



香港教育大學

The Education University
of Hong Kong

A Capstone Project entitled

**“Water Safety Rewards Scheme for special education students with Autism spectrum
disorder (ASD)”**

Submitted by

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for the Bachelor Degree of Education (Physical Education)

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Declaration

I, *Wong Suet Wing* , declare that this research report represents my own work under the supervision of *Mr.Chan Ching Yat, Roy, Senior Lecturer II of the development of Health and Physical Education*, and that it has been submitted previously for examination to any tertiary institution.

Wong Suet Wing

22 April 2024

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Abstract of Capstone Project entitled

“Water Safety Rewards Scheme for special education students with Autism spectrum disorder (ASD)”

Purpose: This scheme is aimed at providing water safety teaching resources and assessment programs for special needs students, specifically targeting students with mild to moderate Autism Spectrum Disorder (ASD). In Hong Kong, despite the fact that there are a number of organizations that provide different kinds of activities to promote the importance of water safety and spread awareness about being safe in the water for the public, these activities or teaching methods could not be fully beneficial for students with ASD due to their special circumstances. It aims to improve their water safety knowledge and communication skills simultaneously. **Methodology:** This Scheme is a teaching program which enhances the learning motivation of students with ASD through a series of activities and rewards. These activities involve visual and sound animation, which helps students with ASD to understand the materials more easily and allow them to improve their communication skills simultaneously. To assess their learning progress, games and videos will be utilized for assessment. Collecting data from 2 aspects : water safety knowledge tests before and after they join the scheme, 30 questionnaires including parent, swimming coach and school PE teacher to evaluate the project's efficiency. **Results:** More than 80% of parents, coaches or school PE teachers agree that the materials in this scheme are useful for students with ASD. Significant difference in improvement of water safety knowledge among before and after the scheme was found. **Conclusion:** In conclusion, the water safety scheme can improve water safety knowledge of students with mild to moderate ASD.

Keywords: Water safety, ASD, Reward, communication skills, visual and sound animation
(251 Words)

Project objectives

Main objectives

1. To enhance the awareness of water safety in students with Mild to Moderate ASD.
2. To enhance their communication and verbal skills

Learning outcome

1. Psychomotor Domains : Participants can demonstrate some actions of water safety by themselves
2. Cognitive Domains : Participants can understand the knowledge about water safety and the importances of water safety
3. Affective Domains : Participants can enhance their communication skills and appreciate others.

Background

ASD (autism spectrum disorder) is a developmental disorder caused by brain differences. They frequently have difficulty with social communication and interaction, as well as limited or repetitive actions or hobbies. Their behaviors, communication, interaction and ways of learning are different from most other people (*Basics About Autism Spectrum Disorder (ASD)* | NCBDDD | CDC, 2022)

The reasons of implementing this proposed project

For students with ASD, Hong Kong does not offer enough water safety-related activities or courses. Even though there are many activities, they are all suitable for the general public. For instance, the talks and Water Safety Day held by Hong Kong Teachers' Swimming Associations. Water Safety Awards and teaching materials from The Hong Kong Life Saving Society.



Figure 1. Poster of Water Safety Day

Due to the necessity for special teaching strategies, none of them are appropriate for students with ASD. Hong Kong College of Special Needs Swimming was established at the same time, but its objectives did not include raising the awareness of water safety or providing students with teaching materials or activities related to it.

總會為「香港特殊需要人士游泳學院」訂立了下列的使命和目標：

1. 為特殊需要人士提供一個普及與持續的游泳學習機會
2. 推廣特殊需要人士游泳的興趣
3. 透過游泳及各項水中運動強化及改善特殊需要人士身心靈以及人際關係，好讓他們能融入社群
4. 為有志服務特殊需要人士之專項游泳教師提供一個團結的服務平台，發揚社會關愛精神
5. 鼓勵更多有志的游泳教師投身服務特殊需要人士游泳教學行列，造福社群
6. 聯繫特殊需要人士之家長、義工及其他有關機構團體，組織服務及協作團隊提供各類互助自助服務
7. 與香港游泳教師總會緊密合作，讓游泳教師深入認識特殊需要人士游泳技巧及教學方法，為有志成為特殊需要人士游泳教學助教及義工提供訓練

Figure 2. The objectives of Hong Kong College of Special Needs Swimming

To summarize the local situation, water safety awareness for SEN students is not enough. However, water safety awareness is important as drowning is a serious issue globally. According to the findings, it emphasized the importance of teaching water safety techniques to children. For children with ASD, swimming is their most popular sport and all-around favorite activity, and water play is growing more and more popular. According to the National Autism Association, 91% of deaths reported in children with ASD who are 14 years old or younger are due to unintentional drowning (*Alaniz et al., 2017*). Also, there was a news article mentioning that a 4 years old child with ASD had drown (自閉幼童泳池溺水 鄰居男孩果斷喚父救回一命, 2022). A total of 14 parents of ASD students, 9 coaches and 9 school teachers filled up questionnaires, 85.7 % and 100 % from parents, coaches and school teachers agree that learning water safety knowledge is necessary for students with ASD (Figure 24 & 25). That's why awareness about water safety is essential.

對於自閉症譜系障礙人士，你是否同意學習水上安全知識有存在必要性嗎？
14 則回應

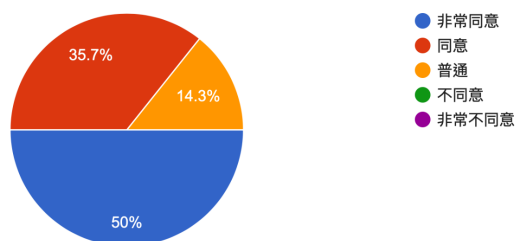


Figure 3. Response from parents

對於自閉症譜系障礙人士，你是否同意學習水上安全知識有存在必要性嗎？
19 則回應

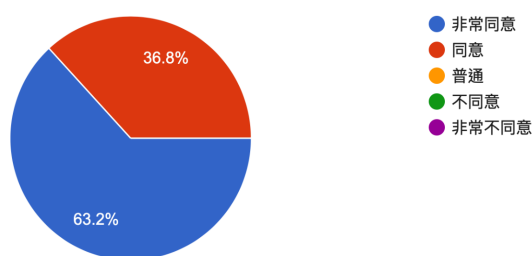


Figure 4. Response from coaches and teachers

Last but not least, learning water safety is easier than learning how to swim. From my personal teaching experiences in SEN swimming classes, I have found that it is challenging for them to learn as swimming requires many skills. In contrast, they have abilities to learn quickly on the knowledge of water safety by special teaching strategies, such as the spider walk or the proper entry and exit from the water.



Figure 5. Teaching experiences in SEN swimming classes (12/2022-03/2023)

Summing up three reasons above, I designed a rewards scheme to enhance their water safety awareness.

Methodology

Google Site - Water Safety Rewards Scheme link :

<https://sites.google.com/view/watersafetyrewardsscheme-asd/%E4%B8%BB%E9%A0%81>

This project is divided into two parts : Teaching Part and Exam Part. All materials and rubrics will be provided on the Google site. There are nine chapters in the whole reward scheme, and each chapter is divided into three levels: gold, silver, and bronze.

Teaching Part

1. Learning Package from website

Students can learn from the teaching materials (powerpoint and videos) which are prepared on google sites. Students can learn everywhere, everytime.

2. Swimming Classes

Teaching content is not only swimming, but also includes the knowledge of water safety.

Helping students to learn effectively.



Examination Part

1. Standard rubrics had been setted up, which was divided into two levels: mild and moderate level.
2. A Logbook is provided for them to collect a stamp.
3. Participants finish the tasks in Exam and Encourage Platform or Online game according to the rubrics after learning from the teaching part.
4. Participants can get a stamp when they are examined successfully.

Figure 6: The Flow Chart of the project

Teaching part

(1) Learning Package from website

Setting up a menu bar on the website which helps participants or viewers to search easily for the suitable learning resources. In the learning package, it consists of two parts : Video modeling and Powerpoint. There are brief descriptions about teaching contents in each chapter.



Figure 7. Menu bar of the learning package

1. Video modeling in the learning packages

Video modeling is one of the teaching strategies for special education students. According to the systematic reviews, it concluded that video modeling was an effective strategy to foster physical activity in children with ASD (Joann & Kristen, 2022). Videos about some survival skills, spider walking and fitness are provided in different chapters.

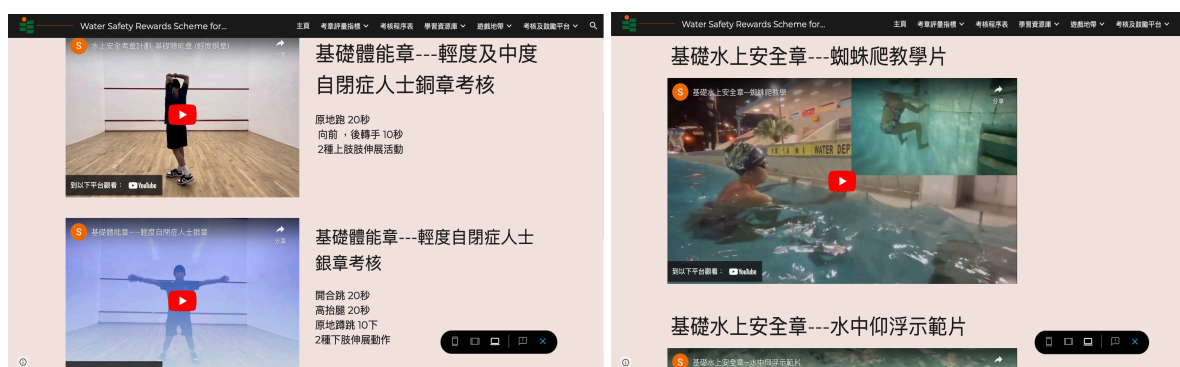


Figure 8 & 9. Video Modeling in the learning package of the teaching part

2. Powerpoint

The contents of powerpoint are taking some references from different water safety talks and teaching materials. In order to facilitate students' understanding and attract their attention, it is modified to be simple which mainly consists of sounds, cartoons and videos. As the learning abilities are different in mild and moderate levels, some of the powerpoints will be different. The powerpoints for moderate level contain single wordings, photos and sounds, but contain more information in mild level. All powerpoints are embedded by topic in different chapters.



Figure 10 & 11. Powerpoint in the learning package of the teaching part

(2) Swimming Classes

During the lessons, some basic water safety knowledge is taught by using special teaching strategies. Also, the project will be introduced to other coaches to implement together. For example, the coaches introduce rules of the swimming pool in the beginning of each lesson which help to deepen the memories. The lessons integrate game play to teach some of the contents of the video which is on the website, like Spiderman Walk. As it is not easy for them to learn from the video only, teaching from coaches is the most efficient way.

Phase	Time	Teaching content/Activities	Teaching points
Introductory Phase	20 mins	<p>Introduce the swimming pool by using the cue cards of the floor plan and introduce the ground rules in the swimming pool.</p> <p>Showing the schedule of today's lessons to students by using pecs</p> <ul style="list-style-type: none"> When students finish the tasks, they can stick their stickers that they had chosen on the pecs. If there are their own stickers on each task at the end of the lessons, they can get a reward which is to choose a sticker by themselves. <p>Showing the group distributions to students by using pecs</p> <ul style="list-style-type: none"> There are photos of students and coaches on the pecs. The pecs will show that students belong to which groups and follow which coaches during the lessons. <p>Game Play: Being a Spiderman</p> <ul style="list-style-type: none"> Teacher will put 3 different color cones with a same distances (about 3m) Students need to perform spider walks by listening to the instructions from teachers. For example, Teachers said "walk to yellow cones". And then, students need to perform spider walks to yellow cones from other cones. If there are students who cannot perform the spiderman walk, they can perform an easier movement : one leg stands on the floor while the other leg touches the wall. Change the legs together in the same places. When they are done, they can change from the floor to wall by using both legs. 	<p>Entry water</p> <ul style="list-style-type: none"> Entry to the water by stairs Turn the body and face out of the pool Down with stairs step by step <p>Spiderman walk</p> <ul style="list-style-type: none"> Catching the wall with both hands The toes of both feet need to stick to the wall The knees should be bent. <p>Kicking with kickboard</p> <ul style="list-style-type: none"> Hold the kickboard with straight arms Kicking with straight legs and do not bending knees

Figure 12. Example of the lesson plan in swimming classes

Besides the adaptation of teaching content, special teaching methods in swimming classes will be used to cater to the students with ASD.

1. Using Visual Cue Cards

Communication issues are a major factor that leads to social interaction issues in students with ASD (*Social Difficulties in Autism Spectrum Disorder, 2001*). Visual cue cards can support and strengthen their communication. Additionally, according to a study, although ASD students have difficulties on motor skills, it can be improved by visual support (*Hu et al., 2021*). Visual support can improve the learning effectiveness (*Armstrong et al., 2015*). In swimming classes, visual cue cards about floating utensils are provided. Coaches can call students to take a kickboard by using cue cards, then students take the right materials according to the photo. Also, visual action cards are used in swimming classes to help

students comprehend and focus on the key information. Thus, it establishes a communication way for them and enhances the efficiency in learning.



Figure 13. Visual Cards about floating utensils

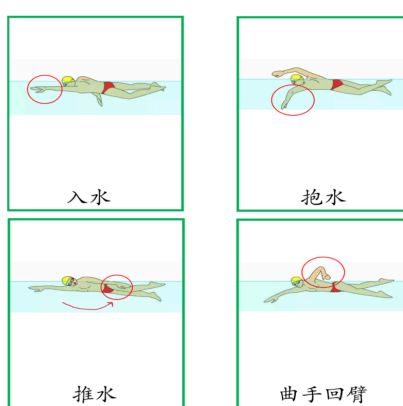


Figure 14. Visual action cards about the movement

2. Using Treatment and Education of Autistic and Communication Handicapped Children (TEACCH)

The majority of students with ASD require routine everyday. They might experience intense anxiety if there are any changes. Physical structure and a consistent schedule are used to facilitate their learning environment. In addition to achieving one of the project's goals which is improving their communication skills. It also attempts to lessen their anxiety, which will help the class run smoothly.

The physical structure of the classroom refers to the several fixed areas indicating the

objective in every area by using a picture or card. Their anxiety can be lessened in the fixed learning contexts, which help with behavioral issues brought by the excessive stress.

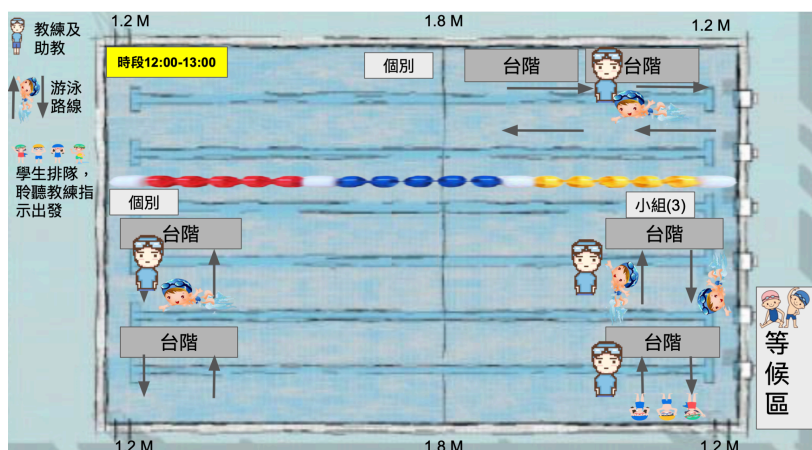


Figure 15. Physical Structure - Visual Environment Organization

Consistent Schedule is provided before the classes begin. It aims to assist them in precisely understanding what they are doing that day. They might lessen their tension and worry by predicting the lesson contents or the upcoming task. Giving them an option can increase their motivation to learn because they have special interests of their own (Koegel *et al.*, 2010). So that providing choices and rewards can enhance their motivation in classes. When they finish the tasks, they can stick their favorite stickers on the board.

教學流程圖	挑戰貼貼貼
齊來伸伸展	
水中蜘蛛爬	
重溫踢踢腳	
學習轉轉手	
接力小遊戲	
你拋我接	
下課！換禮物	

Figure 16. Consistent Schedule with providing choices and rewards

3. Modified equipment

Visual support can enhance the effectiveness of their learning as they can understand easily through visual more than verbal communication. Modified equipment will be used in the

classes. For example, sticking a palms sticker on the kickboard to provide them visual signs about where to place their hands.



Figure 17. Modified Equipment

Examination Part

(1) Rubrics

Two different rubrics for mild and moderate level of students with ASD are designed to cater their learning differences. (Appendix 1&2). The examination content was taught in the teaching parts. It is set up according to teaching content, the objectives of the project and their abilities from my personal previous teaching experiences. There are examples to show how the rubric fulfills the objectives.

基礎水上安全章	學生能在水中仰浮 5 秒	學生能在水中 展現 蜘蛛爬行 來回 5 次	學生能以正確方法下水及上水
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Psychomotor Domains : Demonstrate some actions of water safety by themselves

泳池安全章	學生能說出 3 個 泳池安全守則	學生能說出 1 個 泳池安全守則	學生需於網上遊戲區完成有關泳池安全的考核
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Cognitive Domains : Understanding the knowledge about water safety and the importances of water safety.

水上安全服務章	學生需要完成水上安全服務 10 小時	學生需要完成水上安全服務 5 小時	學生需要完成水上安全服務 3 小時
---------	--------------------	-------------------	-------------------

Affective Domains : Enhancing their communication skills.

(2) Logbook and Stamps

The design of Logbook and Stamp link :

https://www.canva.com/design/DAGAPsBO8qk/yrNtc9jbZNeB-LK9s10-Q/view?utm_content=DAGAPsBO8qk&utm_campaign=designshare&utm_medium=link&utm_source=viewer

In addition, stamps will be used as rewards to enhance their motivation. When they finish the tasks, they can get the stamps.

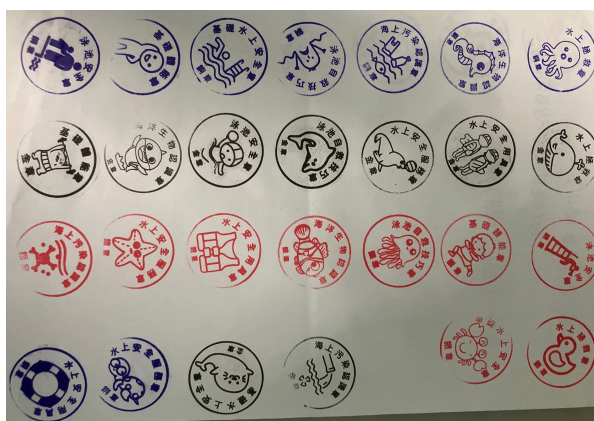


Figure 18. Design of Stamps

There are 4 main functions on the personal log books which will be provided to students when they engage in the scheme.

1. Providing an area for them to store the stamp

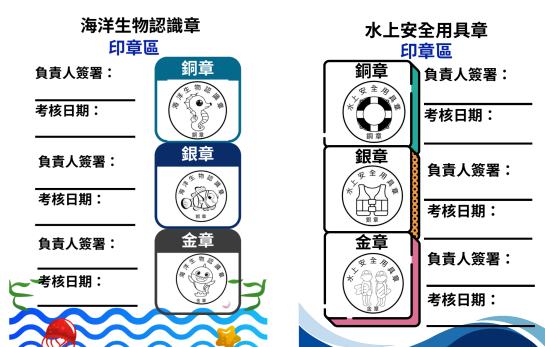


Figure 19. Area of storing stamps in logbook

2. Enhancing the sense of success:

Some students with ASD may not succeed to examine, so progressive self evaluation assessments are provided for each chapter.



Figure 20. Progressive Self-evaluation Form in logbook

3. Providing an area for parents, coaches or themselves to write down some encouraging sentences



Figure 21. Encouraging areas in logbook

4. Providing some targets:

As they mostly feel afraid or stressed when taking videos. However, it is one of the examination methods. Therefore, giving targets for them to achieve.



Figure 22. Targets in logbook

(3) Examination Method

1. Online Games

Most of the bronze medals are examined online. It is divided into mild and moderate levels separately. All the game links, QR codes and games are shown on the website.



Figure 23. The menu bar of the game areas



Figure 24. The online games

A demonstration of the examining steps of the online games is given in the website (https://youtu.be/9_VBoPgi4aQ). They have to type their name on the leaderboard at the end of the games. Only getting full marks is counted as a success.

2. Exam and Encourage Platform

To enhance their verbal skills, taking video is one of the examination methods. Students need to talk about the information according to the rubrics. Submitting and uploading a video with full name to the platform. Also, it provides an encouraging area for students to encourage each other.



Figure 25. The menu bar of different chapter platforms

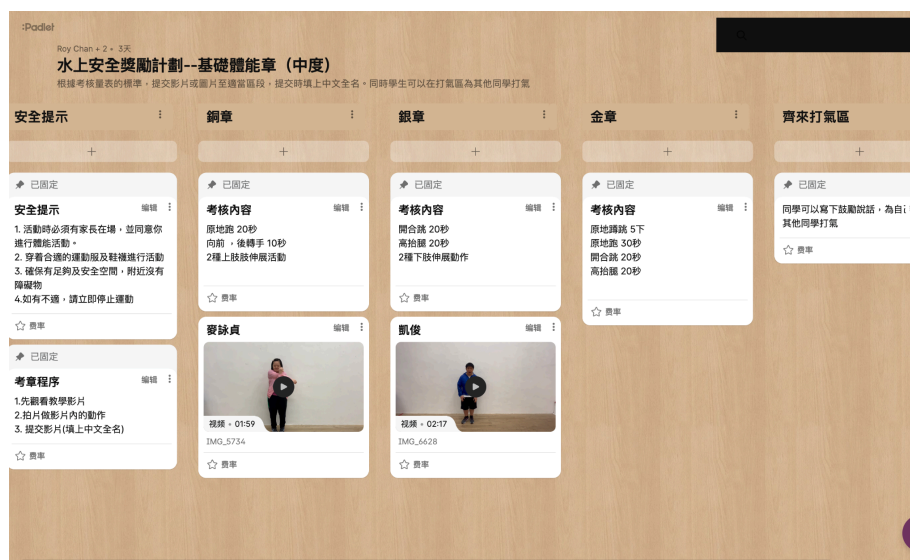


Figure 26. Exam and Encourage Platform

A demonstration of uploading the video to the platform is given in the website

(<https://youtu.be/ivI8IDk16IU>).

Results analysis

Questionnaire was sent to 14 parents of ASD students, 9 coaches and 9 school teachers (Appendix 4 & 5). Summing up the data, the following figure shows the data analysis. From parents, coaches and school teachers, 42.9% and 52.6% strongly agree ; 57.1% and 47.4% agree that this scheme can enhance water safety knowledge. (Figure 27 & 28)

你是否同意此計劃能有助自閉症譜系障礙人士學習水上安全知識嗎？

14 則回應

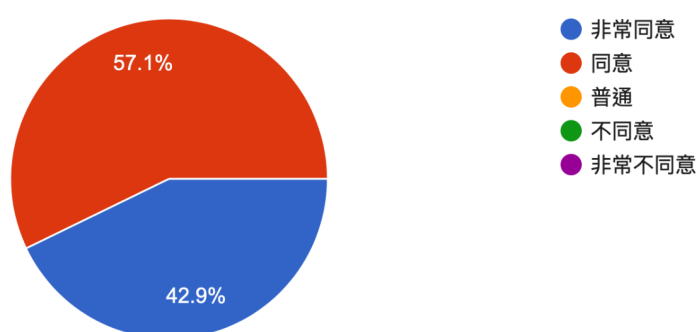


Figure 27. Response of question 2 from parents

你是否同意此計劃能有助自閉症譜系障礙人士學習水上安全知識嗎？

19 則回應

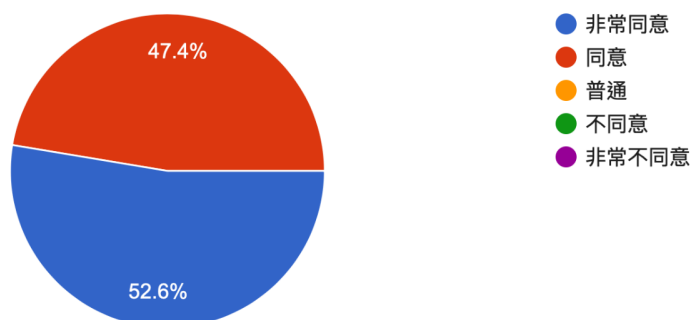


Figure 28. Response of question 3 from coaches and teachers

From parents, coaches and school teachers, 50% and 52.6% strongly agree ; 35.7% and 47.4% agree that this scheme can enhance communication and verbal abilities. (Figure 29 & 30)

你是否同意此計劃能有助提升自閉症譜系障礙人士說話及溝通能力嗎？

14 則回應

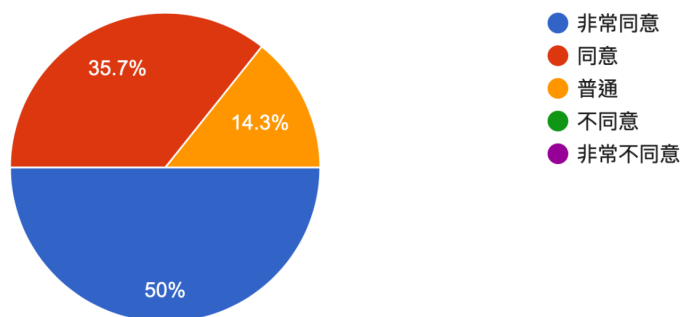


Figure 29. Response of question 8 from parents

你是否同意此計劃能有助提升自閉症譜系障礙人士說話及溝通能力嗎？

19 則回應

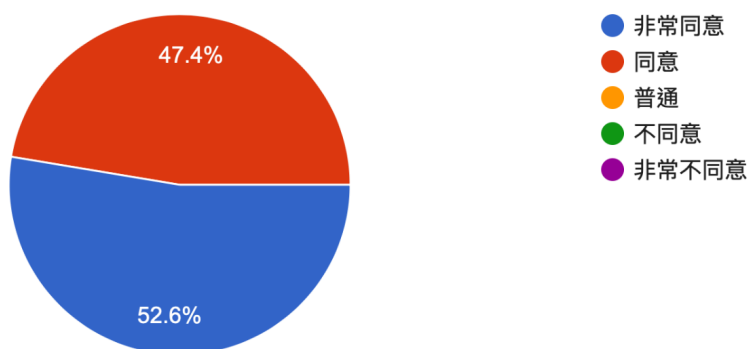


Figure 30. Response of question 9 from coaches and teachers

92.9 % and 94.7 % from parents, coaches and school teachers agree that exam content is suitable for students with ASD. (Figure 31 & 32)

你是否同意考核內容的程度合適自閉症譜系障礙人士？

14 則回應

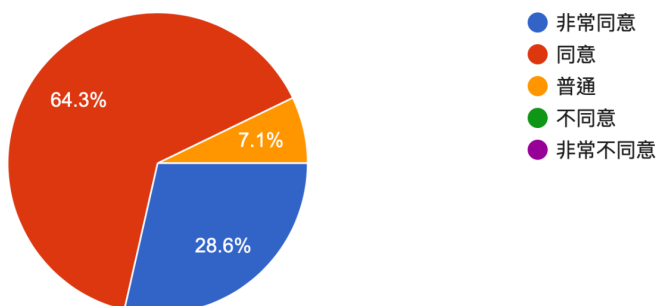


Figure 31. Response of question 4 from parents

你是否同意考核內容的程度合適自閉症譜系障礙人士？

19 則回應

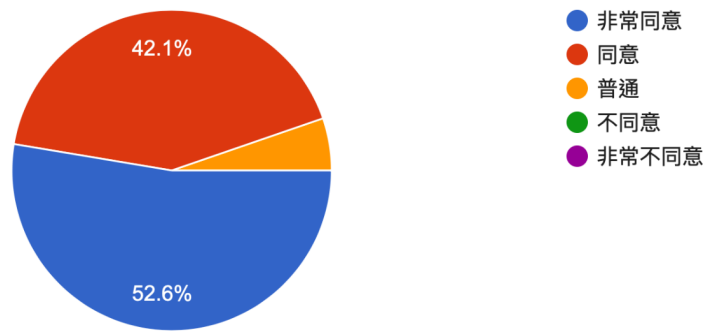


Figure 32. Response of question 5 from coaches and teachers

100% of parents, coaches and school teachers agree that rewards scheme can enhance their motivation (Figure 33 & 34)

獎勵計劃是否有助提升學習動機？

14 則回應

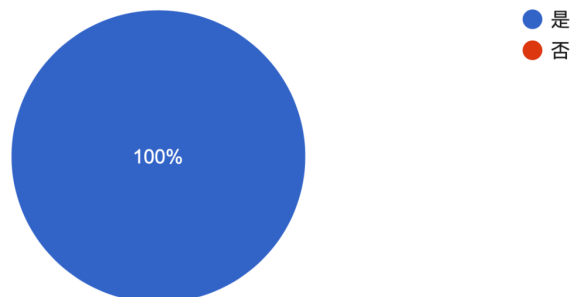


Figure 33. Response of question 8 from parents

獎勵計劃是否有助提升學習動機？

19 則回應

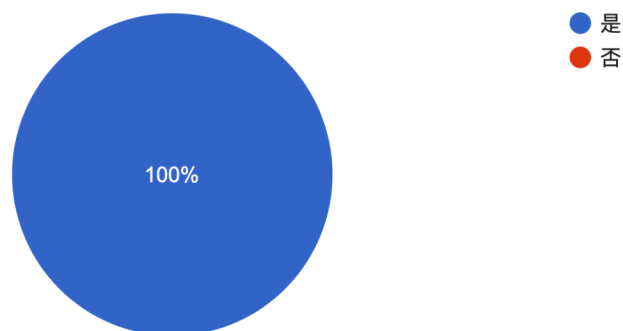


Figure 34. Response of question 6 from coaches and teachers

Furthermore, a focus group interview from a coach of swimming classes is conducted (Appendix 6). It shows that rewards schemes can enhance their learning motivation. The content of teaching resources and exams is enough and easy to understand. But he suggests that the font can be more attractive.

Pre-test and post-test is used when trying out the projects (Appendix 7). 2 students with moderate ASD were invited to engage in this scheme, which aims to test the feasibility and efficiency of the project. Significant improvement of water safety knowledge has been shown in post-test.

水上安全獎勵計劃 學前評估

姓名：郭凱駿 分數：4/10

1. 請連綫配對以下名稱及圖片。(5分)

浮板 → ✓
 浮背 → ✗
 救生圈 → ✗
 救生衣 → ✗
 浮條 → ✗

2. 藍色分類回收垃圾標代表？(請圈出答案) (1分)

A. 廢紙 B. 鋁罐 C. 膠樽

3. 以下那個救生方法較好？(請圈出答案) (1分)

A. 下水救生 B. 岸上救生

4. 以下那個是遇溺時最重要的動作？(請圈出答案) (1分)

A. 大聲呼叫 B. 拍打水面 C. 保持鎮定

5. 泳池內是否可以奔跑及跳水？(請圈出答案) (1分)

A. 可以 B. 不可以

6. 以下那個是合法游泳地點？(請圈出答案) (1分)

A. 河流 B. 有救生設備及救生員的泳池及沙灘 C. 水塘

水上安全獎勵計劃 學前評估

姓名：麥詠貞 分數：6/10

1. 請連綫配對以下名稱及圖片。(5分)

浮板 → ✓
 浮背 → ✓
 救生圈 → ✓
 救生衣 → ✓
 浮條 → ✓

2. 藍色分類回收垃圾標代表？(請圈出答案) (1分)

A. 廢紙 B. 鋁罐 C. 膠樽

3. 以下那個救生方法較好？(請圈出答案) (1分)

A. 下水救生 B. 岸上救生

4. 以下那個是遇溺時最重要的動作？(請圈出答案) (1分)

A. 大聲呼叫 B. 拍打水面 C. 保持鎮定

5. 泳池內是否可以奔跑及跳水？(請圈出答案) (1分)

A. 可以 B. 不可以

6. 以下那個是合法游泳地點？(請圈出答案) (1分)

A. 河流 B. 有救生設備及救生員的泳池及沙灘 C. 水塘

Figure 35 . Pre-Test

水上安全獎勵計劃 學習成果評估

姓名：郭凱駿 分數：8/10

1. 請連綫配對以下名稱及圖片。(5分)

浮板 → ✓
 浮背 → ✓
 救生圈 → ✓
 救生衣 → ✓
 浮條 → ✓

2. 藍色分類回收垃圾標代表？(請圈出答案) (1分)

A. 廢紙 B. 鋁罐 C. 膠樽

3. 以下那個救生方法較好？(請圈出答案) (1分)

A. 下水救生 B. 岸上救生

4. 以下那個是遇溺時最重要的動作？(請圈出答案) (1分)

A. 大聲呼叫 B. 拍打水面 C. 保持鎮定

5. 泳池內是否可以奔跑及跳水？(請圈出答案) (1分)

A. 可以 B. 不可以

6. 以下那個是合法游泳地點？(請圈出答案) (1分)

A. 河流 B. 有救生設備及救生員的泳池及沙灘 C. 水塘

水上安全獎勵計劃 學習成果評估

姓名：麥詠貞 分數：9/10

1. 請連綫配對以下名稱及圖片。(5分)

浮板 → ✓
 浮背 → ✓
 救生圈 → ✓
 救生衣 → ✓
 浮條 → ✓

2. 藍色分類回收垃圾標代表？(請圈出答案) (1分)

A. 廢紙 B. 鋁罐 C. 膠樽

3. 以下那個救生方法較好？(請圈出答案) (1分)

A. 下水救生 B. 岸上救生

4. 以下那個是遇溺時最重要的動作？(請圈出答案) (1分)

A. 大聲呼叫 B. 拍打水面 C. 保持鎮定

5. 泳池內是否可以奔跑及跳水？(請圈出答案) (1分)

A. 可以 B. 不可以

6. 以下那個是合法游泳地點？(請圈出答案) (1分)

A. 河流 B. 有救生設備及救生員的泳池及沙灘 C. 水塘

Figure 36. Post-Test

Discussion

To summarize all the data, it showed that this scheme is effective in enhancing water safety knowledge, communication and verbal abilities of students with ASD. Also, it can increase their learning motivation. Teaching materials and exam content are also suitable for them. However, there are some limitations and improvements in the future. Although there are some targets on communication and verbal skills provided in the logbook, students may not easily achieve that. Parents may need to do additional training. Thus, the training method should be provided on the website. Secondly, parents need to spend more time to assist their learning as they need to explain the contents of the teaching materials. Yet, videos can be included to explain the content of the PowerPoint. Meanwhile, narration and subtitles should be added in the videos. Lastly, the process of collecting stamps is troublesome. They cannot get the stamps immediately. In the future, it can try to modify electronic stamps.

Conclusion

To conclude, the water safety rewards scheme provides various teaching materials about water safety knowledge on the website. Using rewards teaching methods to enhance their motivation while 2 different examining methods are included to increase the entertainment. This project provides an effective way to enhance water safety knowledge of students with ASD. It is not only useful for students with ASD, but also teaching the coaches and school teachers. However, amendments are needed based on the limitation. Eventually, hoping the Water Safety Rewards Scheme can help students with mild and moderate level ASD to enhance the water safety awareness.

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Appendix 1 : Rubrics for Mild level of students with ASD

輕度自閉症人士考核表

	金	銀	銅
水上安全用具章	學生能展現 3種 水上安全用具的正確用法	學生能說出 3種 水上安全用具的名稱及用途	學生能指認水上安全用具的名稱，需於網上遊戲區完成考核
基礎水上安全章	學生能在水中仰浮 5 秒	學生能在水中 展現 蜘蛛爬行 來回 5次	學生能以正確方法下水及上水
基礎體能章	學生能帶領其他同學完成陸上運動	根據影片完成指定陸上運動 開合跳 20秒 高抬腿 20秒 原地蹲跳 10下 2種下肢伸展動作	根據影片完成指定陸上運動 原地跑 20秒 向前，後轉手 10秒 2種上肢伸展活動
水上安全服務章	學生需要完成水上安全服務 15小時	學生需要完成水上安全服務 10小時	學生需要完成水上安全服務 5小時
水上拯救章	學生能展現 1種正確協助拯救的方法	學生能說出救溺3大原則	學生能說出協助拯救的5個步驟
泳池安全章	說出 5個 泳池安全守則	說出 3個 泳池安全守則	學生需於網上遊戲區完成有關泳池安全的考核
泳池自救技巧章	學生能展現 1種自救方法	學生能說出泳池自救的 3 種方法	學生能說出自救口訣
海上生物認識章	學生能畫出 3種海上生物	學生能說出2種海上生物的資料	學生能說出3種海上生物名稱
海上污染認識章	學生能說出3個保護海洋的方法	學生能說出3個海上污染的種類	學生需於網上遊戲區完成有關海上污染的考核

Appendix 2 : Rubrics for Moderate level of students with ASD

中度自閉症人士考核表

	金	銀	銅
水上安全用具章	學生能展現 2種 水上安全用具的正確用法	學生能說出3種水上安全用具的名稱	學生能指認水上安全用具的名稱，需於網上遊戲區完成考核
基礎水上安全章	學生能自行以正確方法下水及上水	學生能在水中 展現蜘蛛爬行 來回 3次	學生能在協助 /輔助物品協助下以正確方法下水及上水
基礎體能章	根據影片完成指定陸上運動 原地蹲跳 5下 原地跑 30秒 開合跳 20秒 高抬腿 20秒	根據影片完成指定陸上運動 開合跳 20秒 高抬腿 20秒 2種下肢伸展動作	根據影片完成指定陸上運動 原地跑 20秒 向前，後轉手 10秒 2種上肢伸展活動
水上安全服務章	學生需要完成水上安全服務 10小時	學生需要完成水上安全服務 5小時	學生需要完成水上安全服務 3小時
水上拯救章	學生能說出救溺3大原則	學生能說出協助拯救的5個步驟	學生能指認協助拯救方法，需於網上遊戲區完成考核
泳池安全章	學生能說出 3個 泳池安全守則	學生能說出 1個 泳池安全守則	學生需於網上遊戲區完成有關泳池安全的考核
泳池自救技巧章	學生能說出泳池自救的 3 種方法	學生能說出自救口訣	學生需於網上遊戲區完成有關泳池自救的考核
海上生物認識章	說出2種海上生物的資料	說出3種海上生物名稱	學生能指認海上生物的名稱，需於網上遊戲區完成考核
海上污染認識章	學生能說出2個保護海洋的方法	學生能說出2個海上污染的種類	學生需於網上遊戲區完成有關海上污染的考核

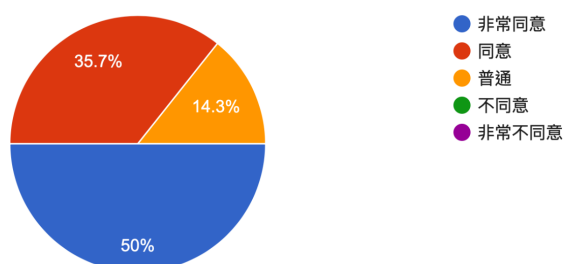
Appendix 3 : Game link of the online game

1. 水上安全用具對對碰 : <https://wordwall.net/tc/resource/54659885>
2. 水上拯救遊戲室: <https://wordwall.net/tc/resource/69351693>
3. 泳池安全我問你答:<https://wordwall.net/tc/resource/69354400>
4. 泳池自救遊戲室:<https://wordwall.net/tc/resource/69487321>
5. 海洋生物猜猜看:<https://wordwall.net/tc/resource/69353674>
6. 海洋環境齊保護:<https://wordwall.net/tc/resource/69351488>

Appendix 4 : Questionnaire data from parents

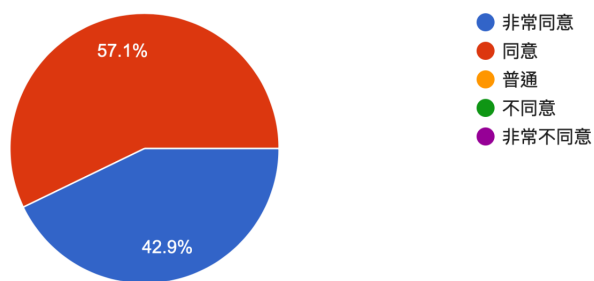
對於自閉症譜系障礙人士，你是否同意學習水上安全知識有存在必要性嗎？

14 則回應



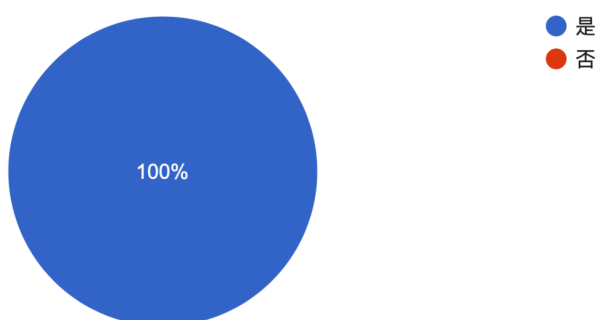
你是否同意此計劃能有助自閉症譜系障礙人士學習水上安全知識嗎？

14 則回應



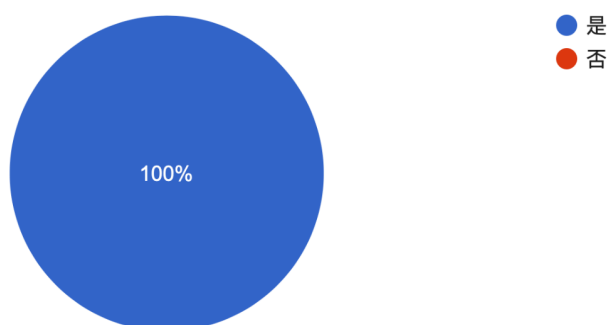
你認為此教材是否合適自閉症人士譜系障礙人士嗎？

14 則回應



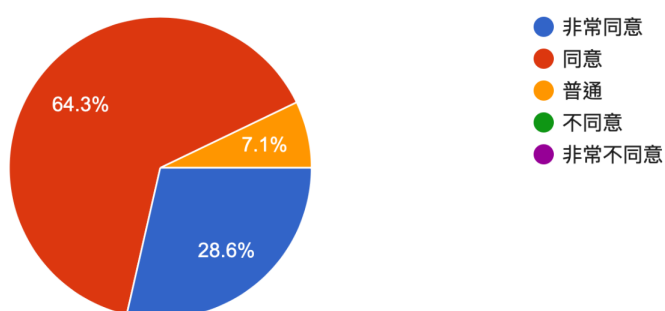
獎勵計劃是否有助提升學習動機？

14 則回應



你是否同意考核內容的程度合適自閉症譜系障礙人士？

14 則回應



你認為哪一個章別作用最大？為什麼？

14 則回應

水上安全章，對小朋友來說很重要

基礎水上安全章
最基本的知識

基礎水上安全章，因為對他們來說已經很難學習

泳池自救章，對他們來講很緊要

基礎水上安全章，最簡單，最易明白

基礎水上安全章，他們學到一定既知識

基礎水上安全章，對係水上來說很重要

基礎水上安全章，每個人都必須要學懂

水上安全用具章，最基本學習之一

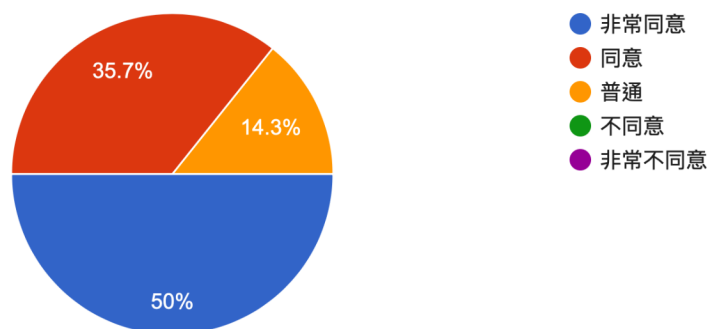
你認為哪一個章別作用最少？為什麼？

14 則回應

基礎體能章，因為平日活動已是體能之一
海上污染章 冇關係
海洋生物章 可以很多地方可學習
海洋生物章，對泳池冇關係
基礎水上安全章， 學識自救，無需再學
海上污染章，功能不大
海水污染 因為水上污染係控制不到的

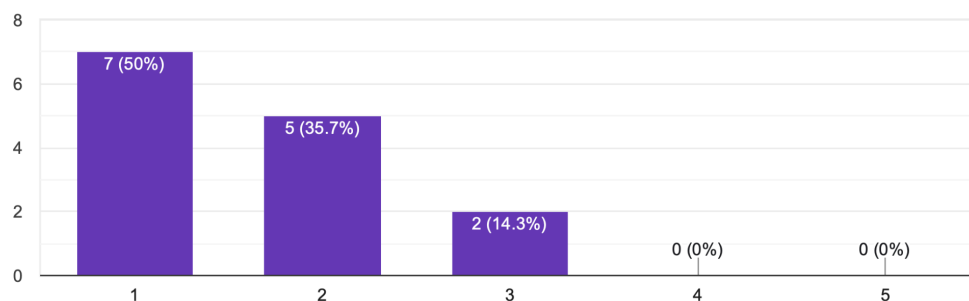
你是否同意此計劃能有助提升自閉症譜系障礙人士說話及溝通能力嗎？

14 則回應



你多大程度參與此計劃？

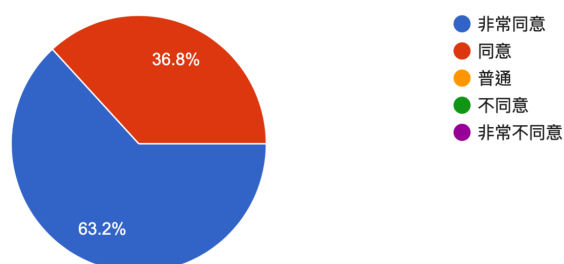
14 則回應



Appendix 5 : Questionnaire data from coaches and school teachers

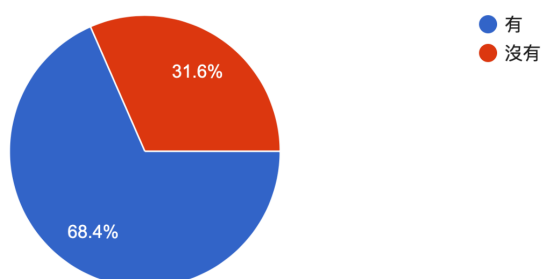
對於自閉症譜系障礙人士，你是否同意學習水上安全知識有存在必要性嗎？

19 則回應



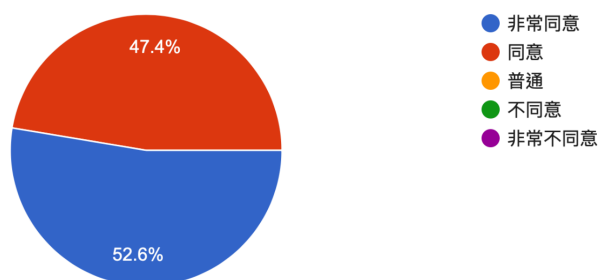
你有教授自閉症譜系障礙人士的經驗嗎？

19 則回應



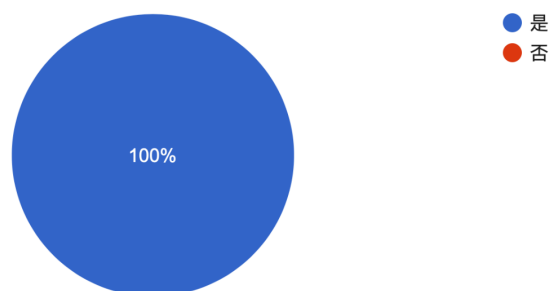
你是否同意此計劃能有助自閉症譜系障礙人士學習水上安全知識嗎？

19 則回應



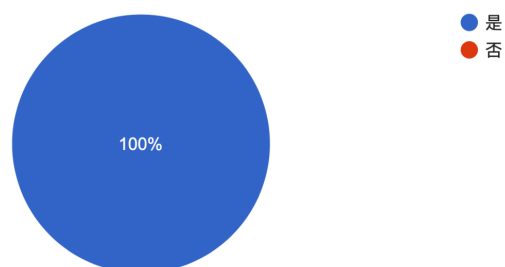
你認為此教材是否合適自閉症譜系障礙人士嗎？

19 則回應



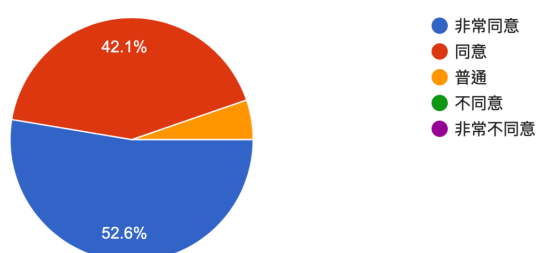
獎勵計劃是否有助提升學習動機？

19 則回應



你是否同意考核內容的程度合適自閉症譜系障礙人士？

19 則回應



你認為哪一個章別作用最大？為什麼？

19 則回應

泳池自救安章 個人安全重要性
基礎安全服務章 對學習群體方面作用大
水上安全服務章 學習團體精神
基礎水上安全章 最基本學習對象
泳池自救技章 當有危險性時能自救
泳池自救章，廣泛性最高，所有界別的人士都可以涉獵到。
基礎水上安全章

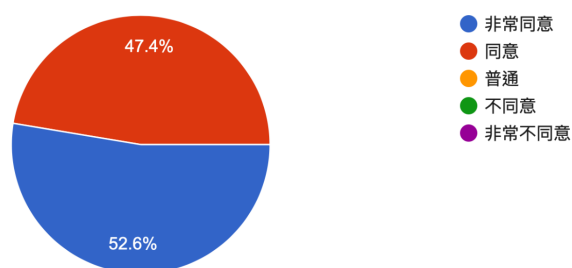
你認為哪一個章別作用最少？為什麼？

19 則回應

水上拯救章 學習基本知識為首要
水上拯救章 能力上應付不到
水上拯救章 需要作用不大
海洋生物章 可在其他地方學習
海洋污染章 可從生活中學習
海上污染章，難度較高，實用性不強。
海上污染認識章

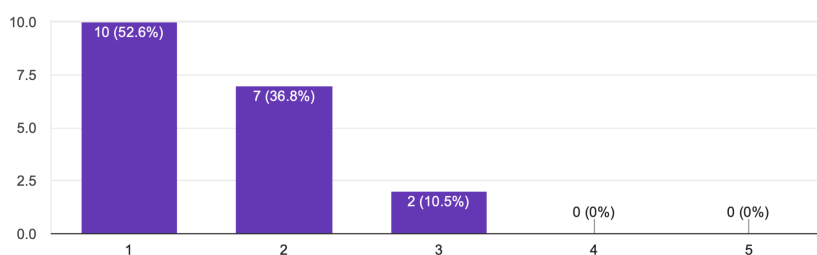
你是否同意此計劃能有助提升自閉症譜系障礙人士說話及溝通能力嗎？

19 則回應



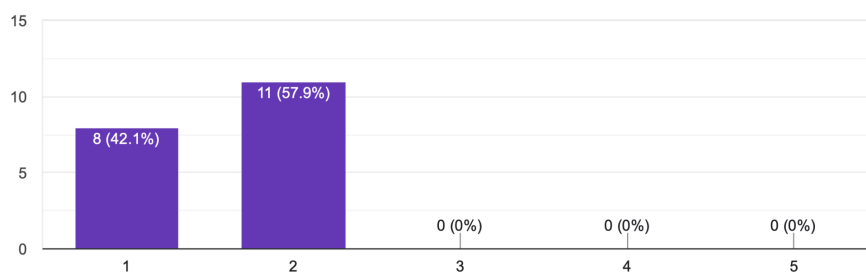
你多大程度在你的教學中使用此計劃？

19 則回應



你認為此計劃在社會推行是否可行？

19 則回應



Appendix 6 : Interview from coach in swimming classes

1. 你認同社會對於提升自閉症譜系障礙人士水上安全知識沒有足夠的資源嗎？為什麼？

ANS : 不算非常充足、游泳學習未納入必修課目

2. 你認為提升水上安全知識是否存在必要性？為什麼？

ANS: 有必要性、是生存技能之一

3. 學習資源庫的教材及考核內容的程度有需要改善的地方嗎？

ANS: 很充足及易理解、字體如果設計成可愛一點會更吸引小朋友

4. 網頁的指示有做得好/不好的地方嗎？

ANS: 指示清晰、未有不好的地方

5. 你認為實行獎勵計劃對於學習有什麼好處？

ANS: 獎勵對小朋友的學習有推動力

6. 你認為哪一個章別最大作用？

ANS : 泳池自救技巧章

7. 你會否把此推薦其他自閉症譜系障礙人士參與？

ANS: 會推薦

Appendix 7 : Pre-Test and Post-Test

Pre-Test of student 1:

水上安全獎勵計劃
學前評估

姓名： 郭凱駿 分數： 4 / 10

1. 請連線配對以下名稱及圖片。(5分)

浮板	_____		✓
浮背	_____		X
救生圈	_____		✓
救生衣	_____		✓
浮條	_____		X

2. 藍色分類回收垃圾桶代表？(請圈出答案) (1分)

A. 廢紙 B. 鋁罐 C. 膠樽 X

3. 以下那個救生方法較好？(請圈出答案) (1分)

A. 下水救生 B. 岸上救生 X

4. 以下那一個是遇溺時最重要的動作？(請圈出答案) (1分)

A. 大聲呼叫 B. 拍打水面 C. 保持鎮定 X

5. 泳池內是否可以奔跑及跳水？(請圈出答案) (1分)

A. 可以 B. 不可以 ✓

6. 以下那個是合法游泳地點？(請圈出答案) (1分)





A. 河流 B. 有救生設備及救生員的泳池及沙灘 C. 水塘 X

Post-Test of student 1:

水上安全獎勵計劃
學習成果評估

姓名： 郭凱駿 分數： 8 / 10

1. 請連線配對以下名稱及圖片。(5分)

浮板	_____		✓
浮背	_____		✓
救生圈	_____		✓
救生衣	_____		✓
浮條	_____		✓

2. 藍色分類回收垃圾桶代表？(請圈出答案) (1分)

A. 廢紙 B. 鋁罐 C. 膠樽 ✓

3. 以下那個救生方法較好？(請圈出答案) (1分)

A. 下水救生 B. 岸上救生 X

4. 以下那一個是遇溺時最重要的動作？(請圈出答案) (1分)

A. 大聲呼叫 B. 拍打水面 C. 保持鎮定 X

5. 泳池內是否可以奔跑及跳水？(請圈出答案) (1分)

A. 可以 B. 不可以 ✓

6. 以下那個是合法游泳地點？(請圈出答案) (1分)

A. 河流 B. 有救生設備及救生員的泳池及沙灘 C. 水塘 ✓

Pre-Test of student 2:

水上安全獎勵計劃
學前評估

姓名： 麥詠貞 分數： 6 /10

1. 請連線配對以下名稱及圖片。(5分)

浮板	———		✓
浮背	———		✓
救生圈	———		✓
救生衣	———		✓
浮條	———		✓

2. 藍色分類回收垃圾桶代表？(請圈出答案) (1分)

A.廢紙 B.鋁罐 C.膠樽 X

3. 以下那個救生方法較好？(請圈出答案) (1分)

A.下水救生 B.岸上救生 X

4. 以下那一個是遇溺時最重要的動作？(請圈出答案) (1分)

A.大聲呼叫 B.拍打水面 C.保持鎮定 X

5. 泳池內是否可以奔跑及跳水？(請圈出答案) (1分)

A.可以 B.不可以 ✓

6. 以下那個是合法游泳地點？(請圈出答案) (1分)



A.河流 B.有救生設備及救生員的泳池及沙灘 C.水塘 X

Post-Test of student 2:

水上安全獎勵計劃
學習成果評估

姓名： 麥詠貞 分數： 9 /10

1. 請連線配對以下名稱及圖片。(5分)

浮板	———		✓
浮背	———		✓
救生圈	———		✓
救生衣	———		✓
浮條	———		✓

2. 藍色分類回收垃圾桶代表？(請圈出答案) (1分)

A.廢紙 B.鋁罐 C.膠樽 ✓

3. 以下那個救生方法較好？(請圈出答案) (1分)

A.下水救生 B.岸上救生 ✓

4. 以下那一個是遇溺時最重要的動作？(請圈出答案) (1分)

A.大聲呼叫 B.拍打水面 C.保持鎮定 X

5. 泳池內是否可以奔跑及跳水？(請圈出答案) (1分)

A.可以 B.不可以 ✓

6. 以下那個是合法游泳地點？(請圈出答案) (1分)

A.河流 B.有救生設備及救生員的泳池及沙灘 C.水塘 ✓

Appendix 8 : Consent form of 2 students

香港教育大學
健康與體育學系
參與研究同意書

Water Safety Rewards Scheme for special education students with Autism Spectrum Disorder (ASD)

茲同意敝子弟 參加由陳靖逸負責監督，王雪詠負責執行的研究項目。她／他們是香港教育大學健康與體育學系的教員和學生。

本人理解此研究所獲得的資料可用於未來的研究和學術發表。然而本人有權保護敝子弟的隱私，其個人資料將不能洩漏。

研究員已將所附資料的有關步驟向本人作了充分的解釋。本人理解可能會出現的風險。本人是自願讓敝子弟參與這項研究。

本人理解本人及敝子弟皆有權在研究過程中提出問題,並在任何時候決定退出研究,更不會因此而對研究工作產生的影響負有任何責任。

參加者姓名：

參加者簽署：

父母姓名或監護人姓名：

父母或監護人簽署：

日期： 31/03/2024

香港教育大學
健康與體育學系
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參加者姓名：

參加者簽署：

父母姓名或監護人姓名：

父母或監護人簽署：

日期： 31/03/2024