



Health-and-safety-promotion program development for children with intellectual disabilities in inclusive classroom

Sorajja Meesupmun^{a,*}, Chanida Mitranun^{b,†}, Siriparn Sriwanyong^{b,†}

^a Department of Special Education, Faculty of Education, Srinakharinwirot University, Wattana, Bangkok 10110, Thailand

^b Special Education Development Center, Faculty of Education, Srinakharinwirot University, Wattana, Bangkok 10110, Thailand

Article Info

Article history:

Received 29 October 2021

Revised 2 January 2022

Accepted 10 January 2022

Available online 12 October 2022

Keywords:

health and safety,
inclusive classrooms,
intellectual disabilities

Abstract

This research aimed to develop a health-and-safety- promotion program for children with intellectual disabilities in inclusive classrooms. These included processes focused on creating, experimenting with, and improving existing programs. The target group consisted of 8 experts, 2 teachers, one in special education and one in health education, and 6 children with intellectual disabilities who voluntarily participated in the experiment. Children with mild intellectual disabilities are defined as those with an intelligence quotient (IQ) of 50–69 and 8–10 Years Old. The research instruments included a draft program on health and safety promotion for children with intellectual disabilities, recordings of interviews, and health-and-safety promotion program for children with intellectual disabilities in inclusive classrooms, and questionnaires. Data analysis employed content analysis. The statistics used were mean (μ), standard deviation (σ), program efficacy (E_1/E_2), effectiveness index (EI), and content analysis. Our research findings showed program components – namely: (1) objectives; (2) features; (3) the selection of participants; (4) organization of co-teaching activities for station teaching; (5) IEP plans; (6) learning-management plans by adapting the curriculum to the current situation. Therefore, in this program, children learnt about Protecting themselves from COVID-19, PM 2.5, crossing a crosswalk, wearing a helmet, etc. and visual media; (7) assessment; (8) competency assessment; and (9) the program manual. The efficiency of this program received a score of 80/80, which is in line with the criteria. The effectiveness (EI) value was 0.69. The teachers involved stated that the children possessed better learning retention.

© 2022 Kasetsart University.

* Corresponding author.

E-mail address: sorajja2022@gmail.com (S. Meesupmun).

† Co-first authors.

E-mail address: chanidam@g.swu.ac.th (C. Mitranun).

E-mail address: siriparnpop@gmail.com (S. Sriwanyong).

Introduction

Children with mild intellectual disabilities are defined as those with an intelligence quotient (IQ) of 50–69. Their physical development slightly differs from other people, from conception and throughout their life (American Psychiatric Association, 2015; Kosuwan & Viriyangkura, 2017; United States Department of Education, Office of Special Education Programs-OSEP, 2013). As deficiencies in adaptive behavior result in complications in day-to-day living, care for health and safety is a crucial third aspect of adaptive behavior - lack of health promotion and disease prevention on practical skills in daily life. Difficulties include eyesight, hearing, dental health, and nutritional status, and more.

Care for health and safety means everyday attentiveness to one's well-being, physical movements, diet, along with seeing a doctor or getting first aid when necessary, and sex education. This also involves being law-abiding, using seat belts, crossing streets safely, being aware of strangers, seeking help, getting regular physicals and dental checkups, knowing about self-defense, identification of option and must, socializing, and applying one's knowledge to daily life (Kosuwan & Viriyangkura, 2017; Thanaphum, 1999). This corresponds with the Michigan Department of Education's guidelines, Department of Education, Michigan (2018). For example, second-grade students can understand hygiene, the differences among types of restrooms, and how to ask for help. Safety involves discussing exactly what it is, knowing how to reach emergency contacts, identifying fire alarms and fire-safety procedures, vacating a place in an emergency, and calling 191 for help by adapting the curriculum to the current situation. Therefore, in this program, children learn about protecting themselves from COVID-19, PM 2.5, crossing a crosswalk, wearing a helmet, etc. and visual media. (Department of Curriculum and Instruction Development, Ministry of Education., 2008).

More school-age children today suffer from diseases such as dengue fever and influenza, as well as accidents and allergies. Many do not wear helmets while riding a motorcycle; nor do they use a seat belt (The Royal College of Pediatricians of Thailand, Pediatrician Association of Thailand, 2017). The casualty rates from road accidents (Bureau of Non- Communicable Diseases, 2019b) and drownings of children under 15 years of age rank first (Bureau of Non- Communicable Diseases, 2019a). Children with intellectual disabilities fall victim to deceit easily, as they do not understand such

danger. This is why health education is absolutely vital for all children, and especially those with disabilities.

Inclusive classrooms allow students with special needs to join in studying and doing activities with "regular" students, and regular teachers collaborate with special education (Supervisory Unit Department of Education, Bangkok Metropolitan Administration, 2014). In the context of inclusive classrooms under the Bangkok Metropolitan Administration, arranging inclusive classrooms for children with special needs is becoming more common. Health education is one of the subjects taught in such classrooms. Problems corresponding to a study by Nilsukh (2015) have also occurred. In inclusive classrooms within core schools, there are learning-management problems such as revising the general curricula; little preparation of specific courses for students with special needs; and learning activities which are inconsistent with the IEP plans. As psychosocial behaviors were still learners' desirable characteristic according to educational standards, basic education implicated overweight and illness from communicable diseases (Department of Curriculum and Instruction Development, Ministry of Education, 2018).

Studies have suggested that children with intellectual disabilities are able to achieve decent academic results if the learning program is well-designed. What's needed is a systematic learning agenda consisting of clear objectives, features, selection of participants, methods, and assessment. A study conducted by Jeerapornchai (2010) focused on a program to enhance the decision-making skills and self-reliance of second- grade students with intellectual disabilities. The program helped improve their decision-making and ability to live independently, with assistance from the initial stage. All such children should have tailored education plans and the opportunity to join in inclusive classes, along with being offered the necessary services so they can eventually live freely and happily in the community (Densiriaksorn, 2018).

A synthesis of international research from the ERIC database between 2007 and 2017 covered 13 subjects. Studies have suggested that co-teaching is a suitable model for inclusive classrooms. That is to say, special education teachers and regular teachers work together. Also, station teaching is fit for the beginners. Co-teaching improves the academic achievements of children with special needs. (King-Sears et al., 2015; Roberson, 2014; Thompson, 2010; Wilson & Blednick, 2011). This was consistent with a study by Kaipetch (2001). Co-teaching in this study highlighted mathematics achievements and

the attitudes of children with talent in math in classes with a teacher and a co-teacher. This approach has led to higher achievements by students. The best methods for teaching children with intellectual disabilities involve task analysis, direct teaching, health education, teaching by demonstration, role-playing, simulation, and using real-life situations.

Obviously, the health and safety of all children in inclusive classrooms is vital, but many teachers specializing in special-needs education are not adequately informed, so we have focused our research on developing this aspect of education. This emphasis corresponds with education that's geared towards equality and fairness for all children, and helping special-needs children develop the basic skills of self-reliance.

Literature Review

Children with mild intellectual disabilities are an underprivileged group with deficits in learning and difficulty in improving their standard of living when they get older. They are prone to safety risks, so they need help with their daily self-care. The routine use of knowledge they have learned, plus comprehensive care, are thus essential. Optimizing the care of such children requires a focus on their health, hygiene, good socialization, and the best medicine, education, and professional training (American Psychiatric Association, 2015; Kosuwan & Viriyangkura, 2017; United States Department of Education, Office of Special Education Programs-OSEP, 2013).

Health education focuses on safety and other aspects of the body. The health and safety of children with intellectual disabilities consists of: (1) characteristics of good health, (2) symptoms and preventive measures regarding illness and injury, (3) preventing water and land accidents, (4) preventing their exposure to narcotics and nearby hazardous substances, and (5) fire-prevention and fire-escape drills by adapting the curriculum to the current situation. Therefore, in this program, children learn about protecting themselves from COVID-19, PM 2.5, crossing a crosswalk, wearing a helmet, etc. (Department of Curriculum and Instruction Development, Ministry of Education, 2008; Department of Education, Michigan, 2018).

Program means guideline details of learning management enabling the development of learners according to the program objective. The educational program for such children consists of objectives, features, the selection of participants, the methods of organizing

activities, and doing evaluations. Of course, this is applicable to students in general, not just those with disabilities, special talents, or low grades (Chandrasakha, 2015; Kotcharat et al., 2018; Prasertsin, 2020).

The most important element in co-teaching is good and regular communication with one's colleagues. Cooperation requires an essentially positive mindset and should not just be about following the status quo practices (Supervisory Unit, Department of Education, Bangkok Metropolitan Administration, 2014).

The appropriate teaching methods for children with intellectual disabilities and regarding health education include task analysis, direct teaching, teaching by demonstration, teaching by role-playing, teaching by simulation, and teaching by using actual situations. So, the researcher developed a conceptual framework as follows (Kosuwan & Viriyangkura, 2017; Sarayuthpitak, 2015).

Conceptual Framework

The results of Phase 1, subjects in health education and physical education for primary school, program theory, co-teaching, teaching methods appropriate for children with intellectual disabilities, and health education were used to draw up the program. Experiments and improvements were carried out. The final program on health and safety promotion for these children is shown in Figure 1 Conceptual Framework.

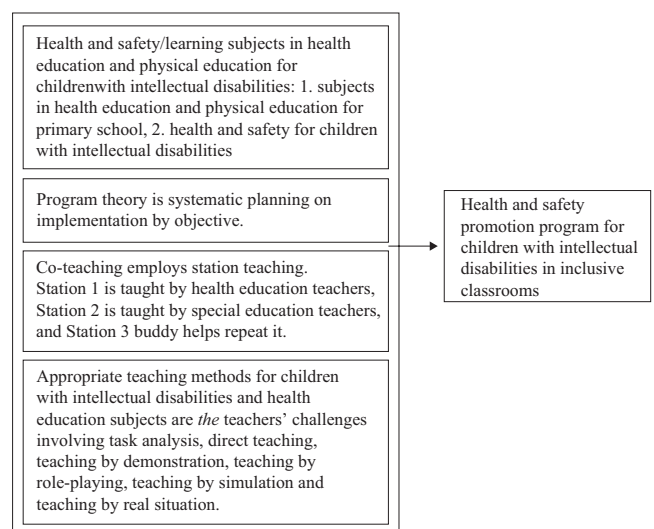


Figure 1 Conceptual Framework

Methodology

This research and development were conducted in three phases.

Phase 1: Study of the problems, needs, and the directions of health-and-safety promotion for children with intellectual disabilities in inclusive classrooms.

The population in this research were 253 special education teachers and health education teachers teaching in grade 2 from 134 schools.

The research instruments were: (1) a questionnaire for teachers to rate actual and expected general conditions to promote health and safety for students with intellectual disabilities in inclusive classrooms; and (2) a structural in-depth interview protocol obtained from 7 experts. There were 4 rating scales and open-ended questions.

Data analysis by statistics used frequency, percentage, average (μ), standard deviation (σ), opinion level, modified priority needs index: PNI modified and content analysis. The interview content was analyzed to obtain a guideline.

The research showed that the current situation to promote health and safety for students with intellectual disabilities in inclusive classrooms was in a low level ($\mu = 2.46$, $\sigma = 0.98$). The problems the teachers encountered to promote health and safety for students with intellectual disabilities in inclusive classrooms was in a high level ($\mu = 3.50$, $\sigma = 0.60$). Regarding to the opinions of the teachers concerning the needs to modify curriculum (PNI Modified = 0.44), it was found that both groups of teachers did not have concrete guidelines to health and safety for students with intellectual disabilities in inclusive classrooms. In addition, the teachers suggested that both groups of teachers should work cooperatively, that the students should have hands-on practice, and that the IEP should include the health and safety plans. According to the expert's opinions, it was found that cooperative interaction or co-teaching, positive communication, open-mindedness, consideration of learning style of students, collaboration with colleagues should be emphasized to increase effective teaching leading to student's good hygienic habits. (Meesupmun et al., 2020).

Phase 2: Created a program on health-and-safety promotion for intellectual disabilities.

Phase 1, contained the objectives, features, process for selecting participants, organization of activities, IEP plans, all 12 learning plans, assessment, competency assessment on health and safety promotion for children with intellectual disabilities in inclusive classrooms, and

program manual on health and safety promotion for children with intellectual disabilities in inclusive classrooms.

Target groups: Eight informants selected from a group of experts created a program on health-and-safety promotion for intellectual disabilities, as follows:

The quality of the draft program was reviewed by the experts. A focus group was set up to consider the draft program by following actions. The researcher submitted a letter issued by the Graduate School to eight informants asking for purposive sampling. Data from their work and experiences were collected in accordance with the specific qualifications for the focus group. A focus group was set up to assess the suitability of this program. A focus group was conducted by the researcher via ZOOM on June 12, 2020, from 9:00 a.m. to 12:00 noon at the Live Conference Center, Department of Education, Bangkok Metropolitan Administration. It included the participants, two note-takers, and one group manager, a total of 11 people. The integrity of the data obtained from inscription needed verification prior to analyzing, summarizing, compiling, and categorizing. Results were prepared for a final draft of the program as per recommendation by the participants in the focus group before being applied to the next target group. Research instruments comprised the draft program. The quality of the instruments was assured by five experts. Content validity was determined by Index of Item-Objective Congruence (IOC) values of 0.60–1.00. Recommendations and feedback were seriously considered before using.

Data analysis was performed by content analysis.

Phase 3: Experiments geared toward improving the program were conducted on the following.

Target groups: Two voluntary grade 2 teachers, one from special education and the other from health education in inclusive classrooms, and 6 children with intellectual disabilities who voluntarily participated in the experiment. Children with mild intellectual disabilities are defined as those with an intelligence quotient (IQ) of 50–69 and 8–10 Years Old in inclusive classrooms

Step 1: Data from Phase 2 were used by the researcher to create a health- and-safety-promotion program for these children.

Step 2: A session to clarify the procedures was held.

Step 3: A health- and-safety-promotion program was experimentally used in schools that volunteered.

Step 4: An assessment of the efficiency and efficacy of the program based on E1/E2 and EI values was carried out.

Step 5: Improvements in the program were pursued.

The following were done, as well: The researcher submitted a letter issued by the Graduate School to school directors asking for cooperation on data collection from special education and health education teachers, parents, and children with intellectual disabilities, in co-teaching schools under the authority of the Bangkok Metropolitan Administration, who had volunteered to use the instruments and tests. The researcher tried out the research instruments with health education teachers twice between July 6, and 17, 2020. The researcher brought the results to create the final research instruments based on the results of the experiment. The researcher had a special education teacher and health education teachers use the instruments ten times and had special education teachers teach with health education teachers twice between July 20 and November 6, 2020. The researcher sent the questionnaires and a letter asking for cooperation to special education teachers and health education teachers between November 9 and 13, 2020. The filled-out questionnaires were fully checked prior to analyzing them. Both copies of questionnaires were filled out by everyone who was asked to.

Research instruments consisted of: (1) The health-and-safety-promotion program; and (2) The questionnaires and their quality were verified in Step 2.

Data analysis by statistics used mean (σ), standard deviation (σ), program efficacy (E_1/E_2), an effectiveness index (EI), and content analysis.

Research Ethics

The dissertation project was synthesized by the researcher for ethics consideration by the Human Research Ethics Committee, Graduate School Srinakharinwirot University, project number SWUEC-G 195/2562E. Upon approval, the researcher protected the rights of the target group, and introduced and explained to the research participants the objectives and procedures. Then, consent was sought and cooperation asked for regarding the data collection. The right to accept or refuse to participate in the research without any consequence was clarified. Information obtained in the research was kept confidential and no harm would be done to the studied target group. The researcher proposed an overall study and used the results for educational purposes only.

Results

Phase 2. According to the expert's opinions, it was found that the classrooms were appropriate in all aspects: (1) Program efficacy was the most appropriate, with a mean of ($\mu = 4.80-5.00$); (2) Learning management plans were the most appropriate, with a mean of ($\mu = 4.80-5.00$); (3) Media were the most appropriate, with a mean of ($\mu = 4.80-5.00$); (4) IEP plans were the most appropriate, with a mean of ($\mu = 4.80-5.00$); (5) The competency assessment was the most appropriate, with a mean of ($\mu = 4.80-5.00$); and (6) The program manual was the most appropriate, with a mean of ($\mu = 4.80-5.00$). Also, most participants from the focus group found the program to be appropriate, but the program's features needed to be fine-tuned by adding clearer details regarding the adjustment of activities. Stage 1: The co-plan: Teachers from special education and health education planned and prepared their lessons together. The roles of special education and health education teachers were precisely adjusted to co-teaching for station teaching to demonstrate the co-instruction stage more clearly. To align with the competency assessment of health and safety for these children, the Individualized Education Plan (IEP) was revised into 12 items in line with the learning-management plans.

Phase 3. Our findings regarding health and safety promotion for these children indicated that the efficacy score on the learning- management plans was 87.34/89.11, surpassing the 80/80 criteria. All six children with intellectual disabilities also demonstrated the ability to learn and perform activities created by their own potential. The index of effectiveness for the competency assessment scores both before and after the implementation of learning-management plans was 0.69. All six children showed signs of progress in their studies. And, teachers' reactions to the program were quite positive regarding all issues, with a mean of $\mu = 4.50$, indicating that the accuracy and completeness of this program bodes well for future use.

Experiments and improvements were carried out, and the final program on health and safety promotion for these children is shown in [Figure 2](#), Health and safety promotion program for children with intellectual disabilities in inclusive classrooms.

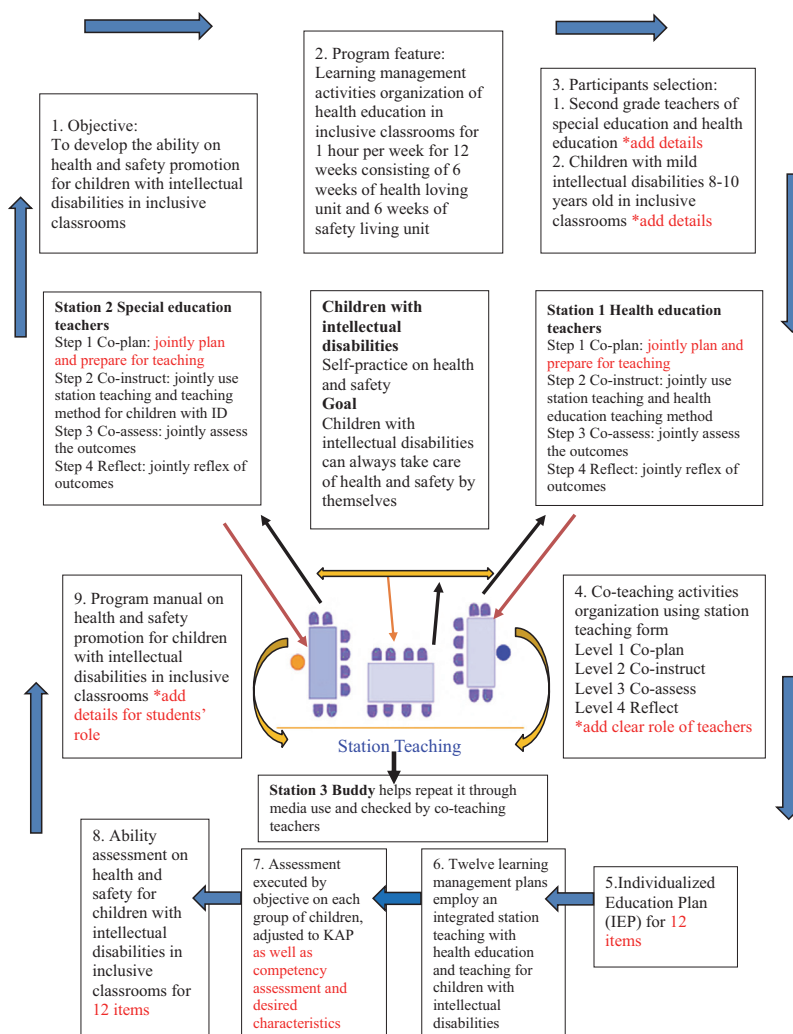


Figure 2 Health and safety promotion program for children with intellectual disabilities in inclusive classrooms

Discussion

Phase 2. The health-and-safety-promotion draft program for these children was demonstrated to be appropriate in most of its aspects. Some interesting points were found to make the program complete prior to implementing and ensure its quality and suitability, that was consistent with the data from development of the teaching program. Program assessment was of course necessary. Prasertsin, (2020) stated that an assessment compares particular behaviors with the established behavioral objectives in leading to the conclusion that clear-set, concise, and specific goals lead to reliable assessment later on. Dimonstone (Kaewmanee, 2001) also focused on program assessment aimed at verifying the quality of programs in terms of their format

and performance. The assessment can take many forms, i.e., questionnaires, surveys, or interviews, etc.

Phase 3. The experimental and improvement phases yielded a program efficiency of 87.34/89.11, thus meeting the set 80/80 criteria. All six children with intellectual disabilities were able to learn and perform activities based on their capacities. The researcher conducted ten experiments by acting as a special education teacher, who used information on the frequency of the kids' activities provided by experts' accounts indicating these children's poor memory. Care for their own health was not impossible, but it seemed unclear hence, non-accomplishment. After the students learned a systematic way of using media suitable for each group, they could then do various activities well. The learning activities which focused on actions, real-life experiments, and actual media clearly enhanced their learning.

Teachers' well-defined evaluation criteria, which were consistent with all relevant documents and the literature review, indicated that promoting healthy living requires vital knowledge on health education, as this helps people learn to take good care of themselves. It saves costs, time, and effort, as well as reducing pain and sickness. The important goal was that these students can apply what they learn in classes to their daily life. Various teaching methods, activities, and health advice must be employed. (Department of Curriculum and Instruction Development, Ministry of Education, 2008; 2009; Sarayuthpitak, 2015).

The research findings indicated that the program's learning-management plans were effective, as prescribed. Because they were created to be consistent with the current state of affairs during the COVID-19 epidemic and the PM 2.5 pollution problem, this involves the new normal in which people are constantly receiving both direct and indirect news. It is a valuable learning process that students come across in everyday life. All teachers are more aware of the importance of health care, and this facilitates continuous and vital learning in children.

The effectiveness index was 0.69. In general, all six children with intellectual disabilities made progress in their studies. This fact corresponds with Chandrasaka's (2015) study on the development of a natural-disaster-response-behavior program for kindergartners based on an imaginary model. Her findings showed that after that program experiment, kindergartners got higher self-protection scores, with a statistical significance at the .01 level. Kotcharat et al., (2018) also developed an educational program to instill good citizenship in students at border-patrol police schools in the special-area development zone in the southern border provinces of Songkhla. The results showed that those children's good -citizenship scores were higher than before they joined the program, at a statistically significant level of 0.1. Salita et al. (2019) conducted a study on the development, implementation, and evaluation of the Lay Responder Disaster Training (LRDT) for teachers in Angeles City schools in the Philippines using Witte's behavior model. The results showed key changes in their knowledge of behaviors, perception of threats, and the level of fear among participants. Other elements such as attitudes, intentions, and perceived performance showed no statistical significance.

After joining this program, all six children with intellectual disabilities made some progress in school. All of them completed the program by attending the full 12-week session. They also completed all the activities inside and outside the classroom. This was consistent with the researcher's observation that all these

children were able to apply what they learned to their daily life, especially because we analyzed and adjusted the curriculum by applying its storyline to the COVID-19 epidemic and PM 2.5 pollution.

Moreover, the researcher produced 12 sets of visual media and used them to task analysis the work step by step for children with intellectual disabilities, as well as 12 sets of cartoon images for regular children. Items such as face masks, hand-washing equipment, first aid, helmets, seat belts, and crosswalks were also incorporated into the program. Happily, the researcher saw concrete improvements in their behavior, such as safer use of crosswalks and wearing a helmet when on a motorbike.

I often received photos as proof of these improvements from the school administrators and teachers who had joined in the experiment.

The co-teaching via station teaching was divided into three groups. This enabled teachers to review key points with students in smaller groups, which rendered closer relationships between teachers and students. Teachers were able to make an immediate learning assessment and better observe the improvement of both groups of students, in contrast to dealing with larger groups. Every child had the opportunity to learn more. Teachers could use easy-to-understand or challenging teaching methods for children in each station as they learned how to cooperate with their peers. The design of hands-on practice for children resulted in an easy-to-understand learning process and could be applied in daily life, which was suitable to students' ages and beneficial to their daily life.

The teachers' opinions regarding the program were very positive, with a mean of ($\mu = 4.50$). This bodes well for future use of such a program. Also, adopting such a program was recommended by these teachers for all grade levels so as to help the kids with learning disabilities safely practice self-help. The teachers emphasized that the students made significant improvements regarding their own health and safety. The co-teaching by two teachers requires a give-and-take attitude. Each educator must be flexible in organizing activities. Having the opportunity to work together gave regular teachers a better understanding of children with intellectual disabilities. In the classrooms, the teachers sometimes needed counseling, as every child was different. The learning process should be all-inclusive, harmonious, and practical.

This is consistent with Saleepan's (2018) study on waste-management awareness-building via team-teaching in primary schools in Koh Samui District, Surat Thani Province. Results from that study revealed

that students' overall satisfaction with team teaching was high. In general, the research highlighted the benefits of team-teaching. It was a curriculum design model of self-improvement, learning management, student-performance assessment, cultivating a good and fun atmosphere, and awareness of waste-management programs. Students learned through real-life experiences. Smith (2012) authored a co-teaching case study on teachers' perceptions. The findings indicated that the No Child Left Behind Act (NCLB) 2001 and the Individuals with Disabilities Education Act (IDEA) 2004 in America directly contributed to an increase in the number of students receiving specific advice in normal classrooms. This was to accommodate students in many schools for one-on-one coaching or pairing special teachers with general teachers to serve both special and regular students. Team teaching is very effective.

Additionally, co-teaching involves teachers collaborating before they organize learning activities. Health education teachers pointed out that no talking session was ever held before, despite the need to learn to help children. Teachers from other fields also wanted information and advice on teaching this group of children from special education teachers. Sometimes, if stationed children were able to understand and act as planned, they could then be systematically rotated in the stations. Teachers with spare time can help take care of the children. As teachers in co-teaching schools, they should all have an understanding of how to teach children with intellectual disabilities. Every teacher was able to collaborate in the co-teaching school with the highest efficiency and effectiveness. If there is a problem involving not enough teachers in inclusive classrooms, health education teachers could probably watch out for the children. However, an advisor was also recommended to help facilitate activities-designing for inclusive classrooms so that both groups of children could benefit in the inclusive classrooms. Presently, co-teaching schools under the Bangkok Metropolitan Administration have begun to move out their manpower rate of special education teachers from general teachers, and improved the teacher/student ratio from 1/10 to 1/6. It is likely that schools will adopt co-teaching in the future. In this study, the researcher conducted program experiments and monitored co-teaching in classes and then slowly withdrew from teaching in order to allow special education teachers to work with health education teachers, so the researcher could observe the possibility of co-teaching through station teaching in the classrooms by themselves. The conduct of the children in both groups suggested that teachers must really prepare and use the informal-

communication method and regularly reinforce it. This conclusion is consistent with information gathered from co-teaching experts and special education teachers in co-teaching schools. That is to say, co-teaching is appropriate and highly advisable in schools administered by the Bangkok Metropolitan Administration.

Conclusion and Recommendation

This research showed that special education teachers and health education teachers should use the health-and-safety-promotion program for children with intellectual disabilities in inclusive classrooms. School meetings involving administrators, teachers, and parents must be organized so that all can understand the systematic work according to the quality cycle prescribed by the PDCA. The station-teaching model of classroom arrangement must also be understood and used. Class management should not only focus on activities, but also on teachers' flexibility in adjusting spaces when necessary.

Special education teachers should exchange their teaching techniques and help adjust the curriculum, which is the core of the Individualized Education Program (IEP) for children with intellectual disabilities. Health and safety topics and more teacher committees should be added in order to benefit the children as much as possible. This is an opportune time to develop all teachers' knowledge in co-teaching schools so as to help facilitate better team work and student achievement.

Good and ample teaching materials lead to better learning. Teachers need to adapt their teaching so as to allow children to practice, rather than just listening to and regurgitating what the teachers say. Teachers in other fields can also adopt this teaching program to suit their subjects. Health care has become a global first priority. It should be integrated into all subjects.

Suggestions for the Application of These Research Findings

1. Special education teachers and health education teachers should seriously consider the readiness of regular children and children with intellectual disabilities to be in inclusive classrooms. Teachers need to understand the common qualities of normal children and children with intellectual disabilities in inclusive classrooms for children 8–10 years old. Teachers should consistently explain health matters to children, even outside on the playground. Children should know that everyone has the ability to develop themselves. We should help create

an environment in which everyone can live together. Each child has different potential. This program can and should be implemented. A key aspect is regular feedback, which allows co-teaching teachers to review and adjust their work processes in real-life situations.

2. Special education teachers and health education teachers should encourage the parents of children with intellectual disabilities to use the program at home, as well. In the event of an epidemic, children with intellectual disabilities, like all others, must study from home. Teachers can retrieve what they need from Station 2 and share that with the parents to use such resources with their children. Special education teachers can also act as co-teachers who provide advice to the parents.

3. School administrators should support a higher budget for the creation of media. They should serve as consultants, facilitators, and co-planners who work with the teachers. Deepening our knowledge of teaching techniques for children with intellectual disabilities and other types of special children will help mitigate teacher shortages. The program can be used to formulate and drive health-and-safety promotion for all these children.

4. The Department of Education should establish a policy for co-teaching schools to create a solid implementation plan dedicated to health and safety. Appropriate budgeting is needed for teaching materials from real media, along with other material related to healthy living and encouraging and respecting individuality. We also need more special education teacher positions and more emphasis on such teachers working with health education and other teachers.

Suggestions for Future Research

1. The use and effects of health-and-safety-promotion programs for children with intellectual disabilities should be studied for different grade levels and types of special children in inclusive classrooms in various special schools and in unique special education centers and inclusive schools under the Special Education Bureau or the Office of the Basic Education Commission.

2. The effects of such programs should be studied, with an emphasis on promotion of co-teaching in the different forms - i.e. one teaches—one support, parallel teaching, alternative teaching, and team teaching.

3. The effects of such programs should be studied as regards other groups of subjects.

Conflict of Interest

The authors declare that there is no conflict of interest.

Funding

Funding for this research was granted from the National Research Council of Thailand for graduate development scholarship in 2020, as well as from the King Prajadhipok and Queen Ramphai Barni Memorial Foundation for graduate students' research scholarships in 2019.

References

- American Psychiatric Association. (2015). *Supplement to diagnostic and statistical manual of mental disorders* (5th ed). <https://cdn.websiteeditor.net/30f11123991548a0af708722d458e476/files/uploaded/DSM%2520V.pdf>
- Bureau of Non- Communicable Diseases. (2019a). *Deaths from drowning in children under 15 years of age*. Bangkok, Thailand. <http://www.thaincd.com/2016/news/hot-news-detail.php?gid=1-027&id=14289>
- Bureau of Non- Communicable Diseases. (2019b). *Road accident deaths in children under 15 years of age*. <http://www.thaincd.com/2016/media-detail.php?id=13861&tid=&gid=1-027>
- Chandrasaka, W. (2015). *Development of a program to promote natural disaster response behavior for kindergarten children based on the concept of imagination* [Unpublished master's thesis]. Chulalongkorn University.
- Densiriaksorn, P. (2018). *Intellectual disabilities*. <https://th.rajanukul.go.th/preview-4002.html>
- Department of Curriculum and Instruction Development, Ministry of Education. (2008). *Guidelines for organizing learning activities for thinking skills development based on core curriculum of the basic education, BmE 2551, health education and physical education learning subject group for elementary school* (2nd ed.). Agricultural Co-Operative Federation of Thailand Printing House.
- Department of Curriculum and Instruction Development, Ministry of Education. (2009). *Indicators and learning content of health education and physical education according to the core curriculum of basic education, B.E. 2551*. Agricultural Co-Operative Federation of Thailand Printing House.
- Department of Curriculum and Instruction Development, Ministry of Education. (2018). *Educational standards basic education level*. Bangkok. n.p. [in Thai]
- Department of Education Michigan. (2018). *Independent Living Skills (ILS) checklist*. https://mdelio.org/sites/default/files/documents/BVI/ECC/ILS/Checklists/ILS_Checklist_2018.pdf
- Jeerapornchai, P. (2010). *Development of a program to enhance decision-making skills in living by yourself. For students in the second grade with intellectual disabilities* [Unpublished doctoral dissertation]. Srinakharinwirot University.
- Kaipetch, J. (2001). *A study of mathematics learning achievement and learning attitudes of children with mathematical talents from teaching by co-teaching method as 1 teacher and 1 co-teacher* [Unpublished master's thesis]. Srinakharinwirot University.

- Kaewmanee, K. (2001). *Development of a mathematics teaching program for kindergarten children using a learning center with a learning contract* [Unpublished master's thesis]. Chulalongkorn University.
- King-Sears, M. E., Janney, R., & Snell, M. E. (2015). *Collaborative teaming* (3rd ed.). Paul H. Brookes Publishing Co. <https://blog.brookespublishing.com/wp-content/uploads/2021/05/importance-of-collaboration-in-schools.pdf>
- Kosuwan, K., & Viriyangkura, Y. (2017). *Teaching and assisting persons with intellectual disabilities*. Faculty of Education, Chiang Mai University. [in Thai]
- Kotcharat, J., Pursaera, N., & Chaikaew, M. (2018). *Development of educational programs to build good citizenship for children under the border patrol police school special development zone in the southern border provinces of Songkhla Province* (Research report). Office of the National Research Council. <http://opac.yru.ac.th/catalog/BiblItem.aspx?BibID=b00076953>
- Meesupmun, S., Mitranun, C., & Sriwanyong, S. (2020). The study of current situation, problems, need assessment and guidelines to promote health and safety for students with intellectual disabilities in inclusive classrooms. *Journal of Research Methodology*, 33(2), 147–165. <https://portal.edu.chula.ac.th/pub/jrm/index.php/jrm/article/view/654>
- Nilsukh, P. (2015). *Administration of mainstream school co-education* [Independent Study]. Silpakorn University.
- Prasertsin, A. (2020). *Research tools in education and social sciences*. Chulalongkorn University Press. [in Thai]
- Roberson, G. L. (2014). *Do teachers perceive co-teaching as an effective instructional model?* (Order No. 3622606). ProQuest Dissertations and Theses database Global: Social Sciences (1547165661). <https://eric.ed.gov/?id=ED569638>
- Saleepan, K. J. (2018). *Effects of team teaching management on building awareness of waste management among students in primary schools. Koh Samui District Surat Thani Province* [Unpublished master's thesis]. Srinakharinwirot University.
- Salita, C., Liwang, R., Tiongo, R. E., & Kawano, R. (2019). Development, implementation, and evaluation of a lay responder disaster training package among school teachers in Angeles City, Philippines: Using Witte's behavioral model. *Journal of Public Health*, 170(1), 2331. <https://doi.org/10.1016/j.puhe.2019.02.002>
- Sarayuthpitak, J. (2015). *School health program* (2nd ed.). Chulalongkorn University Printing House. [in Thai]
- Smith, V. M. (2012). *Co-teaching: A case study of teachers' perceptions* (Order No. 3525793). ProQuest Dissertations & Theses database Global: Social Sciences (1039147424). <https://repository.library.northeastern.edu/files/neu:1181/fulltext.pdf>
- Supervisor Unit Department of Education Bangkok Metropolitan Administration. (2014). *Guidelines for educational administration for inclusive students in schools under Bangkok metropolitan administration*. n.p. [in Thai]
- Thanaphum, D. (1999). *Teaching mentally retarded children*. Somjai Printing Company. [in Thai]
- The Royal College of Pediatricians of Thailand Pediatrician Association of Thailand. (2017). *A guide for parents To disseminate knowledge on child care and development at school age children 6–12 years*. n.p. <https://www.brainten10.com/blogs/article/item/117-brain> [in Thai].
- Thompson, K. (2010). *The many faces of co-teaching: How does co-teaching impact students at different levels of academic functioning?* (Order No. 3443013). ProQuest Dissertations & Theses database (854495796). <https://eric.ed.gov/?id=ED525659>
- United States Department of Education, Office of Special Education Programs-OSEP. (2013). *Guideline: Intellectual disabilities in educational settings*. Special Education in North Dakota.
- Wilson, G. L., & Blednick, J. (2011). *Teaching in tandem effective co-teaching in the inclusive classroom*. ASCD.