NEWSLETTER

E·A·S·E East-Asian Association for Science Education

East-Asian Association for Science Education, Vol.14, No.1 March, 2021

ASTE

President Message

Greetings!! Congratulation on the new issues of EASE.!! Please enjoy reading new news letter from EASE!!

Also, it is my great honor to announce the 2021 International Zoom Conference East-Asian Association for Science Education, Shizuoka, Japan. As you have known that 2020 IC EASE at Korea was canceled because of COVID 19. We are all straggling with the unbelievable difficulties in all of the activities as human beings. We are all living in the middle of historical epoch within the time of great changes of Global community.

Our theme this time is settled down as “Asian Collaboration Towards the Development of New Science Education for the Future; Wise Preparation with SDGs/STEM”. This theme has strong connection not only with the COVID 19, but also with rapid changes of Science, Technology, Engineering, Liberal Arts, and Mathematics toward SDGs. We will be able to find good solutions towards many issues that coming up globally. Those issues and problems cannot find proper solutions without good collaborations among all of the countries in the world. Please take a look on Page19 of this EASE newsletter and visit the EASE HP for the IC EASE!!

YOSHISUKE KUMANO Ph.D.
President of East-Asian Association of Science Education

Table of Contents

Editorial Board

Publisher

East-Association for Science Education
東亞科學教育學會
ISBN: 2227-751X

Address (Headquarter)

Education Faculty K building 601, Shizuoka University, Ohya 836, Shizuoka Prefecture, Shizuoka City, 4228529, Japan

Homepage

http://theease.org/

Join EASE!

If you want to be a member of EASE, contact us at waichin@eduhk.hk.

A collaborative science program that promotes preservice science teachers' and middle school students' learning through inquiry

Sachiko Tosa, Niigata University, Japan

Teachers need to develop multiple knowledge and skills for successful science teaching. Especially for pre-service science teachers in middle schools in Japan, the abilities to acquire for science teaching during the college education become more complexed as the new Course of Study emphasizes "student-centered, interactive, and deep understanding of the subject matter" through scientific inquiry (MEXT, 2017). Pre-service teachers in science are expected to acquire not only general pedagogical knowledge and content knowledge in four subject areas of science (physics, chemistry, biology, and geology), but also pedagogical content knowledge, such as effective questioning techniques for each science topic to help students understand the content deeply and actively through interactions with other students. Pre-service science teachers are also expected to acquire abilities to help students conduct scientific inquiry that includes generating questions, making hypotheses, conducting experiments, and drawing conclusions based on the evidence. It is clear that four weeks of student teaching are not sufficient for pre-service science teachers in Japan to practice these expected knowledge and skills in the actual teaching situations.

In Science Education Research group at Niigata University in Japan, a program has been set-up to help pre-service science teachers practice their knowledge and skills for science teaching at a middle school. The program consists of four sessions in a year, and each session includes science teaching of a more advanced topic in four areas of science for two classes. In one session, two pre-service teachers are assigned as the main teachers and other pre-service teachers work as a teaching assistant for each of the student groups. Together as a team the pre-service teachers develop their original lessons including safe and effective experiments for students to conduct. This is a collaborative program between the middle school and the university for mutual benefit. For the pre-service teachers at the university, the program provides them with opportunities to practice their knowledge and skills for science teaching. The teaching experience itself and feedback they received from the students are excellent sources for them to improve their teaching. Often times, students' enthusiasm for learning science raises preservice teachers' motivation to be a science teacher. For the middle school, the program provides their students with opportunities to learn science in different ways through the interaction with college students. In fact, the program is described as one of the featured activities in the school brochure. Also, the program often helps in-service teachers at the middle school learn research-based instructional strategies such as the use of student discussions and technology.

Table 1 shows the topics implemented in the science program in 2018-20 As you can see in the table, the topics covers the four areas of science. Each of the sessions includes a number of creative instructional strategies in an 80-minute lesson to help students learn the topic actively and deeply through scientific inquiry. For example, in September, 2019, a lesson about photosynthesis was developed and implemented. In order to help students understand the complicated chemical reactions of photosynthesis, particle models of the chemical substances were used (Figure 1). Students actually moved the circles representing the atoms in the molecules to learn how carbon-dioxide transforms into glucose in the process. The team of pre-service teachers developed such effective instructional strategies slowly and steadily through trials and errors in a number of mock lessons. The team usually started to develop a lesson in a month ahead, and 8 to 9 mock lessons were conducted before the actual implementation of the lesson. The main teachers spent considerable time to practice how to talk in the lesson to capture student attention and to leverage students' responses for development of the lesson.

The intense process of the program helps the pre-service teachers see science teaching in much deeper ways than before. Especially the pre-service teachers who taught the lesson as the main teachers often exhibit the transformation on their beliefs about teaching from a teacher-centered way to a student-centered way. One of the graduates of our research group said that the experience he had through the program put him ahead of other people when he started his job as a teacher.

Table 1. Topics of the science program in 2018-20

Month/Year	Topic	Area
5/2018	Fluorescent light	Chemistry
10/2018	Liquidizing soil	Geology
12/2018	Why does a curve ball curve (Magnus effect)?	Physics
2/2019	Bone hearing	Biology
5/2019	Color flame	Chemistry
10/2019	Photosynthesis	Biology
12/2019	Building structure that endures earthquakes	Geology
2/2020	Static electricity	Physics

Figure 1. Particle model used to help students understand the process of photosynthesis

Unfortunately, we did not collect empirical data to show the effectiveness of the program. However, anecdotal evidence suggests that the practice included in this program helps pre-service teachers become more effective and confident as a science teacher. It is hoped that the program like this will become available for every pre-service teacher who wants to improve their knowledge and skills for effective science teaching.

Reference:

Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2017), Course of study, https://www.mext.go.jp/en/policy/education/elsec/title02/detail02/1373859.htm

Figure 2. Preservice teachers working as a team

Learning experiences with the lasting effect in the marine museum interactive interpretation tour

Yi-Ting Pan, National Sun Yat-sen University

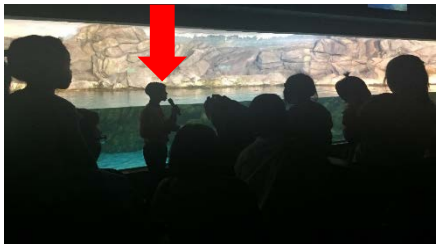
Interpretation is a popular, widely used and small budget intervention in non-formal learning venues. It has been broadly utilized for communicating ideas and feelings to visitors with the intent of enriching their understanding and appreciation of the world and their place in it. Many studies have shown that interpretative activities offered by museums, zoos and aquariums, play an important role in enhancing visitors' positive conservation attitudes, environmental knowledge, pro-environmental behaviors, and increased the connection to nature (Ballantyne, Hughes, Lee, Packer, & Sneddon, 2018; Hvenegaard, 2017). An effective interpretation with a specific theme has the potential to inspire visitors' awareness of environmental issues and to encourage pro-environmental behaviors. However, few studies have evaluated the positive impacts of non-formal museum/zoo/aquarium type learning experiencing, especially the lasting effect, on visitors' post-visit environmental attitudes and behavior.

In 2017, the popular marine science museum in Taiwan, National Museum of Marine Biology and Aquarium (NMMBA), cooperated with our research team from National Sun Yat-sen University, Kaohsiung, Taiwan, to investigate the lasting effect on visitors' experiences and environmental behaviors through the interactive interpretation. The Seals interactive interpretation was selected as the target context due to the high level of interactivity within this presentation between marine animals, handlers, interpreters and visitors. Seals' interpretative contents followed TORE model and focused on marine conservation-themed content knowledge. This activity used the analogical or metaphoric interpretive ways to evoke visitors' environmental responsibility and conservation.

Our investigation focused on how the experiences by seals' interactive interpretation impacted on visitors' marine environmental attitudes, pro-environmental behaviors, and their post-visit attitudinal and behavioral transformation. The study was conducted in three stages to collect quantitative and qualitative data through on-site questionnaire (Stage 1), on-line survey (Stage 2), and follow-up interview (Stage 3) of visitors' tour experiences in this museum at Taiwan. If the participants of the study would be willing to keep in contact with our research team for the follow-up survey (Stage 2) and interview (Stage 3), they were asked to provide the email address.

(a) Molly & Charlotte

(c) Interpreter (outside)



(b) On-site questionnaire

(d) Handler (inside)

Figure 1. Seals interactive interpretation in the National Museum of Marine Biology and Aquarium. (a) Seals named Molly and Charlotte (b) Outside seal pool for inviting visitors participating the on-site questionnaire. (c) Interpreter (outside with the visitors) (d) Handler (inside with seals)

The study investigated visitors' attitudes toward marine conservation, such as interest, engagement, intentions/ post-visit behaviors and marine connectedness. The results revealed some relationships amongst visitors' engagement, interest, conservation intentions and sense of connectedness through their on-site interactive tour experiences. When visitors had higher engagement experiences and marine conservation interest not only inspired their conservation intention but also enhanced feelings of connectedness with the marine environment as an immediate effect. More importantly, such engagement experiences, interest and conservation intentions continued to influence their post-visit behaviors and self-perception of connecting to the marine environment as our delayed surveys showed.

According to the visitors' interview results, the seals' interactive interpretation was seen by the participants as an opportunity for reflection on the relationships among human beings, related habitat and ecology and the natural environment. Those visitors who engaged in greater reflection on their museum interpretative experienced increased marine conservation interest which further impacted on their marine conservation behaviors. Feeling inspired by and highly engaged with the museum experience was a key driver for acting on more pro-environmental behaviors. Therefore, it would be useful for future research to conduct experimental studies exploring the design and effectiveness of museum learning programs focused on inspiration and engagement. Through exploring visitors' transformative learning process, it would be useful for providing evidence-based suggestions for informal learning settings educators to develop effective interpretation and learning plan. This study provides meaningful information to museum, environmental and marine educators in consideration of effective museum learning resources that can enhance visitors' marine conservation interest and further attracting them with deeper engagement experiences in learning, leading to positive effects on their environmental behavioral changes. Finally, developing museum learning resources and post-visit supportive resources to push forward longer-term or persisting environmental behaviors would be the important missions for educators. The important results of this study and related research are summarized and visualized as Figure 2.

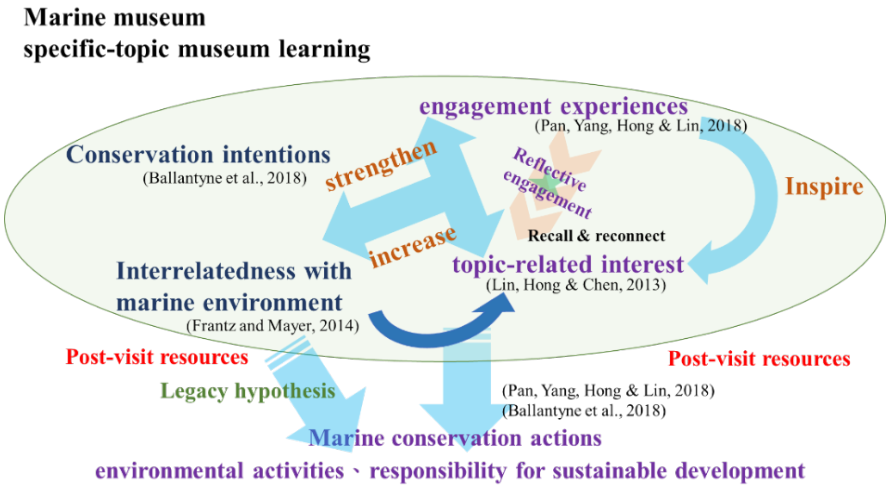


Figure 2. Visualization of the summary of important results of this study and related research.

References:

Ballantyne, R., Hughes, K., Lee, J., Packer, J., & Sneddon, J. (2018). Visitors' values and environmental learning outcomes at wildlife attractions: Implications for interpretive practice. Tourism Management, 64, 190–201.

Hvenegaard, G. T. (2017). Visitors' perceived impacts of interpretation on knowledge, attitudes, and behavioral intentions at Miquelon Lake Provincial Park, Alberta, Canada. Tourism and Hospitality Research, 17(1), 79–90.

Pan, Y.T., Yang, K-K, Kimberley, W., Hong, Z-R & Lin, H-S (2020). The impact of museum interpretation tour on visitors' engagement and post-visit conservation intentions and behaviours. *International Journal of Tourism Research, 22*(5), 593-603. DOI: https://doi.org/10.1002/jtr.2358

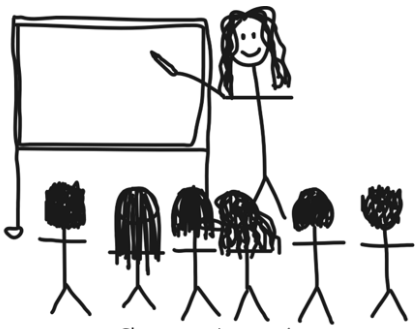
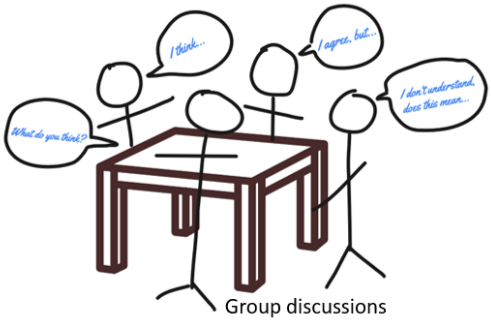
An online international teaching initiative on communication in the science classroom

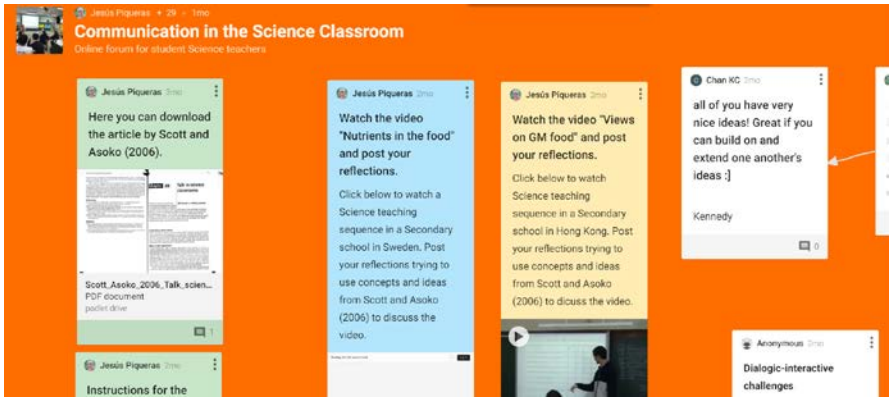
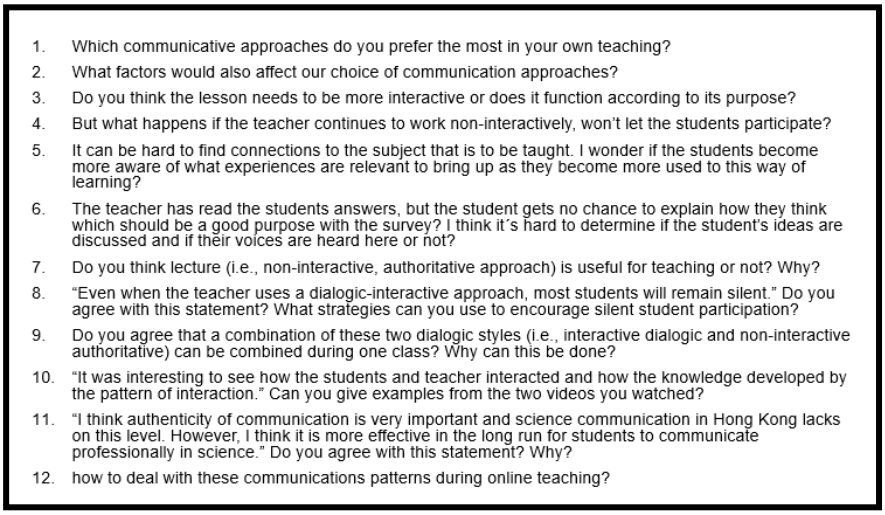
Jesús Piqueras, Stockholm University
Kennedy Chan, The University of Hong Kong

Effective classroom talk is critical to facilitating students' meaningful learning of science (Mortimer & Scott, 2003). However, orchestrating effective classroom talk is a complex endeavour. Teachers need to move skillfully between different types of communicative approaches (i.e., dialogic and authoritative interactions) to support students' meaningful learning of disciplinary knowledge and address different teaching purposes simultaneously (Scott et al., 2006). Although talk is an important tool for promoting student learning, many teachers lack deep understanding about talk and strategies to implement effective talk in the classroom (Mercer et al., 2009). Some scholars have advocated the importance of introducing to student teachers (STs) the ideas of effective classroom talk in initial teacher education (Lehesvuori, et al., 2011).

This article describes an online teaching initiative jointly organised by science teacher educators at Stockholm University in Sweden and the University of Hong Kong to support STs' learning about communicative approaches in science teaching. Also, throughout the virtual exchange between students from these two regions, this initiative aimed to promote the development of international, cross-cultural perspectives in the university courses (Commander et al., 2016). Eighteen STs enrolled in a Master's programme in Science Education in Sweden and twelve Post-graduate Diploma of Education (PGDE) STs in Hong Kong met virtually in two Zoom Seminars to discuss issues related to communication in the science classroom. During six days between the first and the second Zoom Seminar, the STs performed analysis of two video clips showing sequences from school science teaching in Sweden and Hong Kong. Additionally, the STs posted reflections on the two video clips in the sharing platform *Padlet.* Table 1 outlines the major activities of the teaching initiative:

Table 1. Major activities in the teaching initiative

Activity	Brief description
Pre-Zoom Seminar 1 Preparatory task	• STs individually made a simple drawing that represents their experiences of learning science in secondary schools  Lab Demonstration  Classroom Interactions  Doing lab work individually/in pairs (Self-inquiry)  Group discussions
Zoom Seminar 1	• STs shared their drawings as well as their secondary school learning experience and their teaching experience in breakout rooms of 4-5 with STs from the two regions

Pre-Zoom Seminar Preparatory Task	• Students individually watched two short video clips of in-service science teachers, one from Hong Kong and the other from Sweden. The videos showed different communicative approach: non-interactive dialogic and interactive dialogic talk. Students also read the literature on classroom communication (Scott & Asoko, 2006) and shared ideas and reflections by contributing posts in *Padlet* (https://padlet.com/). 
Zoom Seminar 2	• A number of questions were generated based on the STs' reflection posed on *Padlet*. In break out rooms, the STs were asked to discuss the questions related to the different approaches to developing communication in the science classroom. They were free to choose to focus on some questions that were most pertinent to their group. 

Student teachers' views and reflections

After Zoom Seminar 2, the STs completed an anonymous online survey where they were asked to describe their own learning experience from the online activities, as well as the experience of interacting with STs from another country in the analysis and discussions of educational issues. The following comments illustrate some representative views:

> I find it interesting that the education system of HK and Sweden are so different. We found Swedish education so free and motivating, while Swedish groupmates liked the way of HKDSE [public examination in Hong Kong] that students get a clearer vision of what they are going to learn and aim for. [It was] [i]nteresting to see and hear about different teaching philosophies and what students from the other country thinks is important [in the teaching and learning processes].
>
> The Swedish teachers and us have exchanged ideas of their teaching in class and our experience in school. They have some alternative thought with us, such as whether the use of lecture should be used when teaching less capable students.

Above, the STs were commenting on the differences in education system and the views about the use of classroom talk among teachers in the two regions. Exposure to different viewpoints triggered STs'

identification of their own views and values as well as their reflection on their viewpoints. Apart from the salient differences in viewpoints, the STs also identified similarities among the two regions, as illustrated by the following comments:

> Yes, it [the virtual exchange] broadened my perspectives. We shared about the common teaching style (IRE) [initiation-response-evaluation] through zoom verbally and visually.
> It is nice to know the [common] science communication approach and education atmosphere in Sweden.
> After the sharing from the Swedish student teachers, I found the students from western countries were also similar with [those in] Hong Kong. Before that, I thought the western students were very engaging and asked many questions during lessons. [It] [t]urned out [that] similar problems do not limit to nations.

From the quotes above, it can be inferred that the STs were able to notice common communicative approaches adopted by teachers in the two countries and the difficulties of orchestrating productive classroom talk. In summary, it seems that the STs started to recognize the extensively used IRE pattern in science classroom and have become more aware of the challenges of engineering productive classroom discourse. The STs also commented on the video analysis and reflection task. See the following illustrative comments:

> Through the zoom seminars and reflections in Padlet, we were exposed to the similarities and differences between communication approaches in the classroom.
> It was interesting to see how the different teaching sequences [in the videos] were interpreted by different students. Everyone made interesting observations and I would see that we co-evolved. It really was an interthinking experience.
> I like sharing reflection in Padlet. it is always nice to know how other people think especially having different cultures and background. Afterwards, we discussed the questions raised by students in the class. One group shared their thought on the question I raised. They shared more approaches than I could thought of before and gave me insight.

The first comment refers to the different communicative approaches adopted by the Swedish teacher and the Hong Kong teacher in the video clips, which were purposefully chosen to illustrate the variations in dialogic interactions. The second and third comments highlight how the differences in interpretations by the STs served as the ingredients for further dialogues among the STs in the Zoom Seminar 2, where the STs further unpacked what was happening in the video clips. Describing the analysis of teaching sequences and Zoom Seminar 2 as ‘an interthinking experience’ provides evidence how these two joint activities allowed STs to develop more insights and approaches than what the STs could think of individually. Although the STs highly valued the opportunities to meet students from another country in online discussions, they also suggested improvements in the setting to enrich the discussions, for instance, the need of more knowledge about other aspects of their peers’ education system such as curriculum and instructional strategies.

> Actually, I think before the start of breakout room sharing. Is it possible that we could know some sharing on the secondary school curriculum and science education in both Sweden and HK before we break out and discuss. I believed this could help the discussion afterwards.
> Content-wise, I think apart from focusing on communication approaches, we could also discuss some instructional strategies and compare our science curriculum.

From this limited analysis of the survey, we can conclude that the online international teaching initiative broadly achieved its aim in providing a platform for Hong Kong and Swedish STs to exchange their ideas about classroom talk and, thereby, to deepen their understanding of the different communicative approaches in science classroom. As in similar studies and experiences, this online teaching initiative with students from different regions turned out to be an affordable and accessible method to "bring the world to the classroom" and to internationalize course content in a systematic way (Svensson & Wihlborg, 2010). Furthermore, the STs participating in this teaching initiative started to develop international, cross-cultural perspectives through

meeting and discussing with STs from another region (Commander et al., 2016). We plan to build on this years' experience and extend our collaboration in the coming years. In the future, we will invite STs from the two regions to discuss more issues apart from communicative approaches. We believe that such virtual exchange amongst STs from different regions will open up rich learning opportunities for STs.

References:

Commander, N., Ku, K., Ashong, P., Gallagher, P., Deng, L. & Li, S. (2016). Cross-national Online Discussions with U. S. and Hong Kong Education Students. *Journal of Technology and Teacher Education*, *24*(4), 383-413.

Lehesvuori, S., Viiri, J., & Rasku-Puttonen, H. (2011). Introducing dialogic teaching to science student teachers. *Journal of Science Teacher Education*, *22*(8), 705-727.

Mercer, N., Dawes, L., & Staarman, J. K. (2009). Dialogic teaching in the primary science classroom. *Language and Education*, *23*(4), 353-369.

Michaels, S., O'Connor, C., & Resnick, L. (2008). Reasoned participation: Accountable talk in the classroom and in civic life. *Studies in Philosophy and Education*. *27*(4): 283-297.

Scott, P. H., & Asoko, H. (2006). Talk in science classrooms. In V. Wood-Robinson (Ed.) *ASE Guide to Secondary Science Education* (pp. 55–73). Hatfield: Association for Science Education (ASE).

Scott, P. H., Mortimer, E. F., & Aguiar, O. G. (2006). The tension between authoritative and dialogic discourse: A fundamental characteristic of meaning making interactions in high school science lessons. *Science Education*, *90*(4), 605-631.

Svensson, L., & Wihlborg, M. (2010). Internationalizing the content of higher education: The need for a curriculum perspective. *Higher Education*, *60*, 595-613.

“Friday Night: ZOOM Academic Salon”: Facilitating online interdisciplinary research international collaborative community in Beijing Normal University, China

Dong Yan, Beijing Normal University

To facilitate education research and sharing during the COVID-19 pandemic, the Friday Night | ZOOM Academic Salon (the Salon) kicked off on June 26th, 2020. This online workshop series was funded by the Interdisciplinary Innovative Talent Cultivation Alliance in Faculty of Education, Beijing Normal University (BNU). It lasted for five months and ended on November 27th, 2020.

With the notion of “Pandemic searches, research too”, in each session we invited reputed experts and scholars joining, sharing and interacting with young researchers, faculty members and graduate students from all over the world. The themes of the Salon included cutting-edge topics in multiple research fields (online education, science education, learning science, interdisciplinary education and artificial intelligence etc.), research methodology, research design and instruments, academic writing and grant application. The Salon was a successful exploration of establishing an online interdisciplinary, inter-university, and inter-international diversified scientific research academic community to promote educational research and enhancing research momentum.

Figure. 1 Poster for the Friday Night：ZOOM Academic Salon

Rigorous Topic selection— improving the research literacy of young scholars

The severe COVID-19 had brought the uncertainty to our life since the beginning of 2020, but it did not deprive the scholars worldwide from continuing scientific research and communication with passion. More than 1000 young college faculty members, researchers and students participated in the online academic workshop “Across time and space”. To facilitate and meet the needs of young scholars, the salon organizers combined their own research experience and the multi-facet needs of new researchers, and identified five themes most beneficial to the participants: literature reading, research instruments, research methodology, publication and cutting-edge topics.

(1) Literature is “the shoulders of giants” and has a great value for initiating academic writing. The Salon started with literature and consisted of four seminars: literature searching and retrieval, literature reading, management and review article writing. Professor Jingjing Zhang from BNU shared how to create literature maps, professor Chun-yen Chang from Taiwan Normal University shared how to conduct in-depth literature search, and Dr. Lung-Hsiang Wong from Nanyang Technological University (NTU) in Singapore shared the selection of academic papers. (2) A good study cannot be completed without good research instruments. The Salon covered a series of topics to introduce young scholars to literature retrieval and management with tools like Google Scholar, Zotero, Obsidian, Hypothes.is, and data processing and analysis with tools like AMOS. For example, Dr. Bodong Chen from the University of Minnesota shared a series of tools in knowledge management. (3) Research methodology covered both the traditional educational research methods and emerging methods: Dr. Qiyun Wang of NTU shared design-based research as an empirical

method; Professor Guoyuan Sang from BNU introduced how to use meta-ethnographic methods to do qualitative literature review. (4) For publication submission, we invited Professor Timothy Teo from Murdoch University, Australia and Dr. Lin Lin, the chief editor of *Educational Technology Research and Development* (ETR&D), to share how to select journals and issues to look out for in the process of publication. (5) Cutting-edge topics included AIED (artificial intelligence education), online learning, interaction and CSCL (Computer Supported Collaborative Learning). Dr. Jon-Chao Hong presented how to choose research topics and professor Ching Sing Chai from the Chinese University of Hong Kong (CUHK) shared student perception issues of AI education applications. The Salon organizers also exchanged insights with the invited speakers on courses and instructional strategies that can promote learners' understanding of STEM.

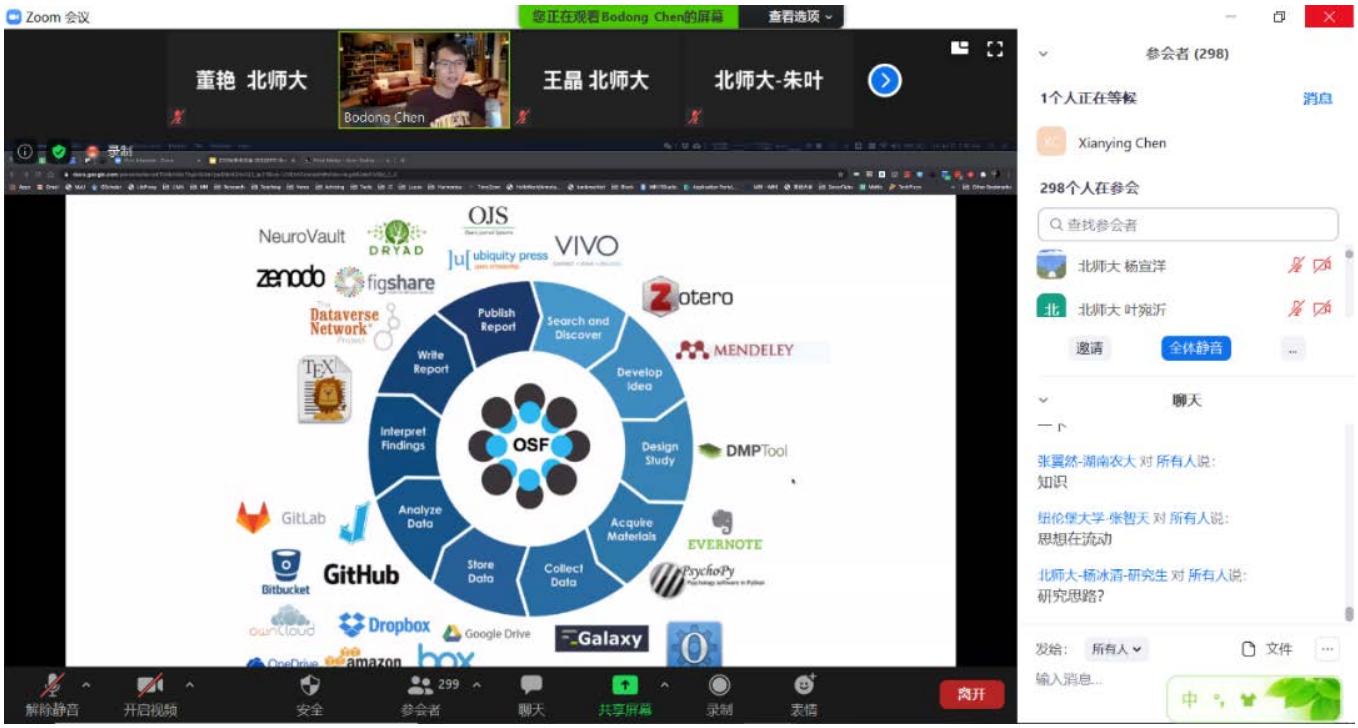


Figure. 2 Dr. Jon-Chao Hong's presentation

Carefully organized — promote individual participation in blended learning

Academic research goes beyond the geographic boundaries. In the context of globalization, we should continuously strengthen international academic exchanges and cooperation to construct the academic community. On Friday nights, our participants put aside their week-long work and devoted themselves to the relaxed atmosphere and exchange academic ideas and thoughts freely. Pedagogically, the salon organized invited the speakers to present for an hour, and left an additional hour for Q&A and interactions. As the Salon session proceeded, the audience went from asking questions in the chat room to turn on their microphone and camera to communicate virtually with the speakers, their self-efficacy and confidence improved. One of our speakers, Dr. Wenli Chen from NTU shared how to build academic teams, and showcased how effective her team performed in conducting research. She studied how to foster teacher-student interaction to perform from cooperation to collaboration in Chinese cultural context. It was truly impressive that her team applied technology to solve practical problems in education, and verified the effectiveness of the program through empirical research.

Scholars from different fields presented with distinctive perspectives, which promoted interdisciplinary thinking. Additionally, the Salon shifted the traditional offline format of academic communication to online, which transcended the time and spatial boundaries and formed a broader academic platform. The Salon organizers regularly reminded participants of the timeslots for the upcoming sessions and released news, which helped learners develop the habit of participating, thinking and communicating every Friday in the academic dialogues. The Salon team also built three Wechat groups (with over 1280 participants) to facilitate young scholars' collaboration with others with similar research interests, and the formation of new academic communities.

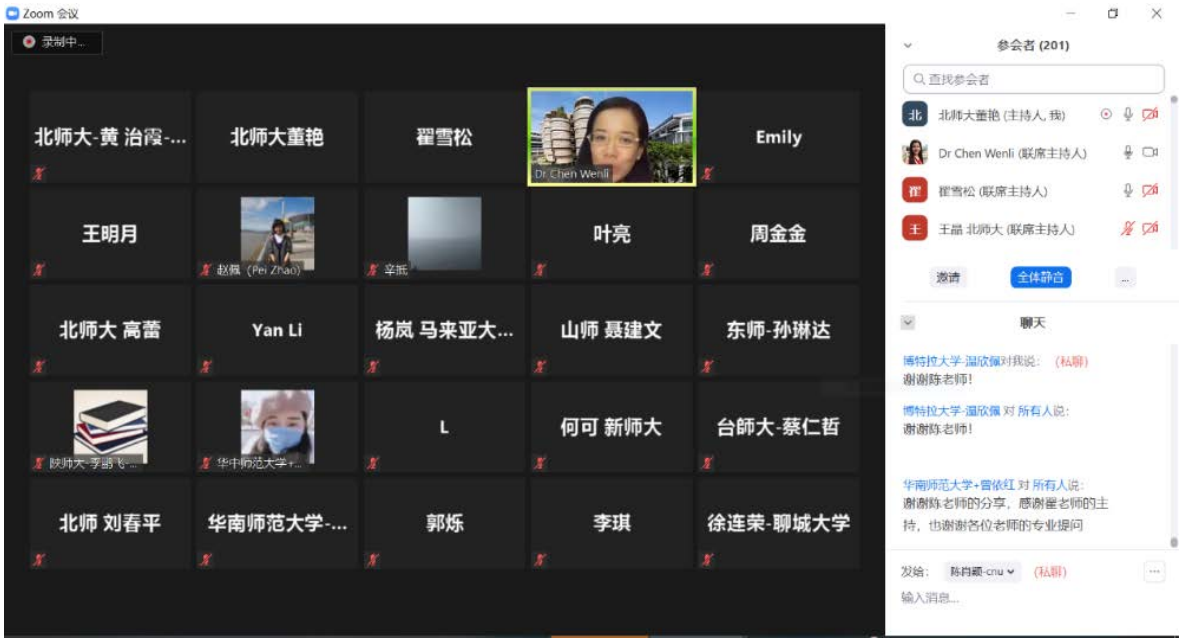


Figure. 3 Screen capture of online collaboration among young scholars

Emphasize feedback —fostering intercultural cooperation and express Chinese stories

Friday Night | ZOOM Salon served as a communication platform to help young scholars widen their research horizon and thoughts, develop good research literacy, and form proper research mindset. Through continuous academic exchanges and feedback, young scholars gained new ideas, new problems, and new motivations. All the new gains enhanced their research enthusiasm, prepared them to devote energetically in academic inquiry, and enrich their daily lives with academic activities. The Salon organizers actively designed themes and invited speakers, and responded to the demands of the audiences. The Salon also invited experts to provide feedback to readers with writing problems or difficulties, and facilitated those becoming scholars with Chinese characteristics and telling research stories with Chinese features. Academic research in the new era should address international exchanges and cooperation, and young scholars in the new era should expand their international horizons and apply technology to solve educational problems. Writing is not only an output of academic information; it is also a tool for expressing innovative thinking. The virtuous cycle of the academic enthusiasm of young scholars and the construction of the academic community can help promote the vigorous development of international science education.

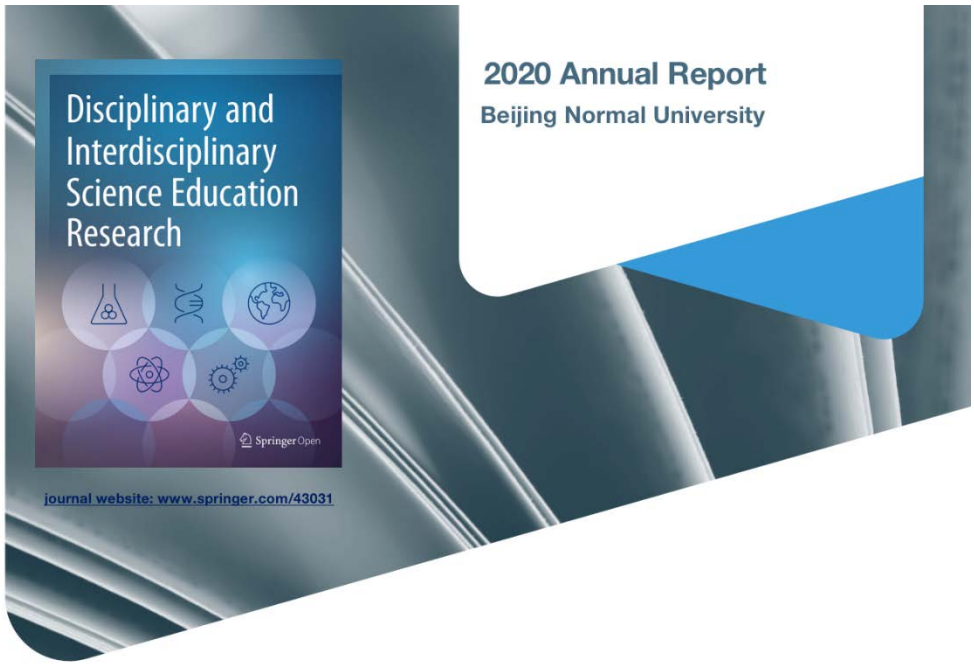
Expanding research thinking in the intelligent era

In the intelligence era, how can human intelligence and AI work together, how can technology empower education are the two essential topics. In the last session of the Salon, the organizer invited five speakers to share: Chinese educational informatization development provided by Ms. Zhuzhu Wang, the former director of NCET (National Center for Educational Technology), AIDE related topics by professors Shengquan Yu, Fei Wu and Changqin Huang, and empirical research in AI by professor Gwo-Jen Hwang. The trend of artificial intelligence in education applications is coming; our research thinking in the intelligent era can be further expanded.

With the initial success of the COVID pandemic in China, educators, practitioners and researchers have begun returning to physical working environment. The first term of the Salon wrapped up on November 27th, 2020. The salon lasted for a total of 20 weeks with breaks in public holidays. During the period, scholars and graduate students from different countries and regions participated in the activities, contributed and exchanged wonderful ideas and insights. During the global pandemic, the Salon funded by the Faculty built us a great academic exchange platform, created an open academic research atmosphere, promoted the research enthusiasm of young scholars, and provided an opportunity for exploring the possibility of constructing a new format of academic community in a special period. We hope the Salon, like many other online workshops, can enlighten and inspire researchers who are exploring their research interests, and facilitate them to do more research that is valuable in the future.

2020 Annual Report of Disciplinary and Interdisciplinary Science Education Research (DISER)

Wei, Dongying, Beijing Normal University



1 Editorial Development

1.1 Journal Metrics

Generally speaking, the manuscript flow of Disciplinary and Interdisciplinary Science Education Research (DISER) is acceptable. The average number days to first decision is 46 days, the average time to final disposition accept is 145 days. Based on available statistics that can be fully tracked currently, the paper downloads of 2020 full year is 35,015 accesses (2020 January to 2020 October).

1.2 Editorial Manager – Editorial Status Summary

During the peer review process, submitted manuscripts go through one or more revision stages leading up to acceptance or rejection. The table below summarizes the activity for the journal office between January 1st and December 31st of each year (Table 1). Only "Original Submissions" have been taken into account.

The rejection rate for 2019 is calculated as the number of rejected manuscripts in 2019 compared to the total number of decisions in 2019, which is defined here as the number of rejected manuscripts plus the number of accepted manuscripts.

Table 1. Editorial Status Summary

Table 1. Editorial Status Summary	2019	2020
Total Submitted	**40**	**53**
Total Decisioned	**33**	**43**
Accept	17	11
Reject	9	30
Withdrawn	7	2

Table 1. Editorial Status Summary	2019	2020
Acceptance Rate	52%	22%
Rejection Rate	27%	36%
Withdrawal Rate	21%	15%
Average Days to First Decision	46	53
Average Days to Final Disposition Accept	145	132
Average Days to Final Disposition Reject	35	48

Disclaimer: Please note that the term "Reject" was used for the calculation of the acceptance and rejection rates, which includes all terms that may exist for rejection decisions. For example: Reject before review; Reject after review; Reject, but resubmit; Reject, out of scope; and so forth. It should also be noted that only manuscripts for which the "Final Disposition Date" has been set were taken into account.

1.3 Author Country of Origin of Manuscripts Submitted and Accepted

In 2020, the author country of origin of manuscripts submitted and accepted is diverse and the geographical distribution of author country is acceptable. The same as 2019, DISER has the biggest number of authors from United States in 2020.

Table 2**.** Author Country of Origin of Manuscripts Submitted and Accepted

Country	Number of Manuscripts Submitted		Number of Manuscripts Accepted*	
	2019	2020	2019	2020
USA	16	12	11	5
UNITED KINGDOM	2	1	2	
AUSTRALIA	1	1	1	1
Austria		1		
SWITZERLAND	1			
ISRAEL	2	2	1	2
TAIWAN	1		1	
CANADA	1	1		
CHINA	1	2		
GERMANY	1	2		2
ETHIOPIA	3	3		
INDIA	2	7		

Country	Number of Manuscripts Submitted		Number of Manuscripts Accepted*	
	2019	2020	2019	2020
ITALY	1			
KAZAKHSTAN	1			
MEXICO	1			
MALAYSIA	2	1		
NIGERIA	1	1		
PHILIPPINES	1	2		
SOUTH AFRICA	2			
HONG KONG		1		
IRAQ		1		
LEBANON		1		
SWEDEN		1		1
TANZANIA		1		
FINLAND		1		
INDONESIA		1		
KOREA		1		
MAROCCO		1		
NEPAL		1		
SINGAPORE		2		
SPAIN		1		
UGANDA		1		
TOTAL	**40**	**53**	**17**	**11**

Disclaimer: Please note that the number of manuscripts submitted and the number of manuscripts accepted is a summary of activities between January 1st and December 31st of each year. A manuscript may have been submitted in a certain year, but not accepted in that same year, e.g. is still in process.

2 Circulation and Usage

2.1 Successful Full-Text Article Requests

Figure 1 shows the COUNTER usage data on Google BigQuery, Downloads Platform SPL; BMC Journals and combined platforms BMC and SPL. It can be concluded that the annual usage is 35015 totally by November 2020. It is more than 7 times more than the usage of 2019 (4,368 usage), which has indicated a big increase on usage.

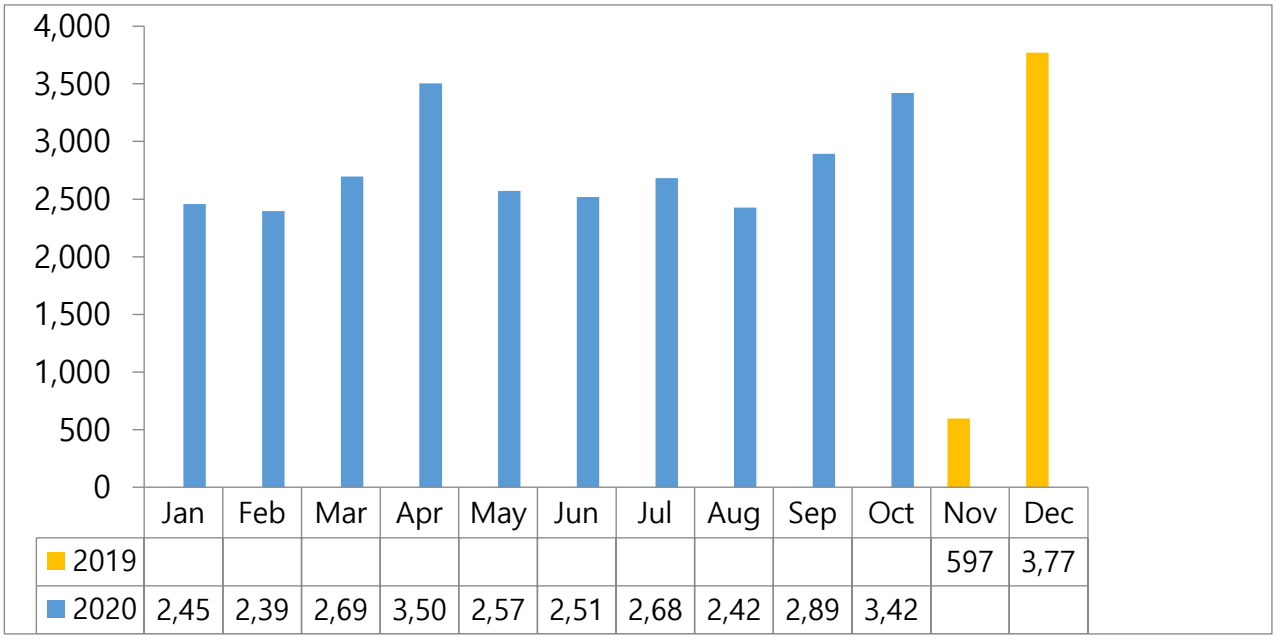


Figure 1. BMC and Springer Link Full-Text Article Requests 2019 – 2020 (YTD)

2.2 Top 10 Full-Text Article Requests 2020 (all publication years)

The top ten full-text requests 2020 (all publication years) are listed in Table 3. The statistic is obtained from COUNTER usage data on Google BigQuery, Downloads Platform SPL; BMC Journals, and combined platforms BMC and SPL.

It can be seen that nine of the ten most popular papers were published in 2019, and article type is Original Paper. The biggest number of downloads of the ten most popular papers is 4868.

Table 3. Top 10 Full-Text Article Requests 2020 (all publication years)

	Article DOI	Article Title	Author	Article Type	Volume	Issue	Pub Year	Downloads
1.	10.1186/S43031-019-0007-8	Physics education research for 21st century learning	Lei Bao et al.	ORIGINALPAPER	1	1	2019	4,686
2.	10.1186/S43031-019-0009-6	Promoting deep learning through project-based learning: a design problem	Emily C. Miller et al.	ORIGINALPAPER	1	1	2019	4,010
3.	10.1186/S43031-019-0003-Z	The future challenge of Earth science education research	Nir Orion	ORIGINALPAPER	1	1	2019	2,216
4.	10.1186/S43031-019-0008-7	New directions in socioscientific issues research	Dana L. Zeidler et al.	ORIGINALPAPER	1	1	2019	2,093
5.	10.1186/S43031-019-0017-6	Biology education research: building integrative frameworks for teaching and learning about living systems	Ross H. Nehm	ORIGINALPAPER	1	1	2019	1,792
6.	10.1186/S43031-019-0019-4	Students' problem-solving strategies in qualitative physics questions in a simulation-based formative assessment	Mihwa Park	ORIGINALPAPER	2	1	2020	1,619
7.	10.1186/S43031-019-0015-8	Understanding interactions in face-to-face and remote undergraduate science laboratories: a literature review	Jianye Wei et al.	REVIEWPAPER	1	1	2019	1,572
8.	10.1186/S43031-019-0005-X	Learning progressions: framing and designing coherent sequences for STEM education	Richard A. Duschl	ORIGINALPAPER	1	1	2019	1,538
9.	10.1186/S43031-019-0012-Y	Modeling competence in science education	Mei-Hung Chiu et al.	ORIGINALPAPER	1	1	2019	1,507
10.	10.1186/S43031-019-0002-0	Teaching and learning nature of scientific knowledge: Is it Déjà vu all over again?	Norman G. Lederman et al.	ORIGINALPAPER	1	1	2019	1,481

2.3 Google Analytics Stats

Table 3 shows Google Analytics Statistics of DISER user. DISER has a large number of users in Asia, especially in Indonesia, India, Philippines, and China. DISER has the largest number of users in the United States. The rank of number user regarding to country is listed in Table 4.

Table 4. Google Analytics Statistics

	Country	Users ▾	% New Sess...	Sessions	Pageviews	Avg. Time o...	Bounce Rate	Pages / Ses...
1.	United States	3,437	71.22%	4,396	7,801	00:02:17	31.53%	1.77
2.	Indonesia	1,037	57.86%	1,196	2,472	00:02:19	23.33%	2.07
3.	India	1,007	62.36%	1,092	2,206	00:01:57	28.48%	2.02
4.	Philippines	744	65.78%	865	1,364	00:04:57	22.66%	1.58
5.	China	466	51.77%	707	1,991	00:02:10	38.9%	2.82
6.	United Kingdom	423	61.36%	572	966	00:02:34	16.26%	1.69
7.	Turkey	391	46.57%	597	1,495	00:01:30	17.59%	2.5
8.	Germany	278	44.61%	482	1,346	00:02:24	22.61%	2.79
9.	Australia	269	63.05%	341	689	00:03:00	15.84%	2.02
10.	Pakistan	266	79.49%	273	481	00:04:04	19.78%	1.76

Welcome to submit your articles and it is free of charge. Please contact the editorial office if you have any questions:

Faculty of Education, Beijing Normal University,
No.19 Xinjiekouwai Street, Haidian District, Beijing, China, 100875
Tel: 86-10-58807455-1656 Fax: 86-10-58806955
E-mail: diseroffice@163.com
https://diser.springeropen.com/

2021 International Conference by KASE
Korean Association for Science Education

Kim, Chanjong, Seoul Normal University

KASE (Korean Association for Science Education) hold the KASE 2021 International Conference on January 28-29, 2021 online. You may visit https://www.kase2021.org/.

The theme of the 2021 KASE international conference was "Walking Together toward Inclusive Science Education by Creating Equitable Science Learning Opportunities". The organizing committee of the KASE conference wanted to express a great appreciation to those who participated.

KASE President's Greetings

It is my great pleasure to welcome you to the 2021 International Conference of the Korean Association for Science Education (KASE).

KASE has led science education research and practice since 1976 in Korea through publishing the Journal of the Korean Association for Science Education (JKASE) and holding academic conferences twice per year. KASE has expanded its effort to promote international collaboration by publishing an English journal, Asia-Pacific Science Education (APSE), since 2015 and by holding international conferences.

The theme of this year is "Walking together toward Inclusive Science Education by Creating Equitable Science Learning Opportunities." The theme is timely because it reflects the social and educational changes both in Korea and worldwide. Recently Korea has been moving towards a multicultural society, and the economic polarization of Korean society is increasing. The Korean government has committed to pursuing the goal of inclusive growth. The Ministry of Education of Korea has put an emphasis on fostering inclusive education for students with special needs and those who are marginalized.

We have invited renowned scholars in this field from all over the world: Okhee Lee, Angela Calabrese-Barton, Jennifer Adams, Sungmin Im, Alberto Bellocchi, Anna T. Danielson, Ching-Ting Hsin, Christina Siry, Tang Wee Teo, Tali Tal, and Jonte C. Taylor. I really appreciate their willingness to share their expertise during the conference and their kind participation. I believe that this conference will be an invaluable opportunity for all participants to raise their understanding of and gain insight on the theme and science education in general.

I certainly believe that this conference will bear fruitful results and lay firm groundwork for future development of science education research. I am looking forward to seeing you at the 2021 International Conference of KASE.

Sincerely yours,

Chan-Jong Kim, Ph.D.
President of KASE


E·A·S·E
2021 International Conference of East-Asian Association for Science Education
On-line
EASE 2021
CONFERENCE
Asian collaboration Towards the Development of New Science Education for the Future; Wise Preparation with SDGs/STEM
June 18(Fri)-20(Sun), 2021
Main Host Server: Shizuoka University, Shizuoka, JAPAN
Registration Fee (Membership fee included)
・Participant: $ 80(USD)
・Student: $ 30 (USD)
*Deadline for final registration: June 2nd, 2021
Schedule of EASE 2021
*tentative
Time (JST) June 18(Fri) June 19(Sat) June 20(Sun) Posters Speakers
10:00-10:30 Opening Ceremony Administration Administration
10:30-11:30 4 Presentations 4 Presentations 4 Presentations ✓
11:30-12:30 4 Presentations 4 Presentations 4 Presentations ✓
12:30-13:30 Lunch Time & Lunch on Meeting EM Meeting Lunch Time & Lunch on Meeting Editors Meeting Lunch Time & All Members Meeting * Seven ZOOM rooms
13:30-14:30 Keynote Speech Keynote Speech Keynote Speech
15:30-16:30 4 Presentations 4 Presentations 4 Presentations ✓
16:30-17:30 4 Presentations 4 Presentations 4 Presentations ✓
17:30-18:30 Keynote Speech Keynote Speech Keynote Speech Total
18:30-19:00 Administration Administration Closing Ceremony 50 336
Call for Abstract
Attention: Abstract submissions must be registered.
Topics: include SDGs,STEM/STEAM,etc
Open: March 10, 2021
Deadline: April 10, 2021
Submissions➡Web site
Peer Review Results: May 10th
*After notification of acceptance: Submit a two-page research summary; Deadline, June 2nd, 2021
Contact: ease2021ic.hq@gmail.com

Executive Members 2019-2021

President: Yoshisuke Kumano
Vice-President: Ying-Shao Hsu
Vice-President: Hae-Ae Seo
Secretary: Wai Chin Li
Treasurer: Donging Wei
Secretary of Headquarter: Gunji Yoshiyuki

Region	Name	Affiliation	E-mail address
Mainland China	Bao-hui ZHANG	Shaanxi Normal University	baohui.zhang@snnu.edu.cn
	Yingzhi ZHANG	Capital Normal University	zhangyz@cnu.edu.cn
	Jiuhua HU	Beijing Capital Normal University	hujiuhua69@126.com
	Donging WEI	Beijing Normal University	weidy@bnu.edu.cn
Taiwan	Ying-Shao HSU	National Taiwan Normal Univ.	yshsu@ntnu.edu.tw
	Lydia Mei-Chun WEN	National Changhua Univ of Education	mlwen@cc.ncue.edu.tw
	Chih-Hsiung KU	National Dong Hwa University	chku@gms.ndhu.edu.tw
	Chun-Yen TSAI	National Sun Yat-Sen University	chuyetsai@gmail.com
Hong Kong	May May Hung CHENG	The Education Univ. of Hong Kong	maycheng@eduhk.hk
	Valerie Wing Yan YIP	The University of Hong Kong	valyip@hku.hk
	Victor, Kwok Chi LAU	The Chinese Univ. of Hong Kong	laukwokchi@cuhk.edu.hk
	Wai Chin LI	The Education Univ. of Hong Kong	waichin@eduhk.hk
Korea	Sung-Won KIM	Ewha Womans University	sungwon@ewha.ac.kr
	Jongseok PARK	Kyungpook National University	parkbell@knu.ac.kr
	Myeongkyeong SHIN	Gyeongin National University of Ed	mkshin@ginue.ac.kr
	Hae-Ae SEO	Pusan National University	haseo@pusan.ac.kr
Japan	Yoshisuke KUMANO	Shizuoka University	kumano.yoshisuke@shizuoka.ac.jp
	Shuichi YAMASHITA	Chiba University	syama@faculty.chiba-u.jp
	Toshinobu HATANAKA	Toho University	hatanaka@c.sci.toho-u.ac.jp
	Tetsuo ISOZAKI	Hiroshima University	isozaki@hiroshima-u.ac.jp