



THE NEWSLETTER OF  
THE EAST-ASIAN ASSOCIATION FOR SCIENCE EDUCATION  
東亞科學教育學會通訊  
http://theease.org/

VOL.4, No.4  
No. 0016  
Dec. 30, 2011

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😊 WE WISH YOU A HAPPY 2012 !! 😊

## A Farewell Message from the Second President...

Dear Friends,

Thanks to all of your overwhelming support and participation, EASE 2011 at Chosun University (Gwangju, Korea) was a great success and became a cornerstone of the development of EASE. Through EASE 2011, EASE became much closer to and a better place for the communication of science education community, not only in our constitutional regions but also across Asia and the world. It was the moment for us to witness that EASE becomes truly one of the most well-established international organizations of science education research. I believe, EASE will continue to grow year after year and eventually become a leading professional organization of science education in the world.

For me, it was an unforgettable moment to serve as the president of EASE for the last two years. It was the most honorable duty professionally and the happiest memory personally. I have been proud of myself to be able to contribute somehow to achieving the better sharing and exchanging of the research and practice of science education in East Asia. I have also been extremely happy to make many new friends and colleagues and to meet ones in the regions.

Throughout over the last decade's efforts during Masakata's and my presidencies and the preparation period of EASE, we have achieved a tremendous increase of international activities and collaborations of East Asian science education through our biennial Conferences, Newsletters, a Summer School, and a collaborator research project. Despite the great success achieved so far we still have many more tasks and demands to be met. There are many more regions, as far as South-East and South Asia, hoping to join EASE as the constitutional regions of EASE. There have been ongoing demands to have our official journal for publishing research articles and to carry out more collaborative research projects. There has also been an increase of international attention given to the development of East Asian science education, in terms of research as well as practice. Surely, to achieve these requires much stronger fundamentals, such as more memberships, a bigger budget, closer links with other international and local institutions and so on are needed. I am very confident that under the leadership of our new president, Chi-Jui Lien, these issues will be challenged and pursued with great success. I also would like to ask all of you to give the full support to our new president as you gave me for that last two years. Thank you very much, and see you soon.



Wish you a Merry Christmas and a Happy New Year!

Jinwoong Song (Seoul National University, Korea)



Dear Friends,

## Welcome Messages from the Third President...

On behalf of EASE, I would like to express the immense gratitude to The First President Masakata Ogawa, The Second President Jinwoong Song, former and current Executive Members, Co-founders, Members, and Supporters, for your significant contributions to EASE. What you have done has made EASE a place of prosperity, wonder and support!

The definition of "East Asia" is always flexible as ever. In EASE, I have learned the term, "East Asia," as a concept instead of a definition, and I believe that grasping the nature of "Science Education" is more important than defining "East-Asian." At the moment, the association has five constituent regions (China Mainland, Hong Kong, Japan, Korea, and Taiwan); however, the membership is not confined to people in these regions. In fact many of our members are from other parts or outside of Asia now. ANYONE interested in research and practice of science education ARE ENCOURAGED TO JOIN US AND WE WELCOME THEM ALL from the bottom of our hearts. The constituent regions are not limited to current members either. We are hoping to have a larger extended coverage of constitutional regions in the near future.

Science education is a collaborative endeavor to prepare people better for their future, and more, to make a better world. Years of development have made EASE a potent platform for science education researchers/teachers on which we can share findings and solutions, and, moreover, set out for a quest and exploration of science education. Personally, I was attracted by the cordial atmosphere in EASE while I had interesting interactions and worked with so many wonderful and intelligent minds of science education. I truly believe that YOU WILL ENJOY THESE JOYFUL AND FRUITFUL EXPERIENCES more than I did.

Since EASE was officially established at Seoul National University, Korea, former two Presidents have organized many important academic events and set up milestones for EASE. With efforts from all EASE society and local science education communities, remarkable successes have achieved in many great events, including, the first biennial conference (EASE-2009) themed "Science Education for Tomorrow (SET): Voices of East Asia", Taipei, Taiwan; the first summer school (EASE-Summer School 2010), Taipei, Taiwan; the second biennial conference (EASE-2011) themed "Lighting the World with Science", in Kwangju, Korea; and from them, friendship and academic cooperation were strengthened. The IMPORTANT FUNCTION OF THE REGIONAL COOPERATION THROUGH EASE has been well demonstrated and has also declared a state of RISING FOR EASE.

Many exciting academic EVENTS ARE YET TO COME! I would like to thank the great efforts of scholars from China Mainland for hosting THE NEXT SUMMER SCHOOL in August, 2012 at Beijing Normal University for science education graduate students, and also thank scholars from Hong Kong for preparing for THE THIRD EASE CONFERENCE (EASE-2013) at Hong Kong Institute of Education, in July, 2013. I sincerely hope to see you and your excitements there! Before that day comes, our E-Newsletter will continue to provide vital information about the science education movements in the membership regions and the world. Please let's not forget to add EASE web-site as one of your favorites. If you feel a need to contact EASE, you may reach the executive members at yours region, other regions, or make contact directly with EASE headquarter. More contribution to the science education in East Asia may be initiated from here.

EASE is a young but promising organization! It is now building firm links with other existing regional, national, and international science education associations (e.g. NARST, ASERA, ESERA, etc.) so that communication and collaboration can be much more encouraged. EASE is in science education profession, yet full of friendship and supports. Yes, THE EASE ASSOCIATION IS YOURS. Your continuous supports are crucial to EASE. Please, JOIN EASE and JOIN OUR EFFORTS!

Chi-Jui Lien (連啟瑞), November 1, 2011

The Third President, East-Asian Association for Science Education (EASE)  
Adjunct Prof. and Former Vice President, National Taipei University of Education, Taiwan

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**EASE 2011 Conference Report****Lighting the World with Science***Young-Shin Park (Chosun University, Korea)*

The second international conference of East-Asian Association for Science Education has been held in Chosun University, Gwangju, Korea from October 25 to 29, 2011. More than 680 participants from 17 countries and regions joined together to discuss various topics of science education. As the main theme of the conference, "Lighting the World with Science" tells us, all the participants shared their lightening experiences and encouraged each other to enhance science education both in global and local perspectives. Thanks to the EASE 2011 committee and many staffs and students who diligently worked behind the scenes, every participant enjoyed the variety of programs at the conference. The plenary lecture was given by David Treagust from Curtin University, Australia with the title : "Why is an understanding of multiple representations so important in learning science?" Ten invited speakers also gave wonderful speeches and workshops during the conference, and as shown in the table, more than 250 presentations were presented. EASE also recognized outstanding scholars and prosperous young researchers with awards. Young Scholar Award was given to fourteen researchers from various regions and Ko Siang, Tan (Singapore) and Hye-Gyoung Yoon (Korea) received the Outstanding Paper Awards. More information about awards and awardees can be found at the EASE website ([www.theease.org](http://www.theease.org)). As one of the participants remarked, EASE 2011 conference seems to mark the valuable point in science education in East Asia.

## A Glance at the Conference

Contents	Number
Total participants	680
Participating countries/regions	17
Plenary/Invited speeches	11
Workshops	10
Paper Presentations	141
Poster Presentation	112
Science demo.	40
Young scholar award	14
Outstanding paper award	2
DCA award	3

**News & Announcements****1 Welcome to EASE Summer School 2012 !**

Thanks to the effort of Executive Members from China Mainland, we are pleased to announce that the 2012 EASE Summer School will be held in Beijing Normal University, China Mainland on August, 2012. The participants of this summer school will be five working groups from different regions, there will be five Ph.D. students, one coach and a senior professor in each group to discuss researches of science education. I believe that there will be many valuable opportunities for sharing research experience and developing future research collaborations among them. If you or your Ph.D. students are interested in this summer school, please refer to the 3<sup>rd</sup> E-Newsletter (Sep. 2010) at our website and expect more to come. We are looking forward to seeing promising researchers in Beijing!

~ EASE Headquarter

**2 The first IHPST Regional Conference in Asia**

The First IHPST Regional Conference in Asia will be held on 18-20 October 2012 at Seoul National University, Seoul, South Korea. The IHPST (International History, Philosophy and Science Teaching) group is concerned to promote the betterment of school and university science and mathematics education by making them informed by the history, philosophy and sociology of science and mathematics. The IHPST group has been holding biennial conferences since 1989. And recently its regional conference has been introduced starting from Latin America. The conference theme of the 2012 IHPST in Asia is "Exploring Science: Contributions from History, Philosophy and Education of Science". Invited speakers are as follows:

*Hasok CHANG ( U. of Cambridge, UK), Igal GALILI ( Hebrew U. of Jerusalem, Israel), Yung Sik KIM (Seoul National University, Korea), Norman LEDERMAN ( Illinois Institute of Technology, USA), Takehiko HASHIMOTO ( U. of Tokyo, Japan), Alice Siu Ling WONG ( U. of Hong Kong, Hong Kong)*

For further information, please visit: 2012 IHPST in Asia website at <http://ihpst2012.snu.ac.kr> IHPST group website at <http://ihpst.net>

For any questions or concerns about 2012 IHPST in Asia, please email us: [ihpst2012@gmail.com](mailto:ihpst2012@gmail.com)

~ Jinwoong SONG, Seoul National University, Chair of the Organizing Committee of 2012 IHPST in Asia

**3 Welcome to EASE 2013 Conference**

<b>Date:</b>	<b>July, 2013</b>
<b>Aims:</b>	<ul style="list-style-type: none"> <li>● Nurturing young generation as future scientists</li> <li>● Improving scientific literacy in the community through research and development of appropriate science curriculum, teaching and assessment practices</li> <li>● Building a platform for exchange between scientists and science educators and facilitating discussions and collaborations on research between science and science education communities in Asia and other countries</li> <li>● Enhancing science teachers' awareness towards recent scientific research, discoveries and teaching strategies</li> </ul>
<b>Format:</b>	Oral presentations, poster presentations, workshops, demonstrations and symposia.
<b>Registration and Call for papers:</b>	<b>To start in July, 2012</b>
<b>Organiser and venue:</b>	The Hong Kong Institute of Education
<b>Co-organisers:</b>	The University of Hong Kong The Chinese University of Hong Kong



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Curriculum Development Institute of the Education Bureau



## Lessons from EASE Conference

*Brian Hand (University of Iowa, USA)*

The benefits from a conference are not always realized at the time of the conference. The opportunities to meet new people, touch base with colleagues and learn from those entering the profession are always the immediate outcomes of a conference. However coming back to my home university and discussing the conference with my research group, always provides a sense of being pushed forward in our work. I think that one of the great joys is to ask the “so what” question, so what are we doing and how do we use the ideas from the conference to help us.

One of the interesting parts of the conference is that while many of us go to NARST and ESERA, we do not have the opportunity to spend time in East Asia to have a look at what is happening in this part of the world. While we talk with each other at other conferences we do not get to see what is driving research interests in this region of the world.

Of real interest to me is not seeing if studies in other parts of the world can be replicated, but rather how are the studies in East Asia helping shape our thinking about what we are doing in other parts of the world. I am very interested in looking out how student learning in this part of the world lines up with student learning in my own context. Thus to listen to colleagues talking about what are critical concerns within different parts of East Asia certainly helps us as a research group to go beyond our own setting. For example, scholars from Mainland China and Taiwan are interested in the idea of creativity, while Korean colleagues are beginning to get very interested in argumentation and how that improves learning. These are just two of many. I believe that as we look at how colleagues in East Asia address these types of issues and match them to our own situation, as a collective group we can begin to build richer understandings of theory that underpins this work. Much more needs to be done in terms of theory – as a group we in science education need to spend more time engaging in building richer explanations of why we think benefits to student learning can be explained by the different lines of research.

However, as a note of caution, I would encourage researchers not to just repeat studies in other countries unless there is a specific reason to do so. Building theory requires us to replicate some studies in different parts of the world, but the intent is to move beyond what we currently know. The excitement generated at such a large meeting was great to watch, but the question is how as a group you can build on from such a good beginning to help advance science education globally. What links can we build to push each other along? This to me is the critical outcome of such a conference – not just to keep building the membership (which in itself is very important) – but to look at building on and adding to the work done in other parts of the globe. We all have different opportunities in terms of research monies and time but this does not prevent people from adding to the debates and helping to shape what we are doing.

The critical part of these conferences where there are broad range of cultures and interests present is that we can begin to look at questions not just head on but from different angles. This is where new ideas and understandings emerge. That for me is where the excitement comes for research. Young scholars without the burden of old ideas can stimulate conversations, while older scholars can add experience to the conversations. All this is what is useful. Again I want to thank the organizing committee for asking me to come. I look to my continuing involvement with EASE and with research colleagues in this region.

## After EASE Conference 2011.....

### Take My First Step toward Success

*Jungsook Lee (Science Education for the Next Society, SNU, Korea)*

The main impetus for my research was the desire to improve instruction in physics education while I was a graduate student, although I may also be peripherally interested in theories of cognition or instruction. After my Ph D. degree, I focused my attention on the development and testing of methods for teaching science. I had taught students at public elementary school for 14 years and it made me feel that instructional strategy or theory of instruction is important. The time that I was at EASE 2011 in Gwangju, Korea was a pretty critical moment in my academic career. I must say it was a very good conference for me because I had a lot of feedbacks related to my work. I even was able to have a good conversation with one of the actual reviewers of one of my papers. And since it was a critical review, the talk ended up being quite useful. I was also able to interact with various impressive international scholars from other Asian countries. Trying to cultivate such conversations and listening to presentations informed me of what others are doing, inspired research ideas of my own, and exposed me to different styles of presentation. It was a “hot” meeting from the start to the end. The organizers were perfect and also very thoughtful to arrange a couple of general sessions. I think this friendly environment helped to ensure honest discussions about each other’s work. About the conference itself, it really met the expectations. I look forward to attending the next EASE conference!





## Share, Talk, and Discuss

*Kongju Mun (Ewha Womans University, Korea)*

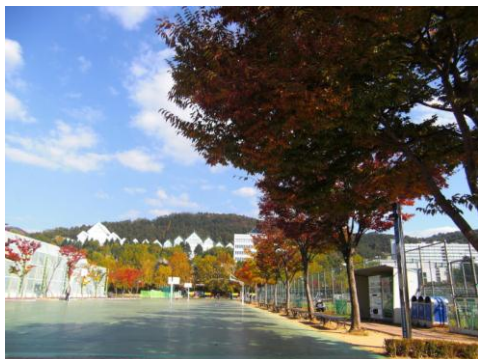
I have fully enjoyed EASE conference in Gwangju, Korea. It was a great opportunity for me to communicate with science teachers and researchers in East Asia, and big scholars all over the world. I was very impressed by the very large numbers and diverse research topics of presentations. From the various presentations, I can understand other countries' science curriculums, class room situations, and national goal of science education. Invited speakers showed me new directions of science education. I could also find current research topics from their talk titles; multiple representation, community of practice, curriculum reform, argumentation, creativity, identity and careers in science, and big ideas.

creativity, identity and careers in science, and big ideas.

One of my research interests is cross cultural research. I want to conduct research about comparison between various countries which is about the differences of students' attitude and motivation toward science learning. Attending international conferences helps me to make a connection for international data collection and research collaboration. After EASE, my research plan has good possibility with my new science education researcher friends. I presented my research about college students' motivation to learn science at the third day of the conference. Even though I was not a fluent speaker of English, every audience had patience for listening. I really appreciated their comments and attention for my presentation. Now, I am encouraged by EASE presentation experience, I just started writing the paper in English.

The Conference Banquet was also very exciting. I received a prize for dancing. I found my new talent through EASE conference. Two professors' dance performance was really impressive. I could not believe that they are professors, not professional dancers. I can share, talk and discuss with many EASE members during the conference days. EASE 2011 was just awesome. I hope to see you all again in Hong Kong.

## After EASE Conference 2011.....



## Sharing

*Fiona Ching (The Hong Kong Institute of Education)*

EASE International Conference 2011 held in Gwangju of Korea is one of the most inspiring and well organised conferences that I have ever attended. First, since almost everything was held in the same building, attending different sessions had become so convenient. Second, the plenary sessions by renowned scholars in science education were very inspiring. They stimulated insights and ideas for future research. Different invited speeches had also informed participants about the latest trends and development in science education research from the perspectives of different countries. Moreover, the arrangement of poster session was perfect. It gave sufficient time for the

participants to share their work with others. I did enjoy sharing my work and reading/ listening to others' work at the poster as well as the oral presentation sessions. I especially valued the comments and suggestions from the other participants.

Besides the conference itself, the campus of Chosun University impressed me a lot, in particular the trees with red leaves. In addition, I heard from my colleagues that the conference banquet did not only provide participants the opportunity to meet academics from different countries in a relaxing environment, it also allowed them to get to know more about the Korean culture through the music performance by the students. The organiser's thoughtful transportation arrangement between different hotels and the conference venue, and the friendly and helpful student helpers at the registration and information desks truly reflected Korean's hospitality. Finally, the joint effort of different universities co-organising the conference were much appreciated. I do look forward to the next EASE international conference to be held in Hong Kong in 2013.



## After EASE Conference 2011.....

**EASE International Conference 2011 Lighting the World with Science***Sibyl Wong (Hong Kong)*

Days ago I was asked to write something to express my impressions about the recent conference. I was thrilled and accepted such honour invitation immediately before anyone taking this great opportunity before me. Then I got a reply saying that the writing has to be a short one, I kept asking myself how can I write a short one, there are just too much to write about, it's really challenging. I have spent days to think about the writing style, should it be a list of pros and cons, or a poem, or just narrative? I have chosen 'free style', wish I can do a short one.

Before confirming to go to this conference, I missed the deadline for submitting an abstract, I was struggling between attending or not going. Then I realized the list of invited speakers and decided to attend, even without any chance to present my work. This was one of the very important motivations and it turned out to be the very correct choice. The plenary, the invited speeches and the invited workshops are all great, I enjoyed every single one of them, of course the plenary the most.

This was a real international conference that I met delegates from different regions, locally in Korea and neighbours such as Taiwan, Malaysia and Thailand. It was not just a sharing upon science education, it's also a great opportunity to share culture and current issues as well. Had unforgettable conversations with delegates from Japan on how religion and culture impact on teaching/learning of evolution, great debate with delegate from Singapore on academic result vs learning interest, etc, and sorrow sharing with Thai on their recent flooding issue.

The most impressive bit of this conference was the science demonstration section, honestly the first day didn't impress me much, but the rest were really interesting. One of them was demonstrating the idea of 'total reflection', since my physics knowledge was so bad that I enjoyed the demonstration like a magic show.

Last but not least, the overall arrangement of the conference was nice. The transport from Seoul airport to Gwangju was well organized, the chosen venue Chosun University is full of history and beauty, the meal arrangement was perfect (I love Korean food), the choices for tea and snacks were well selected (only I miss English tea a lot), the little gift especially the tumbler made my days with perfect Korean green tea. I must say it was a pity that I have missed the opportunity to join the cultural visits and I believe that must be great too.



## After EASE Conference 2011.....

**A Pleasant Experience of Participating EASE 2011 Conference***Nelson C. C. Chen (National Science and Technology Museum, Taiwan)*

It's my second time of visiting the rose-surrounded campus of Cho-Sun University (CSU), Korea, when attending the EASE2011 conference October in the university. As soon as I arrived at the check-in desk, that was really like an amazed bazaar hosted by CSU. Prof. Young Shin Park, one of the key persons organizing the conference, was seemed to be the commander of the event. All of the sub-item programs was set up and conducted smoothly with no delay.

More than hundred of contributions, including keynote speeches, invited speeches, workshops, oral presentation of paper, science demonstrations, poster exhibitions, have been presented in such a big event for EASE conference. It can meet the various needs of participants from the varieties of countries and areas.

I have worked at National Science and Technology Museum, Taiwan, for more than 10 years. Frankly speaking, science center or science museum was naturally regarded as the informal science education venue, there were seldom topics concerning an informal science education issues. "Chemical Education for Creativity: Knowledge, Judgment and Representation" and "Practical Ways for Teaching and Evaluating Science Creativity" were presented by Hiroki Fujii from Japan and J. W. Park from ROK, respectively were related to the capability of creativity that I felt interesting and I try to apply it to the science museum where I have been working in.

I was so pleased that there were many participants showed up at the scene of my science demonstration, psychic tricks and shooting the Floating Ball in Turbulence with Automatic Bamboo Gun, some of them also gave me some valuable comments and appreciations so that I can have a good friendship with each other.

But when I visited another science demonstration booths, it appeared that the staffs in charge of the booth were not good at the English speaking, it was not so easily for foreigners to understand what the speakers said, but luckily, I can guess and image what the speaker would like to say or to present the science concepts and fun game.



## Marine Education for Improving Citizen's Ocean Literacy in Japan

Akiko Tsuzuki ( Marine Learning Center, Japan)

Earth is called a water planet and the ocean covers about seventy-five percent of the Earth's surface. It is thought that life itself began in the ocean. The ocean makes our climate habitable, provides us with much of the oxygen, the fresh water, the sea lane, and recreation. It also yields fishery and mineral resources and causes the disasters of tsunami or storm surge. It can be said that all life depends on the ocean and it is important for us to gain a better understanding of the ocean, or to become 'ocean-literate'. Then you might have a question: 'what is ocean literacy?' The organization Umi-Roman 21, which consists of Japanese researchers in ocean-related studies, defines ocean literacy as 'the abilities to acquire and apply the knowledge about the ocean' and 'an understanding of the ocean's influence on you and your influence on the ocean'. In 'Ocean Literacy: The Essential Principles of Ocean Sciences K-12', developed by ocean scientists and marine educators in the US in 2006, ocean literacy is also defined in the same way. The ocean is rich in natural science contents such as biology, ocean physics and meteorology and could be used as an educational material about these contents. However, ocean and aquatic sciences are underrepresented in the current guidelines of school science in Japan. Ocean related topics are often dealt with geography and social studies.

In Japan, the Basic Act on Ocean Policy was established in 2007. In the Act, it says that the State shall take necessary measures a) to promote school/social education about the ocean, and b) to promote interdisciplinary education and research at universities and other institutions in order to nurture human resources with the knowledge and the capability required to meet the political issues appropriately with regard to the ocean. In 2009, the Ocean Policy Research Foundation published the report, 'Grand Design for Ocean Education in the 21<sup>st</sup> Century: Ocean Education Curriculum and Unit Plans' for elementary schools and for junior high schools and high schools were published in 2010 and 2011 respectively. (The elementary school version was translated into English in 2011). The University of Tokyo also founded the Research Center for Marine Education. This center aims to establish the coherent marine education from primary to tertiary levels and plays a role as a hub for developing marine curriculum and courses for teacher's professional development.

Japan ranks first in the world in terms of the number of aquariums per capita. Japanese people often go to aquariums and consume a lot of seafood. However, it cannot be said they are ocean-literate. Marine Learning Center located in Okinawa, to which I belong, aims to give people opportunities to learn about marine environment and organism, and the relationship between ocean and people so as to make a society which has a greater awareness of ocean protection and scientific exploratory mind. We have conducted ocean-related education and research activities since 2005, such as developing and implementing educational programs, training marine educators, and so on. In these activities, it has been important for us to collaborate with researchers and educators of aquariums, visitor centers, schools and outdoor activities, and administrative agencies in various areas of Japan. According to the Japanese Association of Zoos and Aquariums, this organization alone has 66 aquarium members in 2011 and including non-members, the number is said to reach around 170. These aquariums as well as some coastal cities implement their own educational programs with the use of local resources. We would like to continue to collaborate with these people and to make use of rich resources in these various institutions in order to enhance citizen's ocean literacy.

In what ways do you deal with ocean in school science in your country? Every East Asian country faces the ocean and we are connected by the only one ocean. It would be interesting to share the curriculum contents about the ocean with each other.



*Education is not the filling of a pail, but the lighting of a fire. (by William Butler Yeats)*

## Understanding Science with using Math and Excel Program

Seung-Urn Choe ( Seoul National University, Korea)

Science education has been carried out in the classroom environment for quite a while, yet the concept of science has always been difficult to understand. Science is based on empirical evidences; therefore students can have a better sense of the subject through hands-on experiments and observations of the natural phenomena. In spite of this kind of activities, science is still a difficult subject. It is because various mathematical notations and graphs are used to describe the natural phenomena. If these notations and graphs are a kind of languages describing the behavior of nature, the meaning of this language needs to be perceived when doing the science. Realistically, however, this is an abstract idea to the students, and its meaning is difficult to grasp for the students. Experiments and observations do instigate students to be interested in science, however, it is hard to say science education is completely fulfilled by these activities only. In addition to experiments and observations, the language of science would have to be delivered through mathematics, too.

The Excel program is an effective way to execute mathematical calculations and illustrate these calculations using various types of graphs. The program is inexpensive and widely available. Its user-friendly interface does not require a special computer language to perform calculations. Most types of mathematical calculations can be executed and graphed in the Excel worksheet by using the +, -, ×, ÷, sin, cos, and some other special functions within the Excel program. Also, some of the command buttons allow the users to change the variable values and bring about a change in the

$$\frac{d^2 r}{dt^2} = -\frac{GM}{r^2}$$

graph figures. This could be seen as a type of animation. For example, let's see a comet orbits around the sun with a motion of

The analytical solution to this equation exists, however students have difficulty in understanding it. When taking a numerical approach using Excel, the calculation can be easily graphed like Fig. 1. When the comet is closest to the sun, its velocity is 1.2 times of a circular motion (Fig. 1. cell B3), and this behavior is well illustrated in the figure as the comet moves in an elliptical shape. Also, when typing in =sqrt(2) in B3 to change the comet's velocity to be  $\sqrt{2}$  times of a circular motion, the orbit turns into a parabolic shape as shown in Fig. 2. Moreover, a click on the graph makes a few data marks to appear, and pressing the "→" on the keyboard shows a mark traveling along the graph. In other words, the comet orbiting around the sun can be animated. In the graph shown in Fig. 1, the increase and decrease of the comet's velocity with respect to the distance with the sun can be observed.

Initially, this type of calculation can be difficult because of unfamiliarity. However, when it becomes familiar through training of a few basic examples, mathematical equations in science which were once considered difficult can be easily graphed and handled. Gradually, the mathematical language in science would also become more familiar and manageable. The application of this numerical approach is not limited, but can extend to subjects like social science. This type of training is very useful to the students who are academically at the top 20% of their class. It is almost essential in educations related to physical science and earth and space science. Along with experiments and observations, it is sincerely hoped this method is widely used in science education.

Fig. 1. Elliptical orbit of the comet with 1.2  $V_c$

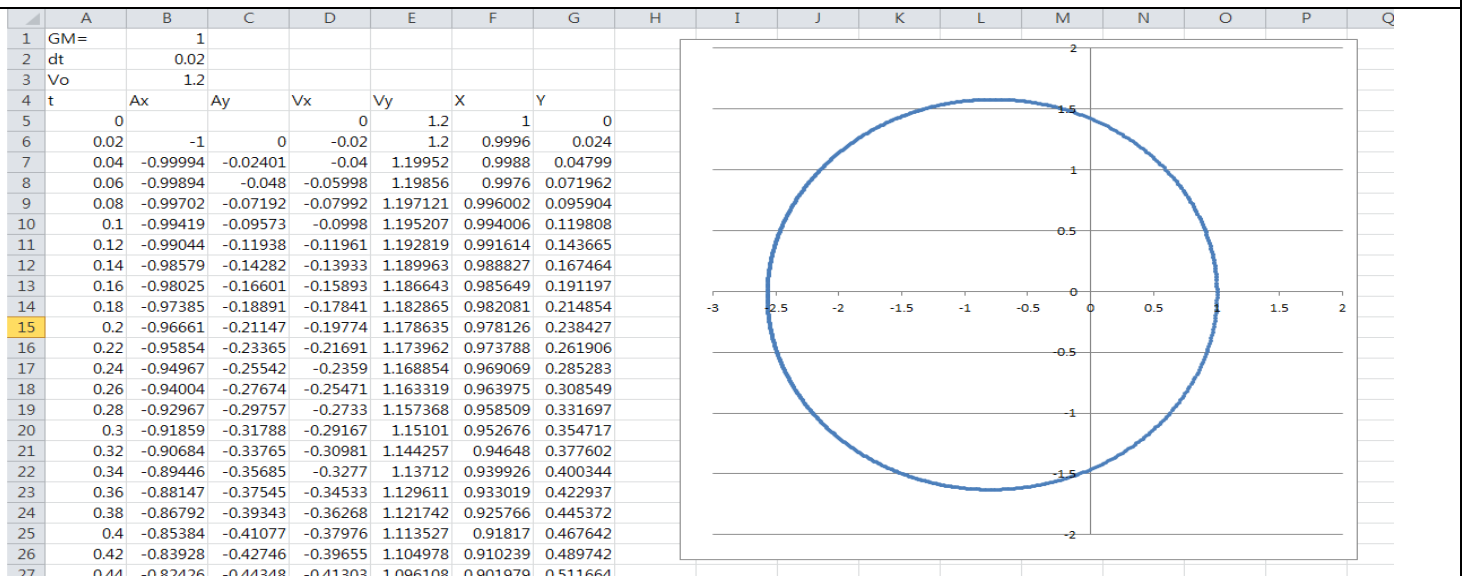
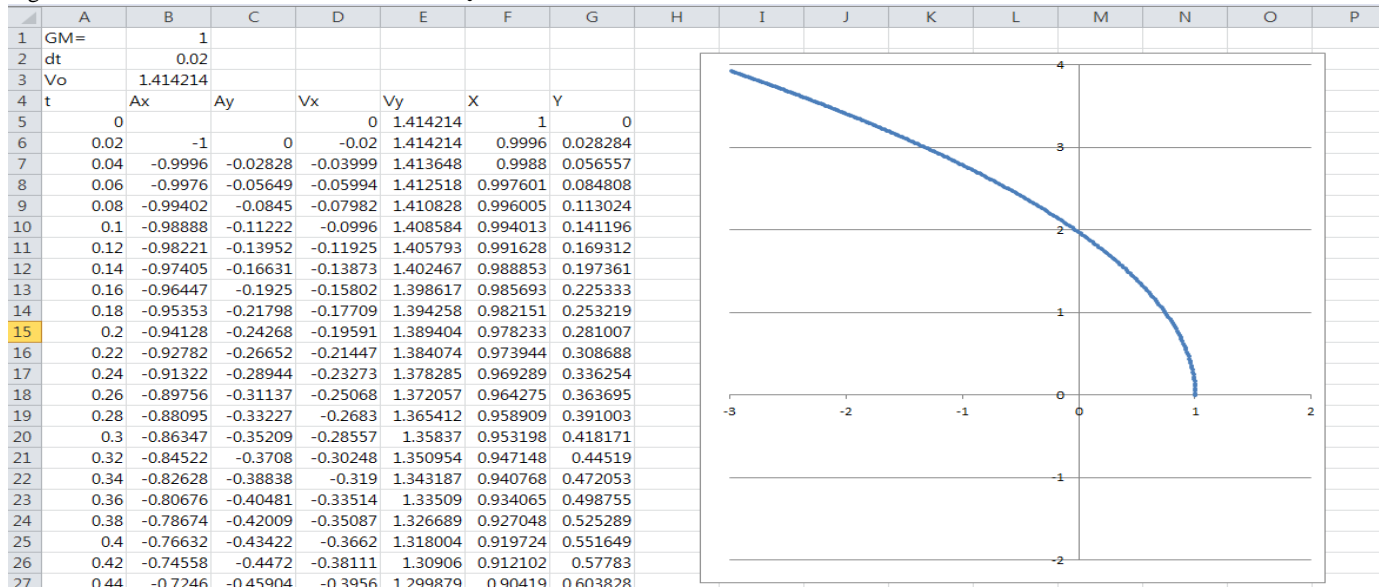


Fig. 2. Parabolic orbit of the comet with  $\sqrt{2} V_c$



**Journal Introduction**

**The Asia-Pacific Forum on Science Learning and Teaching (APFSLT)** by Dr Y. Y. Yeung (Chief Editor) is a peer-reviewed online and open-access periodical (ISSN 1609-4913) dedicated to the effectiveness and interest of learning and teaching science subjects in schools. It has been published by The Hong Kong Institute of Education since 2000. This journal invites contributions of original research papers or professional articles on innovative teaching ideas/methods or issues related to science education for broadcasting on the Internet. Potential contributors and target readers are science teachers and student-teachers, researchers, scholars, curriculum officers, science inspectors and other science educators in the local, regional and international communities.

The contents of this journal are being indexed in various information products of the [EBSCO Publishing, Inc.](http://www.ebsco.com) and a number of journal databases like [Directory of Open Access Journals](http://www.doi.org/), [Academic Journals Database](http://www.eric.org/), [Open Directory Project](http://www.ovid.com/), [Ulrichs International Periodical Directory](http://www.ulrich.com/), [Google Directory](http://www.google.com/), [ERIC](http://www.eric.org/) (articles published in 2004 and afterwards), and [Scopus](http://www.scopus.com/) (Arts and Humanities) of the Elsevier Bibliographic Databases (as of 2009). For further information about this journal, please visit its website: <http://www.ied.edu.hk/apfslt/>

You are sincerely invited to contribute articles to this journal and/or serve as our external reviewers.

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**Upcoming Conference**  
 NSTA 2012 conference @ Indianapolis, USA  
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 March. 25-28, 2012 [www.narst.org](http://www.narst.org)  
 AERA 2012 conference @ Vancouver, Canada  
 April 13-17, 2012 <https://aera.net>  
 The 36<sup>th</sup> JSSE conference @ Tokyo, Japan  
 Aug. 27-29, 2012 [www.jsse.jp](http://www.jsse.jp)  
 ASERA 2012 conference @ queensland, AU  
 June 28-30, 2012 [www.asera.org.au](http://www.asera.org.au)  
 The 62<sup>nd</sup> SJST conference @ Kagosima univ.  
 Japan, Aug. 11-12, 2012 [www.soc.nii.ac.jp](http://www.soc.nii.ac.jp)  
 Seventh International Conference on Science, Mathematics & Technology Education @ Sultan Qaboos University, Muscat, Oman  
 Nov. 4-7, 2012  
 Submission of max 250 words abstracts from 1st Feb. to 31st Jul. 2012.  
<http://smec.curtin.edu.au/index2.cfm>

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