International Council of Associations for Science Education

Supporting and promoting science education internationally
The ICASE Newsletter

January/February 2022

Welcome to the ICASE January/February 2022 Newsletter!

Welcome to the ICASE January/February 2022 Newsletter! The ICASE Newsletter is a publication containing current information about ICASE initiatives conducted by ICASE and her member organisations, and topics of interest in the field of science education. The table of contents for this issue is in the right-hand column.

The International Council of Associations for Science Education (ICASE) was established in 1973 by leadership at the United Nations Educational, Scientific and Cultural Organization (UNESCO) to link national science teacher associations and to extend and improve science education for children and young people throughout the world. Today, ICASE is a network of science teacher education associations, institutions, foundations and companies, working together to promote science and technology education internationally. ICASE facilitates communication and cooperation at national, regional, and international levels. The ICASE Strategic Plan (2013-2023) calls for ICASE member organisations to adopt a position of Excellence and Leadership in Science Education.

International Council of Associations for Science Education

Over the past 49 years, more than 200 organizations have been members of ICASE. Currently, there are 32 organizations from 30 countries contributing to the financial administration of ICASE.
www.icaseonline.net/membership.htm

Contents of Newsletter

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ICASE Annual Membership Update

Please renew your organizational ICASE member fees!

We are updating our records, please complete the ICASE member information sheet found on our membership page: https://www.icaseonline.net/membership.html

Membership fees are due January 1st each year and three-year options are available at a reduced rate! Membership renewal is easy and can be done totally online on the ICASE Website at: http://www.icaseonline.net/membership.html and a receipt will be sent to you. If your organization needs to receive an invoice, please notify us to request an invoice.

ICASE provides opportunities for member organizations and their representatives to promote excellence and innovation in science teaching and learning for all through:

- connections to the members of other science organizations around the world;
- opportunities to serve in ICASE international leadership positions on standing committees and in international research initiatives;
- communication venues to disseminate information internationally to the members of international science organizations through the ICASE listserv, newsletter and peer-reviewed ICASE journal;
- collaborative funding opportunities to promote science education at regional levels; and
- organization of ICASE World Conferences, regional events, and workshops providing opportunities for professional development and networking.

How are your membership fees put to use?

ICASE membership fees are used for financial support of regional activities.

Approval for funding will be considered based on a written submission (request for funding support) to the ICASE secretary, which clearly indicates how the activity meets the following criteria.

All financial support for activities will be approved by the ICASE management committee, in consultation with the Executive Committee, and is subject to the availability of funds (generated by ICASE membership fees).

Procedure to request financial support of regional activities

1. The applicant organisation must be a current financial member of ICASE.
2. The activity must promote science education at a regional level.
3. The applicant organisation should provide a description of the activity and the potential benefits (including the extent of benefits - number of beneficiaries, and how the activity meets the short-term and long-term goals of promoting science education in that region).
4. ICASE must be acknowledged as a sponsor on all publicity material, including the website advertising the initiative. The ICASE logo must be displayed on all materials associated with the funding.
5. Funding requests will be accepted for the following range in US dollars: $500 – $2,000. These funds are intended to cover special initiatives associated with activities occurring in benefit of each region.
6. The applicant organisation must provide a budget for the activity including other sources of funding.
7. The applicant organisation must have an institutional bank account for the transfer of funds.
8. The applicant organisation must nominate a person in their organisation who will take responsibility for the activity, all expenditures and reporting (via presentation and in writing) at the subsequent ICASE World Conference.

The report may be presented via video conferencing if the organization is unable to fund a member to attend an ICASE World Conference. Please note that the ICASE Management Committee reserves the right to approve funding for second and subsequent applications from the same region within a three-year period, even when the application may come from a different organisation.

BECOMING A MEMBER ORGANISATION

ICASE invites national, sub-national and multi-national organisations interested in the promotion of science and technology education to join its worldwide network. Organisations eligible to join are Science Teacher Associations (STAs), Science Societies, Institutes, Universities (or University Departments/Faculties), Industries, Companies, Centres and Museums. These organisations may have a sole interest in science education (or in one of its sub-disciplines such as biology, chemistry, physics, Earth sciences, etc.) or have wider interests, one of which is science education. Following the ICASE Constitution, requests for new members, whether full or associate, are approved by the ICASE Executive Committee.

ICASE provides opportunities for member organizations and their representatives:

- to promote excellence and innovation in science teaching and learning for all through
- connections to the members of other science organizations around the world;
- to serve in ICASE international leadership positions on standing committees and involvement with international research initiatives;
- to disseminate information internationally to the members of international science organizations through the ICASE listserv, newsletter and peer-reviewed ICASE journal;

- to obtain collaborative funding aimed at promoting science education at regional levels; and
- to participate in ICASE World Conferences, regional events, and workshops providing opportunities for professional development and networking.

In addition, ICASE member organizations and their representatives receive reduced conference registration fees for attendance at all ICASE World Conferences. http://www.icaseonline.net/membership.html

Renew your organizational ICASE member fees and contribute to the leadership mission and vision of ICASE.

Are you interested in becoming more involved in ICASE?

Begin by connecting with your ICASE Regional Representative and joining ICASE Committees of interest.

Contact information for the ICASE Executive Committee, including the Management Committee, Regional Representatives, and the Chairs of all ICASE Standing Committees can be found at the end of this newsletter and on the ICASE Website.

EARLY YEARS

S.D.Tunnicliffe, ICASE EARLY YEARS, Chair CASTME

It would be useful to learn from member Associations if they work with or have any interests in working with learners below secondary age; and pre-secondary from before formal school entry age. That is Kindergartens and similar educational establishments designated as preschool and from both to the age at which some kind of formal establishment is joined. Comments from the Early Years Committee show that the situation varies according to countries and there is no one size fits all in provision. For example, the term we use in England, playgroup for regular informal play sessions for children is not understood by some other countries. The age for starting formal school varies from 4 to 7 years with kindergartens being for children between 4 and 7 in some countries whereas others begin formal school at 5 years, England has a foundation stage at 4 years where many children attend.

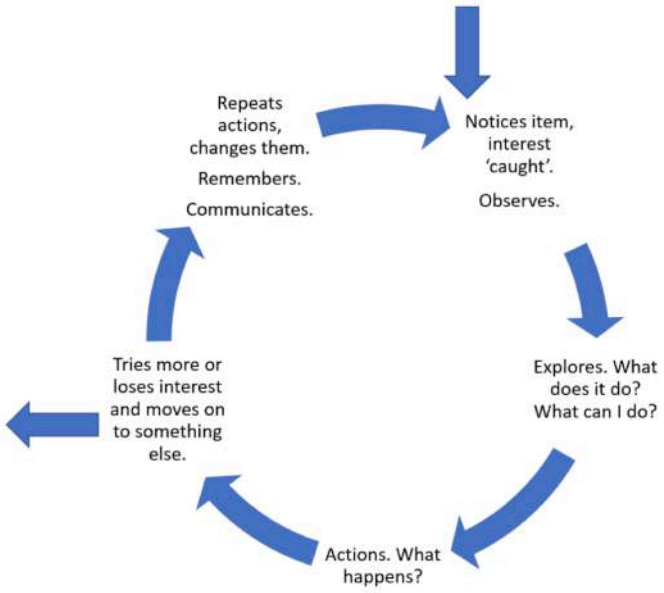
There is an increasing realisation that the foundations of a learners' science capital, their funds of experiences and understanding are the beginnings of such, built from their earliest years through actions and experiences in their free choice and facilitated play as well as their observations and experiences in their everyday world. Such vary depending on where they live and their culture and ways of life, times change as does pedagogy and curricula emphasis as well as government policies. ICASE executive recognised the importance of presecondary science education in 1988 at the Canberra meeting and now there is developing consensus that presecondary science experiences which embrace basic maths and engineering ideas and actions occur from the earliest years.
The stages of play are also beginning to be looked at by some science educators although most academic publications are focused on older children from 4 years such as the work of Millford and Tippett (2015) in Canada and the activities on their website (www.stemintheearlyyears.com).

The key to understanding the construction of science capital in the earliest of days is to observe and identify that which the child does, STEM-Experiences (STEM-E), the initial building blocks of understanding and concept acquisition which are taught at a later time, often in formal teaching.

I am using a STEM Play Sequence to record the stages of a play episode which is proving useful. The consecutive stages form interest being 'caught' to leaving the activity by the child can be represented in a cycle, a table, a flow chart or a narrative and illustrated by photographs. This is being tried with parents of very young children in some CASTME groups

The sequence of actions of this sequences is: 1. Interest caught when item, activity noticed; 2 Child Observes; 3. Interacts and Explores. What does it do? What can I do?; 4 . Actions. What happens?; 5a Tries more or loses interest and does something else. Leaves this STEM Sequence in Play **OR** 5 b. Tries, Repeats actions, changes them; 6. Remembers, stores for future application; 7. Communicates; 8 Returns to same activity, repeats interaction. Re-enters sequence.

The version of the *Play Cycle* below was presented at the 2021 JSSE Conference.



Tunnicliffe, S. D., & Kennedy, T. J. (2021, August 21). The Foundation of STEM through Play. *STEM Education in Early Childhood*, Japan Society for Science Education (JSSE) Conference Proceedings, pp. 191-194.

ANNOUNCEMENT

Professor Michael Reiss wishes to donate his collection of science education journals. If anyone is interested and can collect them or arrange for such contact: m.reiss@ucl.ac.uk

- Unbound journal issues from about the year 2000 to the present.
- A number of journals including *International Journal of Science Education*, *Journal of Research in Science Teaching* and *Journal of Applied Philosophy*.
- To be collected either from my home (six miles South-West of Cambridge) or from the Institute of Education, 20 Bedford Way, London WC1H 0AL.

CALL FOR CONTRIBUTIONS TO *RESEARCH IN SCIENCE EDUCATION*
SPECIAL ISSUE: A TRIBUTE TO PROFESSOR PETER FENSHAM, AM, Vale 23 August 2021

Joanne Burke ASERA Executive Officer info@asera.org.au

In this Special Issue, we seek to honour and celebrate the life, work and profound influence of our colleague Professor Peter Fensham on the field of science education. The Special Issue provides us with a wonderful opportunity to acknowledge Peter as the founder and shaper of ASERA and to recognize the ongoing influence of his work and mentorship on the ASERA community as a whole. For this Special Issue, we invite contributions in a range of categories, as listed below. The Co-Editors will collectively review all submissions and make decisions on how to best include the widest possible range of voices and contributions for this Special Issue. This may include combining voices into a single piece or sending papers for formal review.

Submission categories:

1) Memorial tributes (up to 500 words);

2) Recognition of Professor Fensham's research contributions to the field (up to 2500 words);

3) Recognition of Professor Fensham's research mentorship (up to 2500 words). Contributions from ECR, HDR students and current researchers are welcomed;

4) Commentary on how Professor Fensham's foundational work has advanced since its publication or introduction, for example, theoretical developments, conceptual or assessment frameworks, or influence on curriculum internationally (up to 3000 words).

In this special issue, a range of pieces will be included and we invite you to share this call across your networks so that the Special Issue includes the widest possible international representation to celebrate Professor Fensham.

Timeline

Call for contributions: early November 2021

Submissions due: February 2022

Decisions for inclusion: May/June 2022

Publish date: September/October 2022

Co-Editors:
K. Nichols,
W. Nielsen, R. Cooper,
R. Gunstone


Prof. PETER FENSHAM

Submission Guidelines: Interested contributors can provide a submission for any two of the listed categories. Please send your submission(s) to A/Professor Kim Nichols, The University of Queensland, Australia (k.nichols@uq.edu.au) and include names, email addresses and institutional affiliations for each co-author.

Safety News: Issues in getting back to "Normal"

Bob Worley, Chemistry Advisor, CLEAPSS Science United Kingdom bob.worley@cleapss.org.uk

Bob Worley (CLEAPSS UK) feels that some of the ideas developed in trying to teach practical science during the pandemic may be here to stay. And on a personal note it has been rather kind to him.

Ken Roy (Chief Science Safety Compliance Adviser for the National Science Teaching Association of the United States of America is concerned how going back to "normal" might impact on second year students and educators in their science practical lessons.

Getting Back to a New Normal?

By Bob Worley, Chair of ICASE Safety

Part A: The Impact of a return to "normal" work in UKI schools

Measures such as stopping gatherings of people (e.g. work, sport, schools, parties, etc), restricting travel and requiring the wearing of face masks, are not recognised as "normal" behaviour in many countries. It is considered a restriction on individual freedoms. Other countries have a different view where the wearing of masks is considered more normal behaviour. The initial data from these countries[1] does support these measures in preventing the spread of the virus.

In January 2022 in the UK, CLEAPSS[1] published guidance to our schools, based on the safety advice from the UK government. It began "All practical activities should be seen as possible, as part of a return to a more "normal" school life." The inverted commas around "normal" means that CLEAPSS realises that teaching in our schools will not be normal compared to 2019 even though the government want it to be. Between 15 to 20% for students and 9% of teachers were absent one week in January week and some mask wearing had to return. I have always been aware that ICASE (like CLEAPSS and other advisory services) can only advise our members on safety. Similarly, scientists can only advise their governments. Politicians have to deal all manner of other issues including the economy and the legal system. Headteachers have to deal with the loss of education, absences and mental health issues of their students and employees. With the availability of vaccines that are seen to work, the UK government want no more lockdowns. The UK government has not helped itself by their own behaviour during lockdown period of 2020. Politicians that made the law and rules, broke them, and lied about the circumstances. The UK population's acceptance of lockdown (and our Queen exemplified that at the funeral of her husband) and resilience during that period is now been replaced with anger. However, every country will be different and ICASE, as an international body, must respect that. However, we can share our experience of the times.

Our schools developed many strategies during the last 2 years to cope with the issues Some have been so effective that we may be keeping them. This will be a "new normal". Here are examples.

1. Teaching rooms and ventilation systems were designed up to 2019 to keep the heat in and reduce energy costs. There were instances of respiratory illness and Sick Building Syndrome in these schools. In addition, with a rise of carbon dioxide levels in a room, students become less attentive and do not learn efficiently.
   Now we have to open the widows. New buildings will have improved mechanical ventilation but that can cause problems. As I have to deal with fume cupboards in schools in the UK, I have found that the efficiency of toxic gas extraction by fume cupboards is affected by nearby open windows and extraction vents near a fume cupboard. However, school design in the UK will never be the same again.
2. Schools have had to devise new methods of delivering practical work. One method has been to deliver equipment and chemicals with integrated instructions sheets on a tray for each pair of students arriving in the room. When they had finished the trays would be left at the table to be collected and cleaned by our wonderful school science technicians. Reducing class movement by students has improved behaviour and students become more focussed.
3. Washing hands has always important after practical science lessons but how can a teacher manage this with only 1 sink equipped with hot water for the students in a short space of time? Improved hygiene has been important in stopping the spread of the virus. I think we shall find hand sanitisers retained in science rooms.
4. Schools have had to return to mask wearing when there is a sudden surge in infection. The government have said that it can return as a temporary measure. If we have to live with the virus then sudden outbreaks will happen. Illness outbreaks may well see a temporary return to mask wearing.
5. National and international gatherings will become "blended" with a mixture of face to face and online presentations. (Something that ICASE may need to consider). Travel may never be the same again and one needs to equate this with carbon dioxide emission from fuels. It is not "green" to drive 300 kM to a meeting in another city or fly to a meeting in Dubai for 15 minutes of fame, when an online presentation will suffice. I do recognise and miss the benefits of face to face meetings though. Online delivery has significantly improved. Planning national and international meetings has turned into a nightmare for the organisers. We fully expected the Association for Science Education (ASE) face to face meeting to take place in January 2022 but in December, it had to be cancelled, and go online.

Part B: The impact on me with a prize and a Book

I have been fortunate by working at CLEAPSS in the past 25 years, to promote safer methods of performing practical chemistry using small-scale and microscale techniques. Initially, this was to improve safety of the delivery and reduce the risk of harm to teachers and students. However, when lockdown was taking place, it became an important method by which schools could do practical chemistry. Some practical activities could even take place in ordinary teaching rooms. I often pointed out that in other countries, this was how it always had to be done.

The schools that tried it were pleased. The Royal Society of Chemistry (RSC) Secondary and Further Education Group decided to base their July 2021 meeting on the microscale approach. By going online, it brought more people together, not only from the UK but from Brazil to China. The downside was that it was tiring looking at a screen for 5 hours, and it was stressful for the organisers, coordinating all the participants. However, we had a wonderful 2 day meeting with an online poster display[1]. For instance, with my colleague.

Dr David Paterson, we showed how advanced quantitative chemistry work such as reactions rates, equilibrium, titration, and even catalytic hydrogenation of alkenes, could be conducted with small scale equipment.

Nine months earlier though, in October 2020, I had been approached by Sarah Longshaw, of the ASE to write a book with David Paterson. David has devised the integrated work sheets[1]. So as I worked on the RSC meeting, I was writing the book. As the book was going into print in November 2021, had a surprise. I received news that I had been awarded the RSC 2021 Excellence in Secondary and Further Education Prize[1], for significant and sustained contributions to the development and promotion of safe practical resources for teachers worldwide, especially in the field of microscale chemistry.

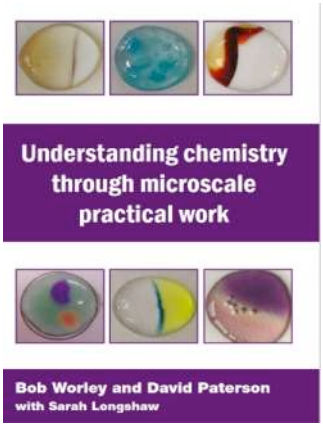
The small book is available[1] both in print and as an interactive PDF which you can download. In either case you will also gain access to a website; there is nothing at the moment (Jan 2022), but soon extra items will be added. In the book, we sometimes refer to CLEAPSS documents. These are behind a subscriber paywall, but we think there is enough information in the book for a competent teacher to use the procedures.

The methods are not based on a kit. Kits require continual maintenance and parts-replacements, but the use easily obtained materials such as plastic Petri dishes, plastic transfer pipettes 1 to 60cm^3 syringes, dropper bottles and even plastic folders from the school office.

It also makes use of advances in technology such as the small digital balances weighing to two decimal places and cost less than £10. Improvisation is also necessary; the crown bottle tops (with the plastic insert burned out) make excellent crucibles.

The sudden interest in the UK using these methods have been brought about by the pandemic but teachers and technicians have found there are other advantages including widening the variety in presentation, classroom control, explaining chemistry and challenging misconceptions.

Time cannot be reversed. Whatever teachers do in the future will be influenced by what we did during this pandemic. We will not go back to the old “normal”.



Microscale activity 3.3: A microscale alternative to HCl/NH_3 diffusion demonstration

Ensure that full planning and risk assessment is carried out before attempting this activity.

Outline requirements

- concentrated hydrochloric acid (DANGER: Corrosive)
- concentrated ammonia solution (DANGER: Corrosive)

(both need to be recently purchased or well-stored stock)

- goggles
- glass Pasteur pipettes (2)
- silicon tubing
- clamp, boss and stand

Outline method

1. Ensure that the room is well ventilated and the activity has been rehearsed.
2. Connect the two pipettes with a short piece of silicone tubing (see Figure 3.5).
3. Dip one pipette tip in the hydrochloric acid and the other in the ammonia solution.
4. Clamp the set-up horizontally.
5. Observe for about 3 minutes – a ring of ammonium chloride will appear closer to the acid end.

Measuring the distance of the disc from either end illustrates that the lighter gas has travelled further, in the same time period, than the heavier gas. There are billions of air particles in the way of the hydrogen chloride and ammonia particles, but these particles still get through the air particles to react – chaotic random motion somehow produces order.

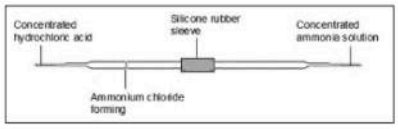


Figure 3.5: Apparatus set-up for microscale activity 3.3

Microscale activity 3.4: Diffusion in solutions

Ensure that full planning and risk assessment is carried out before attempting this activity.

'We did precipitates last year' is a comment heard from many students every year. Recovering concepts over the course of a student's' chemical education is important – the spiral curriculum. However, there should be new ideas and observations each time to help develop their understanding.

Many of the solutions that students used are already made up for them. They appear as 'water', given that they are often clear and colourless. The sudden appearance of a solid can appear as 'magic'. This activity combines dissolving, diffusion and precipitation.

Outline requirements

- potassium iodide (a few crystals)
- silver nitrate(V) (a few crystals) (DANGER: Oxidiser, corrosive)
- eye protection
- dropper bottle of water
- piece of paper
- plastic wallet
- wooden splint

Outline method

1. Make a puddle of water about 1 cm across (15–20 drops).
2. Carefully place a few crystals of potassium iodide in one side of the drop, and a few crystals of silver nitrate in the other side.
   a. Either push the crystals into the drop using a dry splint, or
   b. dampen the end of the splint, dip into a pile of the crystals and then dip into the drop.
3. Observe the drops over time (Figure 3.6 and Figure 3.7).

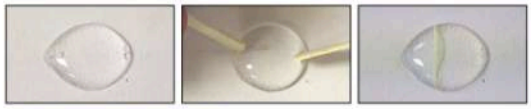
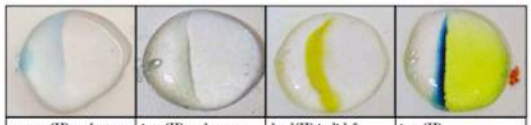


Figure 3.6: Formation of silver iodide in a drop

Next Page

Example outcome

Many other precipitation reactions are possible (Figure 3.7)



copper(II) carbonate	iron(II) carbonate	lead(II) iodide*	iron(II) hexacyanoferrate(III)

Figure 3.7: Formation of transition metal precipitates

By demonstrating the existence of ions in solids, that ions exist in water when salts dissolve and that ions move in solutions, we can discuss the formation of compounds in reaction mixtures. Discussing the attraction between ions and water molecules, in the contexts of these microscale results, helps to make sense of the chemical equations that we wish our students to fully appreciate:

$$KI(aq) + AgNO_3(aq) \rightarrow AgI(s) + KNO_3(aq)$$

[i] https://ourworldindata.org/excess-mortality-covid
[ii] https://science.cleapss.org.uk/policies/what-is-cleapss.aspx
[ii] https://rscsafegroup.wordpress.com/2021-conference-posters/
[iv] https://edu.rsc.org/feature/improving-practical-work-with-integrated-instructions/3009798.article
[v] https://www.rsc.org/prizes-funding/prizes/2021-winners/mr-robert-worley-frsc/
[vi] https://www.millgatehouse.co.uk/product/understanding-chemistry-through-microscale-practical-work/

Safety Awareness and Pandemic Learning Loss

By Ken Roy (A document posted by the USA National Science Teachers Association, Jan 2022)

Over the past two years, teachers across the country have been dealing with the learning loss experienced by their students due to the COVID-19 pandemic and resulting public health crisis. The current public health crisis has required many students and their teachers to stay home from school/work due to isolation, quarantine, or slowed or shuttered schools. The resulting learning loss has affected and will continue to affect the development of our students for years to come. Many teachers are working diligently to try to address these learning losses to help our students reach the academic level that they need to succeed in a hands-on laboratory situation.

Laboratory skills and laboratory safety are two areas of learning loss we cannot forget while focusing on academic goals. For the past two years, students have had either limited or no opportunities for practicing and developing their laboratory skills and resulting safety protocols/practices. The loss associated with this lack of opportunity has been well documented in introductory biology and chemistry classes at the university level[1]. Without hands-on laboratory activities, students haven't been repeatedly reminded of the safety considerations. These must be addressed every time students are in a laboratory situation, to help them develop the safety awareness that is inherent when repeatedly working in a laboratory setting. A lack of this skill development leads to decreased data collection skills and an unsafe teaching/learning environment.

During the pandemic, many educators adopted virtual laboratories; teacher- or student-led demonstrations; and videos to help students learn in the laboratory. These activities helped keep students from contracting the COVID virus and its variants. But now the downside is that science and STEM teachers across the nation have been reporting that their students do not seem to have the expected laboratory skills needed to be successful. This loss of skill development results from students not getting the same hands-on teaching/learning opportunities to develop their laboratory techniques as they did before the pandemic. 5need to use those skills acquired in previous classes and apply them to their current laboratory setting.

What Can Be Done

Educators need to spend more time and effort teaching students how to use laboratory equipment and materials correctly and safely. Many current high school sophomores (second-year students) are doing hands-on laboratory experiments for the first time. Most of them have not done a meaningful laboratory activity for several years. This, of course, assumes that their middle schools were properly equipped to conduct a hands-on laboratory in the first place. Those safety skills that teachers have taken for granted cannot be guaranteed to be present in students who didn't do hands-on lab work during the pandemic. Therefore, time needs to be incorporated into the laboratory schedule to help students attain the appropriate skill levels that they need to safely work in the laboratory.

This is especially true for higher-level science classes. For example, students may be taking an Advanced Placement (AP)–level science course without ever having conducted a hands-on laboratory in their previous courses. The advanced hands-on laboratory skills required to be successful at the AP level have to be taught, or retaught, to the students so they can succeed in a laboratory environment.

As educators, we need to exhibit more patience in the laboratory. Hopefully, we may be heading toward a more "normal" school environment, but our students are not entering our classrooms with the skills and understanding that we "normally" expect. Teachers must be patient as they help students make up for their learning loss in the laboratory while developing the laboratory skills they missed but are needed to be successful. Even the great coach John Wooden used to teach his outstanding athletes how to put on their socks and shoes at the beginning of each season[1]. We must embrace the same attitude and make sure that we do not expect our students to know how to do things properly without ongoing instruction in lab safety basics.

Laboratory Safety

As with the learning loss associated with laboratory skills, we cannot presume students have learned or practiced the necessary laboratory safety skills. In a "normal" year, we would recommend that teachers not assume that the students, or the other adults in the room, know anything about laboratory safety. At best, they may know very little about it. This is especially true this year. As educators are strained for time in the classroom, it is important that they do not eliminate science safety to meet their curricular goals. A reasonable person would not assume that students understand laboratory safety, especially since most of them have not experienced a true hands-on laboratory activity in the last two years. Constant vigilance and attention to detail are a must if we want our science/STEM rooms to be safer places to teach and learn.

Final Thought

The pandemic has presented educators with many new and unconventional challenges. Do not forget the ones that go unnoticed, but are critical. These include the laboratory skills needed to be successful and the laboratory safety awareness that is essential to keeping people safer.

Dr. Ken Roy wishes to sincerely thank nationally recognized District Supervisor of Science Kevin S. Doyle, Ed. D., Morris Hills Regional District, Rockaway, New for his professional review of and contribution.

[11] Sonbuchner, T. M., E. C. Mundorff, J. Lee, S. Wei, and P. A. Novick. 2021. Triage and recovery of STEM laboratory skills. *Journal of Microbiology & Biology Education,* 22 (1): 22.1.94. *https://doi.org/10.1128/jmbe.v22i1.2565*.

[1] http://www.johnsadowsky.com/a-tale-of-socks-and-shoes/

Postscript

So, what happened in your country? Is it similar? Are you concerned as to how students and new teachers are going to cope with practical work when governments require education to return to normality? What new teaching strategies have you learned?

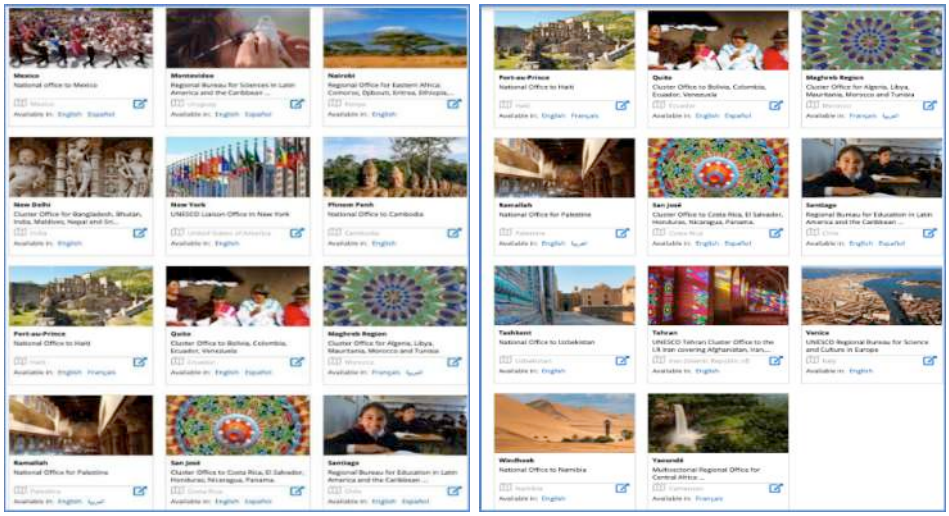
Please share your thoughts and experiences and send your comments to bob.worley@cleapss.org.uk for future publications.

UNESCO FIELD OFFICES

Through its field offices, UNESCO develops strategies, programmes and activities in consultation with national authorities and other partners. UNESCO also operates a number of specialized institutes and centres. Check the list below to see the location of the UNESCO Field Offices.

For more information see:

https://en.unesco.org/fieldoffice?field_country_reference_target_id=All



For all UNESCO Offices by Region see: http://www.unesco.org/new/bfc/all-offices/

Up Coming Events

The National Science Teaching Association (NSTA) Annual Conference 2022

The National Science Teaching Association (NSTA) Conference
31 March – 3 April 2022 in Houston Texas

The **National Science Teaching Association (NSTA) International Advisory Board** is thrilled to present the work of innovative educators from around the world and those who involve educational initiatives that cross their homeland borders. Featuring K-16 educators – immerse yourself in discovering new perspectives on best practices, novel content delivery, new approaches to scientific literacy, and more. We invite you to participate in the ***Global Initiatives Enhancing Science Education: An International Film Festival and Share-a-thon****!*

- **Interact with educators:** Face-to-face poster presentations.
- **Share:** 5-7 minute pre-recorded video submissions from educators around the world.
- **Participate:** Hands-on/minds-on, takeaway learning experiences.

Repeat Video Sharing to be shown at the International Reception!
NSTA Global Initiatives Enhancing Science Education: An International Film Festival.
21 – 23 July 2022
https://www.nsta.org/chicago22

Add your video to the Film Festival! We invite submissions from diverse areas of science education including elementary through to college science education, policy standards, best practices, novel content delivery, scientific literacy, and informal education.
LENGTH: Videos should be between 5-7 minutes. Shorter videos are permitted but videos are not to exceed 7 minutes.
VIDEO FILE FORMATS: Videos must be MP4. Other formats might not be supported.
CONTACT: Teresa Kennedy tkennedy@uttyler.edu to obtain additional information to add your contribution to the International Film Festival and to submit your video!
DEADLINE: Submissions must be received by 1 JUNE 2022.

ICASE Journal - Science Education International (SEI)

Steven Sexton – Editor
College of Education, University of Otago, Dunedin, New Zealand, **steven.sexton@otago.ac.nz**

The first issue of *Science Education International* for 2022 begins this journal operating under new publication guidelines. We now make explicit our alignment with Committee on Publication Ethics (COPE) guidelines. This has altered our publication guidelines. These new guidelines can be found at:

http://www.icaseonline.net/journal/index.php/sei/about/submissions#authorGuidelines.

In the most recently published issue of *Science Education International*, Volume 32 (Issue 4) Brazil's Joaklebio Alves da Silva and Monica Lopes Folena Araújo present documentary research that sought to analyse, in a comparative perspective, evidence of a proposal for education for ethnic-racial relations present and/or absent in the curriculum guidelines and in the common national base for initial teacher training and implications for the teaching of anti-racist science and biology in Brazil. da Silva and Araújo's study employed indirect documentation to collect the data about initial training of science and biology Brazilian teachers regarding Education for Ethnic-Racial Relations. da Silva and Araújo critique the current policies and documents regarding initial teacher education. They concluded that the new Curricular Guidelines and the Common National Base for the initial training of teachers in Brazil does not bring concrete evidence of an effective educational process aimed at Education for Ethnic-Racial Relations. They conclude their analysis with a plea for future practice to be able to benefit from this analysis.

SEI also welcomes new reviewers. If you are interested, please contact **steven.sexton@otago.ac.nz**

ICASE Executive Committee 2020-2023

ICASE membership spans the world led by an Executive Committee, with a Management Committee (President, President-Elect, Immediate Past President, Secretary, and Treasurer) responsible for the day-to-day administration and working closely with Appointments Co-opted to the Management Committee, Regional Representatives, and Chairs of Standing Committees. Presidential terms are noted below.

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