco hazards prevention activities, rotated patrolling the campus and conducting anti-smoking inspections, and promoted the dangers of tobacco on multiple social media platforms. In collaboration with these ambassadors, other students proposed feasible anti-smoking strategies and smoking cessation solutions to foster a smoke-free environment. Over the course of the 7-month program, these well-trained ambassadors leveraged their peer influence to increase awareness and participation in the anti-smoking campus program among students.

Overall goals

1. Increase students' willingness to actively engage in anti-smoking activities.
2. Strengthen the connection between the university and the community.
3. Raise awareness and efforts of tobacco hazards prevention among faculty and staff.
4. Enhance the practices and leadership abilities of the smoke-free campus ambassadors in the anti-smoking program.



Why should students have participated in the endorsement of health-promoting schools ?

Smoking has always been a serious issue among young people. To make students truly identify with the harms of smoking, change their mentality and behaviors, and take a proactive role in recognizing the dangers of smoking to their health, it is crucial for them to genuinely realize their responsibility for their own health. This was also a reason why the program involved college students to act as the key drivers of tobacco control.

The project invited students to serve as anti-smoking ambassadors and encouraged them to collectively plan and design diverse activities. Peer influence played a significant role in increasing students' willingness to participate, which allowed the concept of smoke-free campuses to be implemented throughout every corner of the campus. Furthermore, with the youthful energy and creativity of student volunteers, the scope of tobacco control activities extended into the community and thus strengthened the connection between it and the university. This contributed to the continuous and close interactions between both parties.

What were the main ways for students to participate ?

This program collaborated with student ambassadors to implement the smoke-free campus program. This was achieved primarily by engaging these ambassadors as leaders and collaborators in planning anti-smoking activities, conducting on-campus cigarette butt inspections, and managing social media platforms. The collaboration included the following:

1. Serving as volunteers at the physical and mental health center

In response to the COVID-19 pandemic, the school's Physical and Mental Health Center recruited volunteers through online interviews, mainly recruiting lower-grade students. These volunteers became key anti-smoking ambassadors for tobacco control, as they had more time to continuously promote tobacco hazards prevention and other health-related policies.

2. Training anti-smoking ambassadors

The training for anti-smoking ambassadors incorporated the model of deliberative democracy (World Café), bringing the concept of deliberative democracy in the context of tobacco control on campus. In this training, instructors provided a clear overview of the tobacco control regulations and enforcement within the county and the school. This equipped the anti-smoking ambassadors with sufficient knowledge about tobacco control before they engaged in roundtable discussions. During the discussions, ambassadors not only raised questions regarding the current regulations and operations of tobacco control within the county and the school but also brainstormed solutions and designed creative tobacco control strategies.



3. Actively conducting anti-smoking activities on campus and in the community

(1) Day and night tobacco control patrols on campus

The anti-smoking ambassadors worked in teams of 2-3 members, taking shifts to patrol the campus during the day and night to check if people were smoking. They provided immediate and firm but gentle guidance to those found smoking and recorded video evidence to be submitted to the Department of Health for enforcement. Daytime tobacco harm patrols were conducted daily by 1-2 teams, each consisting of 2 members. For the nighttime patrols, safety factors were considered; thus, patrols involved 3 members at a time and occurred 2-4 nights per week.

(2) Physical tobacco harm activity - "Collect a Bucket of Cigarettes" anti-smoking competition

The "Collect a Bucket of Cigarettes" activity was initiated by the anti-smoking ambassadors and involved the participation of the entire school community, including faculty, staff, and students, who could form teams. The ambassadors assisted in matching the community to participate and organizing the event. The execution process presented a significant challenge for the anti-smoking ambassadors. Through a series of phone calls and matchmaking with community participants, they needed to withstand pressure and address various inquiries and doubts.

(3) Online tobacco harm activity – were all tourist spots in OO County/City smoke-free?

According to Article 18 of the ”Tobacco Hazards Prevention Act“, smoking is prohibited in schools. With the promotion of tobacco hazards prevention on campus, most students are aware that the campus is a smoke-free area. In addition to campuses, there are many other places where smoking is prohibited. This activity aimed to familiarize students with non-smoking areas beyond the campus, thus enhancing their awareness of the ”Tobacco Hazards Prevention Act“. Students were invited to explore places outside the campus that were also designated as smoke-free zones. Showcasing these smoke-free areas, they took photos and shared them on social media pages. This activity increased the visibility of the smoke-free program on social media platforms and contributed to the creation of a smoke-free campus environment.

After students participated in the health promotion program, what changes have occurred in student health and the school's environment ?

1. Enhancing awareness of smoke-free campuses among youth and teachers

This anti-smoking program has effectively increased awareness and engagement among students and staff regarding smoke-free campuses through peer influence, competitive events, and advocacy on social media platforms. The program conducted pre- and post-tests using surveys to evaluate the impact on students' and staff's knowledge and skills relating to the hazards of smoking.

A total of 533 questionnaires were collected from students and staff. In the domain of smoking awareness, the pre-test scores averaged 74.6, while the post-test scores significantly improved, averaging 91.8. This demonstrates that smoke-free campus ambassadors successfully elevated awareness of tobacco hazards through engaging and interesting activities.

2. Strengthening the connection between the university and the surrounding community

(1) By establishing connections with available resources in the local community, campus ambassadors assisted their peers in making decisions to resist the temptation of smoking. For example, schools invited relevant local community organizations to work together to create a tobacco-free environment on campus and in the community, invited community medical facilities to provide health checkups and abnormality tracking services for students, and provided students with smoking cessation and medical clinic slots at nearby medical facilities.



(2) Community members recognized the school's efforts in promoting a smoke-free campus and shared with one another how to maintain a smoke-free environment. Students, community members, and anti-smoking ambassadors participating in the program all had different learnings and takeaways from the experience.



3. Building a smoke-free campus and creating a non-smoking atmosphere

This program employed various strategies to create a smoke-free campus, including the following:

(1) Integrating relevant resources inside and outside the school to set up a Health Promotion School Education Team.

(2) Encouraging students to establish anti-smoking, anti-alcohol, and anti-betel nut alliances.

(3) Establishing an information-sharing space for the entire school community to discuss health-related matters, including the creation of a Health Center Facebook and Instagram to share and promote smoke-free campus activities, health education information, and smoking cessation experiences.

(4) Collaborating with the Department of Health and health clinics to conduct campus tobacco control campaigns.

(5) Implementing campus tobacco hazards inspections to assess changes in the number of smokers and violations reported.

(6) Offering smoking cessation counseling services to assist smokers in quitting or reducing tobacco use.

What were the highlights of the program's achievements ?

1. Although the program had been initiated by the school, teachers and staff gave students the freedom to develop and implement the program. The design of the event incorporated the creative ideas of students, which made the event livelier and more innovative.
   By collaborating with various academic departments and student clubs as well as utilizing the power of social media tools such as Facebook and Instagram business accounts, the promotion was very effective and enhanced the popularity of the event among students, thus addressing the previous problems of low engagement and limited attraction.

2. The tobacco control volunteer inspection team was trained to conduct campus tobacco harm guidance inspections, reinforced inspection efforts, and collaborated with community resources and the local health department to enhance detection work. Over the years, there has been a significant decrease in the number of reports of smoking violations on campus and the number of people sanctioned by the Department of Health, all of which indicate successful results.

3. The university has a long history of promoting tobacco control and has a strong relationship with the community. This program leveraged the creativity and energy of young people and combined the strengths of the community as well as the Department of Health. Harnessing the influence of the university, its effects have gradually expanded to the community.

Implications

By making students the main focus of the program and having the school play a guiding and bridging role, the program allowed students the freedom to plan and participate in activities on a voluntary basis. This student-led approach injected creativity and vibrancy into the activities through the power of students. Student-organized activities are more likely to encourage other students to participate. In this process, the students not only enhanced their planning and leadership skills but also deepened their understanding of tobacco control, leading to the comprehensive implementation of tobacco control on campus.

The benefits of student involvement extend far beyond improving student health and health capabilities. They also have the potential to impact community health. The term "no smoking" is no longer just a slogan but a practice that can be genuinely integrated into daily life on campus and in the community.



Case 6

Training Fitness Instructors to Guide Prevention and Delay of Disability Through Promoting Service Learning Participation in Response to an Aging Society With Low Birth Rates

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Background

Taiwanese society is facing the dual challenges of a low and declining birthrate as well as an impending super-aged society, which have considerably impacted politics, the economy, culture, and education. Effectively promoting intergenerational education and intergenerational integration as well as reducing generational barriers and cultivating the core qualities of "spontaneity, interaction, and concord" are critical contemporary issues. This project aims to enhance human capital and the social participation of the elderly, prevent foreseeable problems, promote healthy aging, reduce the risk of frailty and disability among the elderly, and achieve four United Nations Sustainable Development Goals (SDGs), namely health and well-being (SDG 3), quality education (SDG 4), sustainable urban and rural areas (SDG 11), and diverse partnerships (SDG 17).

In 2021, the National Health Department launched a new teacher training (both in-person and online) course named "Fitness Coaches to Prevent and Delay Disability" in response to COVID-19. Following the recommendations of the International Sports Association, the Health Promotion Administration, the Ministry of Health and Welfare, Taiwan, in conjunction with Chinese Culture University, Taipei, Taiwan, and the non-governmental organization Tai Chi

Synergy Association, Taiwan, recruited people of different ages (including children, teenagers, young people, middle-aged people, and the elderly) to advocate the concept of “learning through service, intergenerational learning, and intergenerational integration." Allowing students to participate in a community health promotion program for the elderly enables students to understand the contents of Integrated Care for Older People (ICOPE) and the fitness recommendations of the EU Vitality and Physical Training Manual for the Elderly (Vivifrail). Here, students learn that risk assessment is divided into four categories: A, B, C, and D from frail to healthy.

Encouraging the community to participate in the integration of learning, combining the use of practical off-site learning and planning with the local characteristics of health promotion programs, jointly participating in teacher training services, and accompanying the elderly in independent fitness empowered the elderly to successfully improve their own health and physical fitness and achieve the goal of intergenerational integration.

Overall goals

In this study, we expanded the concepts of "learning through services, off-site training, integration of learning and application, and integration of practice" from the perspective of students, using the Systems Thinking model and Design Thinking method to target the health promotion of the elderly. Students aimed to achieve the following to expand the cross-domain growth of students and their learning capabilities:

1. Cultivated a new generation of high-quality talents and created a cross-domain inclusive platform

By constructing a cross-domain learning environment, young people were provided opportunities to integrate cross-domain service learning with on-site practice as well as participate in teacher training and community development through the elderly health promotion service plan. This fulfilled the co-educational needs of the young and the elderly.

2. Understood the community, increased AI innovation, and achieved social influence

Students aimed to understand the situation of each community and used AI to increase innovation, including big data, wearable devices, somatosensory analysis, visual recognition, and edge computing. We aimed to integrate these into cross-generational living to achieve common prosperity.

Why should students have participated in the implementation of health promotion in both schools and communities ?

Family, school, and communities are where children and adolescents live and learn. They are also important places for students to develop healthy behaviors and establish a solid foundation for their well-being. The interpersonal relationships of preschool/school-age children and adolescents have expanded from families to schools and communities. Creating a safe and favorable environment so that children and teenagers can learn healthily and happily is one of the main objectives of this plan.

Health and education affect individuals, communities, and even the economy. Cooperation between schools and communities is the focus of integrating health and education. School children and the elderly do not merely require care regarding the management of chronic diseases; sufficient care also emphasizes being case-centered, empowering patients to actively participate in healthcare activities and learn skills such as problem-solving, disease control, and life adjustment. Therefore, through the cooperation of schools and community organizations, we employed campus health centers, community health creation centers, community nutrition centers, elderly health promotion stations, and community medical groups as a common service network to build a comprehensive healthcare system suitable for both the elderly and children.

Taiwan became an aged society in 2018 and is expected to become a super-aged society in 2026. This project targeted health promotion for the elderly and adopted the spirit of student participation in health promotion. The actual participation of students not only fostered their health-related skills but also enabled them to take action for community health and contribute to society. Furthermore, community health promotion infused creativity and vitality to boost its development.

What were the main ways for students to participate ?

As assistants in community health assessments and services

1. Students participated in assessments and services by joining consensus meetings, community focus group interviews, and on-site feasibility surveys.

(1) Gaining insight into local needs to meet diverse development requirements

In order to respond to different community health promotion plans, students learned during internships how to conduct diversified services and cooperate with local resources from different cultural backgrounds.

(2) Practical expansion of health service capacity

In order to mitigate the problems caused by a declining birthrate and an aging population, students applied various information technology tools to both in-person and online training courses as well as developed the tools and resources to provide services in rural areas for instructors and the public.

(3) Fully implementing service diversion

In response to the overall capacity of human, material, and medical resources in each community, students explored health and well-being (SDG 3), quality education (SDG 4), sustainable urban and rural areas (SDG 11), diverse partnerships (SDG 17), and other concepts of sustainable development

architecture. Here, they learned to combine local corporate environmental, social, and governance (ESG) resources, considered the physical and mental function of each individual, assessed potential risks, and applied the grading method of Vivifrail for inventory management and integrating community resources. By adopting “resource diversion, service grading, and organizational classification” (Figure 4), they learned how to implement such services in resource-poor community areas and achieved the goal of health promotion.

(4) Improving service organization and faculty quality

In order to reduce management risks and improve the service quality of health promotion, students and local instructors were educated on the importance of program quality, teacher quality, and community service quality. We will gradually introduce a service quality management and examination to assist all support staff in fulfilling their responsibilities.

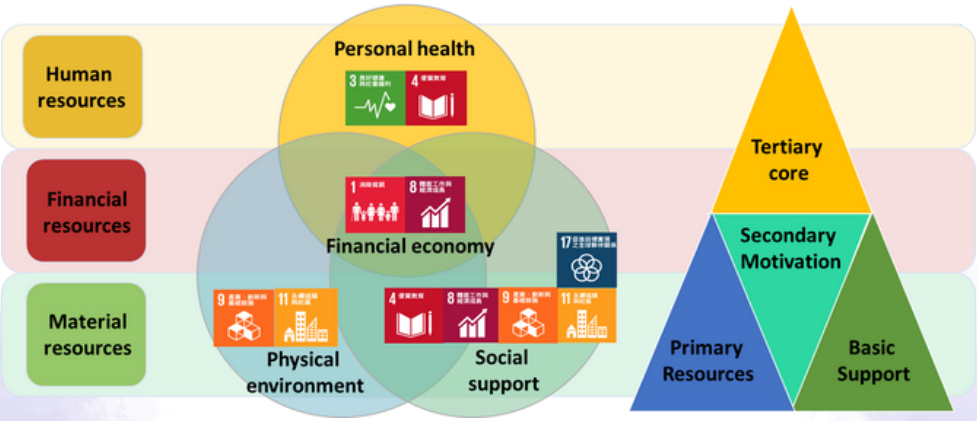


Figure 4：Resource diversion, service grading, and organizational classification

As a promoter of community health programs

1. Preschool and school-age children: Based on local needs, students coordinated community health promotion programs and employed local resources (including schools at all levels from kindergarten to high school) to plan intergenerational education, implement parent-child interactive games and fitness, and design activities in order to encourage intergenerational interaction to improve their health.

2. Adolescents and young adults: They integrated the University's Social Responsibility program to carry out multiple services and cross-domain resource cooperations, including the following:

(1) Participation in the training service team

In order to improve the implementation of the teacher training program "Fitness Instructors to Prevent and Delay Disability", teenagers and young people jointly organized a service team to assist in both in-person and online training courses on teacher empowerment.

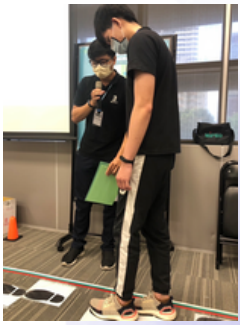
(2) Direct participation in teacher training

In order to expand the scope of fitness instructors for the health promotion of the elderly, young people who met the qualification requirements directly participated in either in-person or online teacher enhancement training and assessments.



June 2021 /HPA/ prevention and delay of disability fitness instructor training /the students in the black T shirt demonstrate and explain

May 2021 /HPA/prevention and delay of disability fitness instructor training/medical side/students (black T shirt)





June 2021 /HPA/prevention and delay of disability fitness instructor training/community side/students (black T shirt)



May 2019/Feng Yuan Hospital/ technology integration: smart carry bag/students (blue T shirt) responsible for leading elderly for 12 weeks



August 2023 / Taoyuan Pingzhen district location / technology integration: AI Coach / 12 weeks of intergenerational technology inclusion / children exercise with the elderly



August 2022/NTNU Hsinchu Branch/Hsinchu dementia center technology integration: smart carry bag/students (black T shirt) responsible for leading elderly for 12 weeks

As advocates and leaders

1. Adolescents and young people jointly advocated and participated in decision-making through the "Fitness Instructors to Prevent and Delay Disability" teacher training program.

(1) Joint initiative and participation in decision-making

When holding a community committee meeting, teenagers and young people were invited to jointly advocate and participate in decision-making meetings.

(2) Self-organized technology teams

Teenagers and young people were empowered to organize and plan service structures on their own as well as participate in the planning of in-person and online teacher empowerment training, community sports, and health promotion courses and decided which AI technology tools to use.

What changes have occurred in the health of students and communities after their participation ?

After a series of promotions, this program evaluated students (learning assessments are conducted by teachers for various campus courses at all levels) and the elderly (using ICOPE and Vivifrail for front and rear evaluations). The following impacts were identified:

1. Constructing a new interaction model between generations

This project provided the younger generation with the opportunity to learn life experiences from the elderly through three aspects: service learning, intergenerational learning, and intergenerational integration. Moreover, seniors learned through the process of working together with the younger generation. New skills were used to enhance communication and dialogue between different generations, which instilled a new perspective on life in both parties.

Preschool and school-age children jointly participated in the intergenerational education program planned by young adults. By arranging learning spaces for intergenerational learning as well as planning courses and activities, there were more opportunities for people from different generations to prosper. Children and the elderly could take care of each other as well as study, eat, and explore the world through courses held in schools or community centers, such as painting art and sports skills. Participation in these activities also allowed them to accumulate common health experiences. Although the elders were not as active physically, the relative innocence and patience of the schoolchildren fostered close companionship. In this way, children were no longer alienated from the elderly and became close to or even developed further respect for

them. In addition, through the interaction and dialogue of ICOPE and Vivifrail, young people could better understand the health risks of the elderly. This effectively improved communication skills, assisted young people in empathizing with the elderly, and further enhanced their willingness to provide health services.

2. Influencing the community and creating intergenerational harmony

By analyzing different intergenerational programs and practices in various communities, we aimed to incorporate local elements to foster an inclusive attitude in the community and create a mutual circle of life, which directly affected surrounding areas. As a service base, people in the community (of all ages) regard the "integration of old and young" as a resource and blessing in the community.

Furthermore, this plan combined medical resources including hospital professionals, community medical groups, and other supporting staff, connecting local clinics, pharmacies, and long-term care units as well as enabling the matching of external professional resources with local resources. In this way, schools and communities have become a stronghold for community symbiosis.

3. Promoting the emotional development of young people and cultivating core competencies of leadership and creativity

Through four major promotion methods (affection, participation and activation, collaborative interaction, and independent action), we encouraged young people to explore, experience, practice, and innovate with community partners and community elders to promote the development of affection, cultivate leadership, and create core literacy. These included six aspects: cognitive function, mobility function, malnutrition, visual impairment, hearing impairment, depression, and the ability to execute and solve problems.



What were the highlights of the program's achievements ?

1. Integration of learning and application, and embodying mutual learning between young and old

Connections were established between young people and the elderly through strengthening community awareness, and young people were encouraged to participate in public affairs while promoting intergenerational education and health revitalization. Participating in the intergenerational planning and designing of "Preventing and delaying disability and frailty in the elderly" as well as incorporating AI Coach smart technology deepened the connection between different generations, fitness instructors, and community participation.

2. Turning community assistants into promoters of Long-term Care Plan 2.0

Young people directly participated in elderly health promotion through the University's Social Responsibility practice program. Young people also participated in teacher training if they met the qualifications, completed fitness instructor training, and then took an assessment to become a community fitness instructor.

3. Regarding the pandemic as an opportunity for AI Coach

We used systems thinking and design thinking to subvert the traditional health education model. The younger generation learned to use high-performance edge computing chips and vision systems to combine fitness and technology. With the assistance of AI algorithms, we provided real-time and accurate technical analysis to sports participants, the general public, children, the elderly, and even the frail and mildly disabled. Through high-performance edge computing, each critical step was made more accurate in real time. This promoted the gradual embodiment of smart technology in health promotion.

Implications

This project was based on the main part of Long-term Care Plan 2.0 from the National Health Service of the Ministry of Health and Welfare, Taiwan, namely the six core values of ICOPE (cognitive function, mobility function, malnutrition, visual impairment, hearing impairment, and depression) and the Vivifrail graded training module (Level A, Level B, Level B+, Level C, Level C+, and Level D). By learning, participating, and pursuing practical endeavors in the community, students used "smart carry-on bag", "smart carry-on box", and "AI Coach" to integrate the issues of preventing and delaying disability. In this way, students advocated the qualitative, quantitative, and "risk control" of fitness design and combined them with the community service of fitness instructors, allowing students to better understand how smart technology should be applied in practical settings and how it is reflected in various situations. Therefore, the needs of different generations were met more accurately and readily and were more diversified. As health has been finally achieved, the vision of a smart, healthy, and age-friendly city can be realized.

Faced with the comprehensive impacts and risks brought about by global extreme climate, epidemics, economic hardships, famine, and war, students should employ systems thinking and design thinking to examine the 17 SDG-related indicators from the UN and realize the vision of One World One Health.



More information

- Physical vitality training for the elderly

- Physical vitality training for the elderly: level A (disabled)

- Physical vitality training for the elderly: level D (healthy)

- Physical vitality training for the elderly: introduction to decomposed movements

- Physical vitality training for the elderly: elderly health assessment for professionals

- Miaoli County government promotes the "older adults exercise class" to encourage the elderly to move / integration of generations



Case 7

Effects of Design Thinking Intergenerational Service Learning Model (DTISLM) on Intergenerational Relationship and Health Behaviors Among College Students in Taiwan

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Background

Taiwan is expected to become a “super-aged society” by 2025. Intergenerational support among young people will be a primary source of caregiving for older adults. However, young people from Taiwan reported more ageist responses toward intergenerational behaviors than those from the United Kingdom (Vauclair et al., 2017). On average, an individual with negative attitudes toward aging lives 7.5 years less than those with a more positive attitude toward aging (Levy & Bavishi, 2018). Both implicit and explicit ageism produced among young generation negatively affect older adults’ physical and mental health.

Currently, learning infrastructure at universities falls behind in addressing ageism and promoting health awareness and behaviour among students. It is critical to address these issues by providing university curriculum integrating design thinking and service learning frameworks to prepare college students developing intergenerational programs from design thinking perspectives to improve ageism and health awareness among younger generations in aging societies.

The project targeted at students from three universities (Tzu Chi University, Chung Shan Medical University, and Meiho University), and one hundred forty-two college students who majored in medicine, laboratory medicine and biotechnology, nursing, physical therapy, social work, child development and family studies, and human development and psychology departments participated in the project. A cross-university research team developed structured ageing-related trainings (i.e., ageing experience, communication and observation skills) to prepare university students for a service-learning component in the course. It included an 18-week university curriculum module, Design Thinking Intergenerational Service Learning Model (DTISLM), integrating design thinking and service learning frameworks to improve ageing stereotypes, health awareness and behaviors among college students.

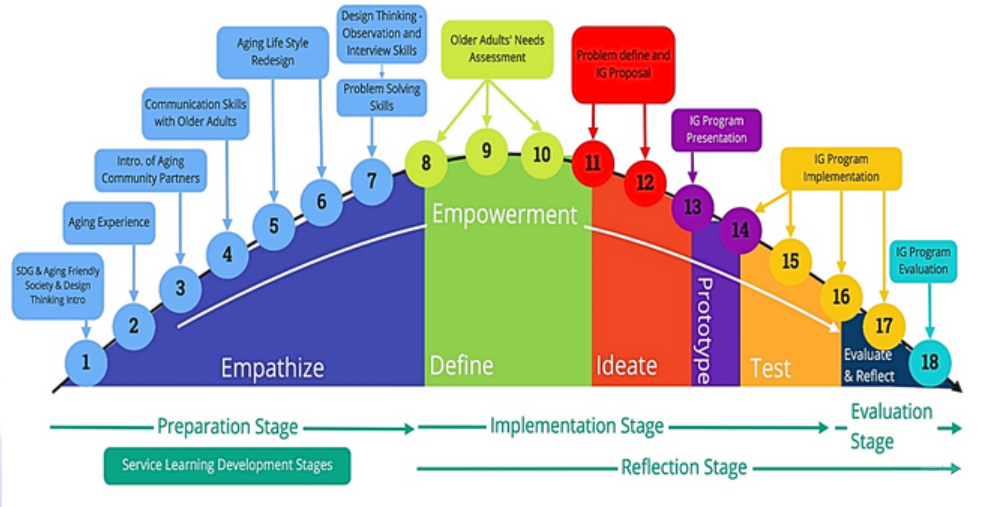


Figure 5：Design Thinking Intergenerational Service Learning Model (DTISLM)

Goals

The goals of DTISLM were to improve ageism and health behaviors among young people to create ageing-friendly society. Objectives were as follows:

1. To promote intergenerational relationship between college students and older adults
2. To improve college students' health awareness and behaviors
3. To improve older adults' stereotypes against young generation through college students' intergenerational programs
4. To improve physical well-being through college students' intergenerational programs

Why did students participate in health-promoting schools?

Over the past years, youth population has developed habits of consuming fried foods and irregular meal patterns, alongside a tendency to consume sugary drinks. Unhealthy lifestyles has led to issues such as abnormal BMI, underweight, overweight, and obesity among college students. Furthermore, sedentary lifestyle resulting from excessive engagement in playing video games and mobile gaming has led to a lack of interaction and communication skills with others. These characteristics have contributed to stereotypes toward older adults among youth population. Therefore, there is a need to improve the intergenerational interaction between adolescents and their parents or older family members.

Emerging adulthood (i.g., adolescents, college students) represent a critical period shaping an individual's health habits. New learning environment, experiences related to campus life, and close interactions with peers can shape both positive and negative lifestyle habits among young people, affecting their short-term and long-term health conditions. However, current higher education curricula at universities lack content that concurrently

improves students' health literacy and ageism. Therefore, this project aimed to develop a Design Thinking Intergenerational Service Learning Model (DTISLM), applying students' engagement to promote health literacy and improve their stereotypical views about older adults and creating an age-friendly society with harmonious intergenerational relationships between young people and older adults.

What were primary approaches that students participated in the project?

First of all, the DTISLM model empowered students through training activities to develop their knowledge and skills of design thinking and apply them to develope intergenerational programs. Second, students, playing roles as observers, conducted interviews with older adults and observed their behaviors at community-based centers. Finally, students worked in groups to identify older adults' needs and developed intergenerational programs to meet their needs. They took the leading roles in implementing intergenerational programs at community-based centers.



Design thinking in-class activities for empowerment

1. Participation in the training for empowerment

Design Thinking Intergenerational Service Learning Model (DTISLM) is an 18-week program. One hundred forty-two college students registering courses received aged-related trainings and lectures about how to apply design thinking to develop intergenerational program for older adults at the community-based centers from week 1 to week 7 for 14 hours (2 hours weekly). To improve students' competence in various fields, weekly training topics included:

(1) introduction to the United Nations sustainable development goal #3 good health and well-being in the context of age-friendly society.
(2) aging simulation activities college students to improve their level of empathy for older adults.
(3) observation and interview skills from design thinking perspective.
(4) communication skills with older adults.
(5) aging lifestyle redesign.
(6) introduction of community partners in the context of long-term care .
(7) problem solving skills for program implementation.



Aging simulation activities in the classroom

2. Observation and interviews with older adults at community-based centers to develop intergenerational programs

To understand older adults' behaviours, health condition, needs and improve their well-being at either physical, mental, or social level, students conducted observations and interviews with older adults at 13 community-based centers partnered with three universities in urban and rural areas across Taiwan. Activities included : 1) reflection on aging simulation activities; 2) on-site observing for older adults at the centers; and 3) interviews with older adults to learn about their health status, chronic disease history, and needs. Each group of students was required to apply knowledge and skills they have acquired in the course in the design thinking process of intergenerational program development. Based on observations and interview results related to health conditions of community older adults, groups of 4 to 6 students discussed feasible solution models and propose a six-hour intergenerational program.

Drawn on design thinking framework, students made analysis based upon the results from on-site observation and interviews with older adults residing in neighborhood. They defined older adults' needs and issues in various aspects from bio-psycho-social perspective. Based on the results of the analysis of the community's situation analysis, the students came up with a variety of solutions, which were characterized by four key features:

- Fall prevention.
- Improving physical strength of older adults who were inactive in participating in activities or with mobility limitations.
- Fostering social interaction between older adults and their peers at community-based centers.
- Improving feelings of psychological loneliness among older adults.

3. Implementation of intergenerational programs at community-based center

Participated students working in groups implemented their proposed intergenerational programs at the community-based centers (totaling 6 hours over 3 weeks; 2 hours per week). They did final presentations to evaluate their program effectiveness in improving older adults' well-being at either physical, mental, or social level. Examples of intergenerational programs conceived by students from three universities are illustrated as follows:

Tzu Chi University in Hualien

The focus of the intergenerational program conducted at Tzu Chi University was to prevent falls among older adults and the content mainly targeted at physical fitness group training and health education for older adults. In order to prevent falls among older adults, the student group at the community center in Shuiyuan Village located in mountain area added floor mats to prevent local older adults of aboriginals from slipping to ensure them move with safety at the center. In addition, student groups at Gancheng community center found out

that exercise activities provided by instructors or volunteers at certain centers were not suitable for older adults with stroke or disability so the participation of this population was low. Hence, students redesigned exercise activities targeted at older adults with disability, arthritis, or wheelchair to promote hand and foot functions. In addition, to improve older adults' hand coordination and memory, one student group developed hooping and brainstorming program to train older adults' hand muscles and memory. Each older adult got one bamboo chopstick and a rubber band and passed down from one to another. In the process of social activities, the answer that matched the theme must be said and the answer cannot be repeated to improve their memory and social engagement with their peers.



Students' applying design thinking skills to identify problems observed at community centers



Tzu Chi University students making life storybooks together with older adults



Tzu Chi University students engaged in the intergenerational activities at Sincheng health center in rural area



Tzu Chi University students leading fitness activities for older adults at Gancheng community center



Chung Shan Medical University in Taichung

The primary focus of the intergenerational program at Chung Shan Medical University focused on matching learning needs between college students and older adults to enhance older adults' self-care awareness, improve their ability to reflect on individual health behaviors, and enhance quality of health education. Chung Shan Medical University changed the mode of students entering the community-based centers, and focused on older adults' life to explore what health or social activities older adults can do in their life. By pairing students with older adults, a group of 5 to 7 students was matched with 2 older adults aged 65 or above. At least two meetings occurred, allowing students to observe and experience the daily routines of older adults in depth. Students focused on actual needs of older adults from the results of interviews and they developed activities or health education programs with modification together with older adults for finalizing the program.

Chung Shan Medical University matched students with the seniors from Taichung City Silver Life Master Association, most of whom were role models of productive aging. Through pair-up, students conducted issue-focused interviews with the active agers.Each group of students asked questions related to health issues, followed by a detailed questioning process with intergenerational interactions between the students and older adults. This process allowed students to gather multi-dimensional information from older adults.



Chung Shan Medical University students engaging in intergenerational health education activities with older adults

A distinct feature of this health educational program enabled students to serve as navigators of aging-related policies and resources, using in-depth interviews and questionnaires to get seniors to reflect on their eating habits, health, transportation, and common scams in their lives. In addition,

the program employed health promotion resources and healthcare information from Health Promotion Administration, Ministry of Health and Welfare, Taiwan to enhance older adults' awareness of personal self-health and balanced nutrition and to increase their understanding of age-friendly transportation safety resources.

Meiho University in Pingtung

The intergenerational program at Meiho University focused on improving dementia, disability , and social participation among older adults. Students organized a series of activities to meet the needs of older adults at community centers located close to Meiho University, including maintenance of physical functions and engagement in social activities. Third and fourth-year students from Department of Social Work utilized group dynamic skills to design indoor activities involving plastic cups, aiming at enhancing hand-eye coordination, flexibility, and memory of older adults to foster their development and growth.

Throughout intergenerational activities, Meiho University provided stimuli for older adults' muscle functions to improve their independency in social participation, leading to a sense of accomplishment and satisfaction and enhancing their quality of life. Simultaneously, this encouraged increased social engagement and cooperation among older adults, fostering positive emotional support and promoting interpersonal interactions.



Meiho University students' intergenerational program using social work group dynamic skills

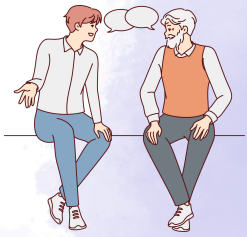
After students participated in health promotion program, what changes happened to students' health and their school's environment?

This project used mixed-methods to evaluate changes in students and older adults after participating in the DTISLM program. Quantitatively, pre-and post-surveys were conducted among all participants. Qualitatively, students were invited to provide after-class reflection notes.

1. Improving intergenerational relationships between college students and older adults

Quantitative results showed that DTISLM model led to participated students' improvements in level of empathy towards older adults, stereotypes against older adults, and intergenerational relationship with older adults. Qualitative reflection notes showed that after participating in the aging simulation activity, the majority of the students understood the challenges of deterioration in various functions physically experienced by older adults. They learned about the physical changes and difficulties during the progress of being aging characterizing physical decline and inconvenience. In addition, the students also found out that many psychological challenges such as frustration and upset feelings came with decline of physical function among older adults. They also reflected on whether students' negative attitudes towards their own parents hurt parental feelings.

Through participating in DTISLM model, students were more confident in getting along with the elders in the future. They learned to be more patient, empathized, and more attentive to older family members' physical and psychological well-being. Some students showed higher level of interests in their future careers in aging or long-term care industry.



2. Improving physical health, emotional competence, and altruism behavior among college students

After participating in the project, students increased their physical activity, emotional competence, and altruism behavior.

3. Effects on older adults

Regarding effects of DTISLM program on older adults, qualitative results provided by participated older adults at three universities were as follows:

(1) Improvement of health awareness among older adults

Some older adults said that they were able to re-examine their eating habits and health status through students' intergenerational activities with reflective questions.

(2) Delaying disabilities and improvement of memory among older adults

Most older adults believed that participation in weekly intergenerational activities led by the students not only delayed physical and cognitive decline but also improved their social engagement with peers at the centers. Group activities designed by students were easy to understand and simple. They were able to use brain for memory exercise.

(3) Improvement of stereotypes against young generation among older adults

The majority of older adults have changed their attitudes towards young people greatly after interacting with students. Their impression about the youth was from the media and newspapers as well as their life experience. Most of the older adults interviewed are residents around the school so they used to negative impressions about young people there. They felt young people generally were hard to communicate with. However, the encounters with DTISLM students changed their impressions about young generation. Some found out that students were friendly and polite and respected older adults.

(4) Improvement of mental health among older adults

Although many NGOs would provide services at the centers, these older adults felt better to have young people chatting with them. Most older adults hoped that students could visit their community centers more often, chat with and accompany them, which would improve community vitality by promoting mental health and happiness among older adults.



(5) Improvement of intergenerational relationship between older adults and their grandchildren

Some older adults would bring what they learned from the students at the community centers back home to teach their grandchildren and improve their relationship with their grandchildren.

(6) Older generation's experience passing down to younger generation

If time permits, most older adults were willing to share their life stories and experiences with the students.

What were the highlights of the program's achievements ?

In Taiwan very few university service-learning or professional courses' teaching objectives address students' health literacy, ageism or stereotypes against the elderly, and the improvement of intergenerational relationship. Based on design thinking approach the DTISLM program incorporated service learning framework with a systematic training program for students to improve their abilities and empower them. To address age-related issues, participated students entered community-based centers to do on-site observation and problem analysis, conducted group discussions about physical and mental conditions of older adults observed on site, and designed customized intergenerational

programs to promote health and well-being among older adults. The DTISLM learning process emphasized student empowerment and enhanced their ability to take leading roles in intergenerational activities rather than being dominated by instructor-oriented advice.

With the characteristic of easy replication the DTISLM model was promoted to Department of Occupational Therapy at National Cheng Kung University and Department of Social Work at Quemoy University in the second year of the program in 2022. It can also be replicated and promoted to long-term care institutions or community-based centers with needs of intergenerational services. Moreover, the DTISLM curriculum provides guidebook for partnership to promote sustainable collaboration models among schools, health centers, and communities.

The qualitative and quantitative data show that the DTISLM model effectively enhanced intergenerational relationships, improved intergenerational stereotypes, and increased health awareness of both generations to create an age-friendly environment. From a long-term perspective, the trained college students can help address issues related to insufficient lecturers, volunteer shortages, and community course contents lack of diversity at the centers.

Implications

This project features that the DTISLM model empowers students to design creative intergenerational programs based on the unique characteristics of each community long-term care center through observation and interviews. Playing the roles as leaders, students implemented intergenerational programs at the community care centers. Students' active engagement is an important factor throughout the DTISLM curriculum. College students' innovative approaches of applying design thinking skills in developing intergenerational activities reshaped "Community Long-Term Care Centers." Throughout this process, college students improve not only their understandings about older

adults, health, and altruistic behavior, but also helps older adults improve their aging process, decline in cognitive functionality, and mental health.

The DTISLM program could serve as a guided model for other universities' service-learning courses or related courses. Not only does the program help promote university social responsibility, but it also educates college students to be global citizens and devote themselves to better well-being of communities.

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