

High school students' conference on inquiry and practice in relation to the Sustainable Development Goals (SDGs)

I. Project Background

In 2015, the United Nations identified the major global issues and proposed the Sustainable Development Goals (SDGs), which encompass three dimensions: economic growth, social progress, and environmental protection. There are a total of 17 goals, and countries will be inspected in terms of their progress and actions towards these goals by 2030.

The National Council for Sustainable Development of Taiwan's Executive Yuan has also established six transformation areas based on the "2050 World Vision." These areas include enhancing human resource capabilities, promoting a circular economy, accelerating energy transformation and decarbonization, building sustainable food and agricultural systems, developing smart cities and rural areas, and fostering a sustainable-oriented digital revolution. In 2019, various ministries collaborated to develop the "Taiwan Sustainable Development Goals" to align with international trends in sustainable development. The Ministry of Education has compiled the "Sustainable Development Goals (SDGs) Education Handbook" to help school teachers integrate the concept of the 17 SDGs into various stages of learning. The aim is to enable students to understand international trends and develop the competencies and skills necessary to address future challenges.

The content of natural science inquiry and practice courses provides students with integrated learning experiences that emphasize interdisciplinary integration. The goal is to bridge theory and practice, using practical and relevant topics and issues. Students get to acquire systematic knowledge and engage in interdisciplinary dialogue and critical thinking. The SDGs cover various important global issues, providing a practical framework for combining research and practice. In addition to basic knowledge and attitudes, students can quantify various indicators and objectives of the SDGs through experiments and research. By exploring specific problems and proposing solutions, students gain a deeper understanding of the meaning and significance of the SDGs. This process cultivates students' knowledge and skills, inspires their creativity and critical thinking, and encourages their active involvement in solving real-world problems and proposing solutions.

This event includes: 1) experts and scholars from domestic universities and the Academia Sinica sharing their teaching and research outcomes on SDGs; 2) high school students from various countries sharing their research findings on SDGs through inquiry-based learning; 3) visits to various types of social practices related to SDGs.

II. Project Objectives

- (I) To promote students' interest in and understanding of inquiry-based science and sustainable development goals, cultivate problem-solving abilities, and encourage students to focus on sustainable development issues and propose solutions.
- (II) To draw attention to the connection between science and sustainable development, promote interdisciplinary collaboration and the integration of knowledge and exchange, and inspire students' interest in integrated learning.
- (III) To establish a platform for students to present their research in the field of science, enhancing their presentation and communication skills.
- (IV) To encourage students to engage in international exchanges, offering opportunities for public presentations in English and cultivating students' competitiveness in international exchanges.

III. Organization

- (I) Supervisor: Ministry of Education, Department of K-12 Education.
- (II) Organizer: National Tainan First Senior High School
Southern Branch of the Academia Sinica
- (III) Co-organizers: To be invited.

IV. Event Details

- (I) Participation: By invitation only, including domestic and international schools.
- (II) Eligibility:
 - A. International Schools:
Students currently enrolled in (vocational) high school in their respective countries, by invitation only.
Each school can send one team consisting of one teacher and 3 to 5 students (any grade).
 - B. Domestic Schools:
Students with Taiwanese citizenship, currently enrolled in (vocational) high school, by invitation only.
Each school can send one team consisting of one teacher and 3 to 5 students (any grade).
- (III) Event Schedule
 - A. Check-in Time/Location:
 - (A) International Schools:
July 7, 2024 (Sunday) 13:00-16:00 / National Tainan First Senior High School
 - (B) Domestic Schools:
July 8, 2024 (Monday) 9:30-10:00 / National Tainan First Senior High School
 - B. Event Dates:
 - (A) Day 1: July 8, 2024 (Monday) 9:00-20:00
 - (B) Day 2: July 9, 2024 (Tuesday) 9:00-17:30
 - (C) Day 3: July 10, 2024 (Wednesday) 9:00-15:00
 - C. Conclusion: July 10, 2024 (Wednesday) 15:00
- (IV) Accommodation Information:
 - A. International Schools:
Teachers will be accommodated in hotels arranged by the event organizers.
Students will be accommodated with host families, in dormitories, or hotels.
Accommodation dates: July 7, 2024 (Sunday) to July 9, 2024 (Tuesday)
 - B. Domestic Schools: Please arrange accommodation on your own.
- (V) Shuttle Service Details:
 - A. International School Students and Teachers:
Arrival: July 7, 2024 (Sunday), From Tainan High-Speed Rail Station to National Tainan First Senior High School
Departure: July 10, 2024 (Wednesday), From SDGs Visit Site to Tainan High-Speed Rail Station
 - B. Domestic School Students and Teachers:
Arrival: July 8, 2024 (Monday), From Tainan High-Speed Rail Station to National Tainan First Senior High School
Departure: July 10, 2024 (Wednesday), From SDGs Visit Site to Tainan High-Speed Rail Station

V. Registration

- (I) Registration Period: From now until March 20, 2024 (Wednesday).
- (II) Registration Information: Contact information of teachers and students, photos, titles of students' learning outcomes, SDGs category, and a summary of content.
- (III) Registration Link: <https://forms.gle/mJtuctW9nNu4gYuv9>

VI. Submission of Works

- (I) Work Content: Inquiry and practice learning outcomes related to SDGs topics in either natural or social domains (or interdisciplinary ones), preferably with a focus on the local area of the school.
- (II) Work Description: From the perspective of the students, provide a brief introduction to the topic of inquiry, explain the research process, learning outcomes, and self-reflection.
- (III) Submission Requirements:
 - A. Team Introduction: Please write in English and present in a PPT file no more than two pages, including

information about the instructor, team members and their respective roles and responsibilities, and a team photo.

B. Research Paper: Please write in English, limited to 4 to 10 pages, in the form of PDF file. Refer to Attachment I for format guidelines.

C. Poster Presentation: Please write in English, in the form of PDF file, with a slideshow file and photos of the outcome. Refer to Attachment II for formatting guidelines. The posters will be brought back by each school after the event.

D. Authorization Consent: Each team must submit this form along with their works. Refer to Attachment III for the format.

(IV) Submission Deadline: Please upload the data and photos to Google Drive by April 30, 2024 (Tuesday).

(V) Data Submission Link: <https://forms.gle/RG8s35sJQo5X7F7H8>

VII. Presentation

(I) Presentation Time: Each group will have a maximum of 12 minutes for the presentation in English.

(II) Presentation Equipment: Please use the equipment provided by the conference organizers.

(III) Presentation Slides Format: Please write in English and avoid using animations.

(IV) Submission Deadline: Please provide a PDF file and upload it to Google Drive by July 1, 2024 (Monday).

(V) Presentation Submission Link: <https://forms.gle/tAyMHe6Zk3FzqdjK7>

VIII. Other Notes

The organizers reserve the right to make final modifications and changes to the content of this event. If there are any changes, additional information will be sent to the teachers' contact email addresses.

IX. Event Schedule

Day 1: July 8, 2024 (Monday)	
Time	Agenda
09:30-10:00	Registration
10:00-10:30	Opening Ceremony
10:30-12:00 (90mins)	Keynote Speech
12:00-13:00	Lunch Break
13:00-14:30 (90mins)	Research Presentations Session 1 Student Groups 1-6 Each group will have a 12-minute presentation time, followed by a 10-minute overall critique and an 8-minute Q&A session.
14:30-14:50	Tea Break
14:50-16:20 (90mins)	Research Presentations Session 2 Student Groups 7-12 Each group will have a 12-minute presentation time, followed by a 10-minute overall critique and an 8-minute Q&A session.
16:20-16:40	Tea Break

16:40-18:10 (90mins)	Research Presentations Session 3 Student Groups 13-18 Each group will have a 12-minute presentation time, followed by a 10-minute overall critique and an 8-minute Q&A session.	
18:10-20:00	Dinner Party	
Day 2: July 9, 2024 (Tuesday)		
Time	Agenda	
9:30-10:00	Registration	
10:00-11:30 (90mins)	Research Presentations Session 4 Student Groups 19-24 Each group will have a 12-minute presentation time, followed by a 10-minute overall critique and an 8-minute Q&A session.	
11:30-13:00	Lunch Break	
13:00-14:30 (90mins)	Research Presentations Session 5 Student Groups 25-30 Each group will have a 12-minute presentation time, followed by a 10-minute overall critique and an 8-minute Q&A session.	
14:30-15:00	Tea Break	
15:00-17:00 (120mins)	Students	Student Group Discussions on Inquiry and Practice (Divided into three groups based on the three categories of SDGs: Economic Growth, Social Progress, and Environmental Protection)
	Teachers	Sharing of Inquiry and Practice Teaching Experiences
	Principal and Directors	Sharing of Experiences in Promoting Inquiry and Practice Curricula
17:00-17:30	Closing Ceremony	
Day 3: July 10, 2024 (Wednesday)		
Time	Agenda	
9:00-09:30	Registration	
09:30-11:30	Visit to Sites for SDGs Inquiry and Practice	
11:30-13:00	Lunch Break	
13:00-15:00	Visit to Sites for SDGs Inquiry and Practice	
15:00	Shuttle Service: Visit Locations to Tainan High-Speed Rail Station	

High school students' conference on inquiry and practice in relation to the Sustainable Development Goals (SDGs)— Attachment I: Guidelines for Mini Research Paper Format ACM Word Template for SIG Site

1st Author	2nd Author	3rd Author	Instructor
1st author's affiliation	2nd author's affiliation	3rd author's affiliation	3rd author's affiliation
1st line of grades	1st line of grades	1st line of grades	Main Teaching Subject
2nd line of class	2nd line of class	2nd line of class	
1st author's E-mail address	2nd E-mail	3rd E-mail	Instructor's E-mail

ABSTRACT

In this paper, we describe the formatting guidelines for ACM SIG Proceedings.

Keywords

Keywords are your own designated keywords separated by semicolons (“;”).

1. INTRODUCTION

The proceedings are the records of the conference. ACM hopes to give these conference by-products a single, high-quality appearance. To do this, we ask that authors follow some simple guidelines. In essence, we ask you to make your paper look exactly like this document. The easiest way to do this is simply to download a template from [2], and replace the content with your own material.

2. PAGE SIZE

All material on each page should fit within a rectangle of 18 × 23.5 cm (7" × 9.25"), centered on the page, beginning 1.9 cm (0.75") from the top of the page and ending with 2.54 cm (1") from the bottom. The right and left margins should be 1.9 cm (.75"). The text should be in two 8.45 cm (3.33") columns with a .83 cm (.33") gutter.

3. TYPESET TEXT

3.1 Normal or Body Text

Please use a 9-point Times Roman font, or other Roman font with serifs, as close as possible in appearance to Times Roman in which these guidelines have been set. The goal is to have a 9-point text, as you see here. Please use sans-serif or non-proportional fonts only for special purposes, such as distinguishing source code text. If Times Roman is not available, try the font named Computer Modern Roman. On a Macintosh, use the font named Times. Right margins should be justified, not ragged.

3.2 Title and Authors

The title (Helvetica 18-point bold), authors' names (Helvetica 12-point) and affiliations (Helvetica 10-point) run across the full width of the page – one column wide. We also recommend phone number

(Helvetica 10-point) and e-mail address (Helvetica 12-point). See the top of this page for three addresses. If only one address is needed, center all address text. For two addresses, use two centered tabs, and so on. For more than three authors, you may have to improvise.¹

3.3 Subsequent Pages

For pages other than the first page, start at the top of the page, and continue in double-column format. The two columns on the last page should be as close to equal length as possible.

Table 1. Table captions should be placed above the table

Graphics	Top	In-between	Bottom
Tables	End	Last	First
Figures	Good	Similar	Very well

3.4 References and Citations

Footnotes should be Times New Roman 9-point, and justified to the full width of the column.

Use the “ACM Reference format” for references – that is, a numbered list at the end of the article, ordered alphabetically and formatted accordingly. See examples of some typical reference types, in the new “ACM Reference format”, at the end of this document. Within this template, use the style named *references* for the text. Acceptable abbreviations, for journal names, can be found here: <http://library.caltech.edu/reference/abbreviations/>. Word may try to automatically ‘underline’ hotlinks in your references, the correct style is NO underlining.

The references are also in 9 pt., but that section (see Section 7) is ragged right. References should be published materials accessible to the public. Internal technical reports may be cited only if they are easily accessible (i.e. you can give the address to obtain the report within your citation) and may be obtained by any reader. Proprietary information may not be cited. Private communications

¹ If necessary, you may place some address information in a footnote, or in a named section at the end of your paper.

should be acknowledged, not referenced (e.g., “[Robertson, personal communication]”).

3.5 Page Numbering, Headers and Footers

Do not include headers, footers or page numbers in your submission. These will be added when the publications are assembled.

4. FIGURES/CAPTIONS

Place Tables/Figures/Images in text as close to the reference as possible (see Figure 1). It may extend across both columns to a maximum width of 17.78 cm (7”).

Captions should be Times New Roman 9-point bold. They should be numbered (e.g., “Table 1” or “Figure 2”), please note that the word for Table and Figure are spelled out. Figure’s captions should be centered beneath the image or picture, and Table captions should be centered above the table body.

5. SECTIONS

The heading of a section should be in Times New Roman 12-point bold in all-capitals flush left with an additional 6-points of white space above the section head. Sections and subsequent subsections should be numbered and flush left. For a section head and a subsection head together (such as Section 3 and subsection 3.1), use no additional space above the subsection head.

5.1 Subsections

The heading of subsections should be in Times New Roman 12-point bold with only the initial letters capitalized. (Note: For subsections and subsubsections, a word like *the* or *a* is not capitalized unless it is the first word of the header.)

5.1.1 Subsubsections

The heading for subsubsections should be in Times New Roman 11-point italic with initial letters capitalized and 6-points of white space above the subsubsection head.

5.1.1.1 Subsubsections

The heading for subsubsections should be in Times New Roman 11-point italic with initial letters capitalized.

5.1.1.2 Subsubsections

The heading for subsubsections should be in Times New Roman 11-point italic with initial letters capitalized.

6. ACKNOWLEDGMENTS

Our thanks to ACM SIGCHI for allowing us to modify templates they had developed.

7. REFERENCES

- [1] Bowman, M., Debray, S. K., and Peterson, L. L. 1993. Reasoning about naming systems. *ACM Trans. Program. Lang. Syst.* 15, 5 (Nov. 1993), 795-825. DOI=<http://doi.acm.org/10.1145/161468.16147>.

Combined Virtual Mall

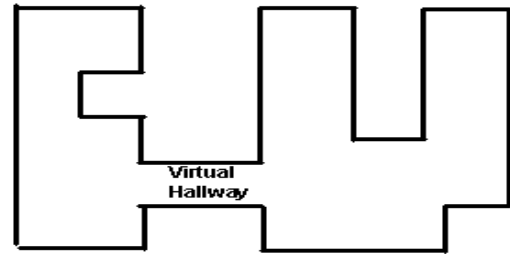


Figure 1. Insert caption to place caption below figure.

- [2] Ding, W. and Marchionini, G. 1997. *A Study on Video Browsing Strategies*. Technical Report. University of Maryland at College Park.
- [3] Fröhlich, B. and Plate, J. 2000. The cubic mouse: a new device for three-dimensional input. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (The Hague, The Netherlands, April 01 - 06, 2000). CHI '00. ACM, New York, NY, 526-531. DOI=<http://doi.acm.org/10.1145/332040.332491>.
- [4] Tavel, P. 2007. *Modeling and Simulation Design*. AK Peters Ltd., Natick, MA.
- [5] Sannella, M. J. 1994. *Constraint Satisfaction and Debugging for Interactive User Interfaces*. Doctoral Thesis. UMI Order Number: UMI Order No. GAX95-09398., University of Washington.
- [6] Forman, G. 2003. An extensive empirical study of feature selection metrics for text classification. *J. Mach. Learn. Res.* 3 (Mar. 2003), 1289-1305.
- [7] Brown, L. D., Hua, H., and Gao, C. 2003. A widget framework for augmented interaction in SCAPE. In *Proceedings of the 16th Annual ACM Symposium on User Interface Software and Technology* (Vancouver, Canada, November 02 - 05, 2003). UIST '03. ACM, New York, NY, 1-10. DOI=<http://doi.acm.org/10.1145/964696.964697>.
- [8] Yu, Y. T. and Lau, M. F. 2006. A comparison of MC/DC, MUMCUT and several other coverage criteria for logical decisions. *J. Syst. Softw.* 79, 5 (May. 2006), 577-590. DOI=<http://dx.doi.org/10.1016/j.jss.2005.05.030>.
- [9] Spector, A. Z. 1989. Achieving application requirements. In *Distributed Systems*, S. Mullender, Ed. ACM Press Frontier Series. ACM, New York, NY, 19-33. DOI=<http://doi.acm.org/10.1145/90417.90738>.

High school students' conference on inquiry and practice in relation to the Sustainable Development Goals (SDGs)— Attachment II: Poster Presentation Format

School Name	
Title of Paper	
Instructor of Paper	
Students' Names	
Content	This project focuses on the exploration of a specific topic related to the Sustainable Development Goals (SDGs). In this exhibition, we aim to provide a concise overview of our exploration and showcase our learning outcomes. I. Overview of the Topic for Exploration: Please provide a brief summary of the chosen topic, highlighting its significance and specific goals you aim to achieve. II. Exploration Process: (I) Idea Generation and Confirmation: Please explain how you developed and finalized your exploration topic. (II) Description of the Exploration Process: Please outline the step-by-step process you followed during exploration, including research, data collection, experiments, or any other relevant activities undertaken. (III) Challenges Encountered: Please discuss the challenges you faced during exploration, such as limited resources, time constraints, or technical difficulties. (IV) Problem-Solving Journey: Please share how you overcame the challenges encountered during the exploration process. This section will highlight your problem-solving strategies, innovative approaches, or collaborations that helped you overcome obstacles. III. Learning Outcomes: (I) Description of Outcomes: Please present a comprehensive description of your learning outcomes, explaining the findings or solutions you obtained through exploration. (II) Things Worth Sharing: Please highlight specific aspects of your learning outcomes that you believe are worth sharing, such as innovative ideas, unique approaches, or significant contributions to the chosen topic. IV. Reflection: (I) Areas for Improvement: Reflect on the exploration process and identify areas that could be improved. This may include modifications to methodology, data analysis, or other aspects of the exploration.

	(II) Potential Extensions: Discuss areas within your topic that could be further explored or expanded upon. (III) Relevance to Future Exploration Topics: Reflect on how your exploration and learning experiences have contributed to your understanding of other potential exploration topics. Discuss the knowledge, skills, or insights gained that could be applied to future exploration projects. Please note: The final content may be adjusted to fit the available space on the 110x180 cm or 85x180 cm poster.		
Photos of Outcomes	Please provide captions for the photos. To ensure clear image resolution when printing, please upload at least 3 photos of the original file separately on the Google Form. The photos should have a clear subject and be at least 1.2MB in size.		
	Photo	Photo	Photo
	Description	Description	Description
Link/ QR-code to Extra Materials	Attach here links or QR-codes for supporting materials or videos related to learning outcomes.		

**High school students' conference on inquiry and practice
in relation to the Sustainable Development Goals (SDGs)—
Attachment III: Authorization Consent**

I, _____
(hereinafter referred to as "the undersigned"), hereby agree to participate in the "High school students' conference on inquiry and practice in relation to the Sustainable Development Goals (SDGs)".

I agree to and acknowledge the following terms:

- I. The authorization for public transmission and unrestricted access by the general public through various media.
- II. The right to appropriately edit and modify the authorized material.
- III. The perpetual and free authorization to "National Tainan First Senior High School" and its affiliated institutions for unlimited time and usage, including public broadcasting, public display, public presentation, distribution, and publication.
- IV. The authorization period is indefinite, and the authorized region is Taiwan.
- V. Any matters not covered in this authorization shall be handled in accordance with relevant laws and regulations. In case of any doubts or disputes, they shall be resolved through mutual agreement between the authorizer and this school. Any changes or additions to the content of this authorization shall require written consent from both the authorizer and this school.

Signatory:

ID/Passport Number:

Legal Guardian:

ID/Passport Number:

Date: _____

(Date/Month/Year)