

Dear Readers,

Advancements in digital technology have revolutionised the way the world lives, works and plays. Indeed, digital technology has become deeply entrenched in our modern lives. With the vision to transform into a Smart Nation that is powered by digital innovation, the Singapore Government has been investing resources to galvanise all segments of the society to harness digital technologies.

Aligned with national efforts, SEAB has also been incorporating digital technologies and innovations to improve our services and processes to deliver more value to our stakeholders. Since the introduction of computer-based components in the national examinations about seven years ago, we have continued to push boundaries to transform national examination processes and service delivery for candidates and examination personnel as well as improve the efficiency and productivity of our internal organisation processes for staff. Some examples include the expansion of computer-based assessment to more subjects, implementation of onscreen marking, transformation of coursework administration through digitalisation, introduction of assessment products and service delivery enhancements through a call management system. In this issue, we will share some of our recent digitalisation projects which bore fruit over the past few years.

Incepted in 2005, the *iPSLE* was introduced for overseas schools offering the Singapore primary school curriculum to benchmark against Singapore's education standards. In 2020, the *iPSLE* was conducted in 19 appointed examination centres across 8 countries. As 2020 is the 15th anniversary of the *iPSLE*, a webinar was organised for all the *iPSLE* centres to celebrate the event together virtually. Read more about the event on page 16.

Despite being in the midst of the COVID-19 situation, we were pleased to have two interns from the National Institute of Education and a teacher join us for short term attachments this year. They shared some thoughts about their experience and you can find out more on pages 18 to 21.

If you are looking to scale up your assessment literacy capability or explore potential job opportunities with SEAB, these are available on page 22 and page 24 respectively.

Take care and we hope you enjoy reading this issue.

Meng Lee,
on behalf of the SEAB-link editorial team



CONTENTS

03

Reduction of Coursework
Administration through Digitalisation

05

Automated Item Generation in
CATalytics

07

Transforming SEAB's Service
Delivery to Stakeholders

09

SEAB's New Building:
Be Smart to Be Green
Safe and Secure

12

Transforming Marking in
National Examinations – Onscreen
Marking for Locally Developed and
Marked Subjects

16

Inaugural iPSLE Webinar 2020

18

Professional Experiences @ SEAB

22

Training Calendar 2021

24

Career Opportunities in SEAB



Reduction of Coursework Administration through Digitalisation

Coursework subjects such as Art, Design and Technology, Music, and Food and Nutrition help students to acquire important process skills. As these coursework subjects often require the development of artefacts and preparatory work, a hardcopy approach to moderation would present the following challenges:



◀ *Hardcopy course work submissions*

Physical transportation of artefacts ▶



◀ *Storage of artefacts*



- Transportation of the physical artefacts, preparatory work or hardcopy reports to SEAB for moderation;
- Traffic congestion in SEAB due to large numbers of vehicles entering the premises;
- Physical & environmental constraints in the storage of the submissions;
- Security of the submissions at the storage area during moderation;
- Deployment of a large pool of personnel to manage the coursework submissions during moderation.



Familiarisation session for O-Level Exercise and Sports Science's e-Moderation module (photos were taken pre-COVID-19)

DIGITALISATION OF COURSEWORK ADMINISTRATION

To resolve the challenges faced by teachers, examination personnel and SEAB, we tapped on the existing eExam System to develop an eCourseWork (eCW) System that allowed teachers to submit candidates' works electronically to SEAB for review and allowed moderators to carry out e-moderation.

To communicate the changes to various stakeholders, the team conducted briefings and familiarisation sessions for teachers as well as trialled the electronic submission for the N(T)-Level Art coursework as a pilot project to ensure that the new system was working smoothly before it was used for the assessment of all coursework subjects from year 2020. The team also took in feedback from the trials to improve the user experience for school personnel.

BENEFITS



Teachers

- Ease administrative load for teachers e.g. eliminating the need to manage hardcopy forms and the manual calculation of marks



Schools

- Help schools create digital archives of students' coursework for teaching and learning
- Preserve the school's archives of student work indefinitely in digital form, as compared to the physical archival of the works, which will be subject to degradation over time due to heat and humidity
- Facilitate easy storage and retrieval of data, saving schools physical storage costs and transport costs for bulky artefacts



SEAB

- Reduce administrative effort (including manpower saving) to move bulky artefacts
- Facilitate improved accuracy and consistency in assessment, and eradicate all risks of manual computation errors as mark scaling is performed by the system
- Reduce risks of damage (hence enhanced security) to coursework during physical transport of artefacts



POSITIVE FEEDBACK FROM TEACHERS

Teachers were pleased that they no longer had to spend time packing candidates' work for submission to SEAB and coordinate the logistics of transporting hardcopy work to SEAB for external moderation. They appreciated the eCW System as a one-stop platform to seek School Leaders' endorsement of the coursework marks and examination submissions, as well as submit the final data to SEAB. Many commented that the elimination of hardcopy marksheets and the need for wet-ink signatures saved them time and removed the burden of safeguarding sensitive hardcopy materials for the duration of the examination cycle.

Following the launch of the eCW system in 2020, SEAB received feedback from teachers in charge of subjects requiring extended essay submissions that they would like the e-submission to be extended for their subjects. They noted the e-submission benefits that their colleagues in charge of coursework had enjoyed and requested SEAB to implement the same e-submission format for their subjects!

Automated Item Generation in CATalytics

While a large part of SEAB's work is dedicated to the national examinations, another facet of our work is to conduct research and develop assessment products and services for the education fraternity.

One such product that we have been developing for our local students is CATalytics, which is based on the Singapore MOE Primary Mathematics curriculum. With a vision to transform and personalise assessment for students, we began the development process in 2015 with the goal of developing computerised adaptive testing for the entire suite of Primary Mathematics topics. Information from these tests can serve to inform, support and enhance teaching and learning in schools.

What is CATalytics?

CATalytics is a Computerised Adaptive Test (CAT) that allows each student to demonstrate his/her knowledge of a topic by tailoring tests to his/her ability. This provides schools and teachers with more precise results and detailed information about their students' mastery in each topic. Teachers can use the qualitative descriptors provided in the reports to design learning programmes targeted at individual students or groups of students.

How does computerised adaptive testing work?

In a computerised adaptive test, students' responses are scored as each question is completed. The computer selects subsequent items based on the student's performance. Tests begin with a question of moderate difficulty. If a student answers the question correctly, the computer selects a more challenging question as the next question. Conversely, an incorrect response results in the selection of a less difficult question (refer to Figure 1). In this way, the computer adapts as it gains information about the student and builds a customised test for each student as the test progresses. Hence, CATalytics is more precise than a traditional linear test since it is tailored to the student's ability.

How can CATalytics help our students?

The test reports students' performance by profiles and describes the learning outcomes in MOE's Primary Mathematics syllabus that students can and cannot manage by topics. Teachers will receive reports that help them better understand the performance of their students, which they can follow up with appropriate interventions to help targeted students bridge the learning gaps.

Challenges in developing the CATalytics tool

The effectiveness of CAT greatly hinges on the quality and size of its item bank. The quality and size of the item bank is the key in determining how well students' ability can be accurately and precisely measured. In addition, having a large item bank reduces the chance of the same item being repeatedly used for many students, thereby minimising the risks of high item-exposure rates. Given the nature of the CAT, a number of good item writers will need to be engaged over a period of time to design the items. While there are programmes to automate and expedite the item generation process, these programmes are usually proprietary with minimum customisation.

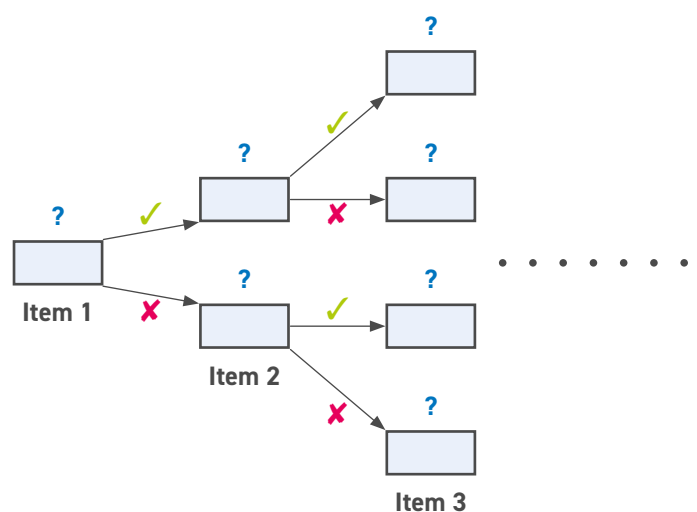
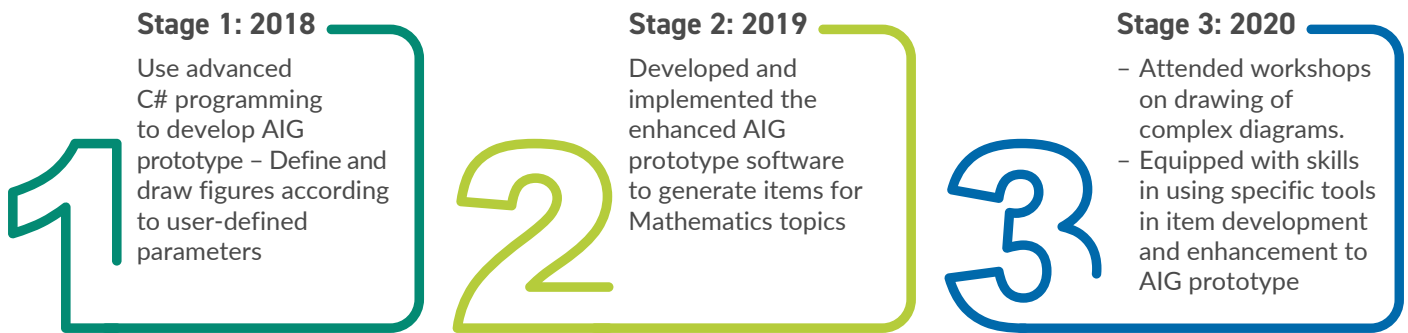


Figure 1: Item Selection for Computerised Adaptive Test



Overcoming the odds

Undeterred by the lack of access to these programmes, the team embarked on the challenge to explore approaches to develop an in-house Automated Item Generation (AIG). The team conducted environment scans to understand the strategies adopted by researchers in item generation processes. These scans provided the team the conceptual understanding of the steps of the AIG process so that we could operationalise the AIG systematically using computer programming. The AIG development is summarised in the 3 stages below:

Stage 1. The team developed two prototypes: a semi-automated version and a fully automated version. In 2015, SAS programming was used to generate user-defined parameters before mail merging to Word to generate different items. The limitation of this AIG prototype was that it could not automate the drawing of figures with different dimensions. As a result, advanced programming C# was used to build an AIG prototype that could define and draw figures according to the user-defined parameters.

Stage 2. In 2019, a second prototype software was developed to generate and save individual items into image files in specific folders. This method removed the need to hire temporary staff to crop, store and rename individual items.

Stage 3. To expand the capacity of the team, two external experts who specialised in AIG were engaged in Nov 2019 to share their approaches in drawing complex diagrams using html5 coding.

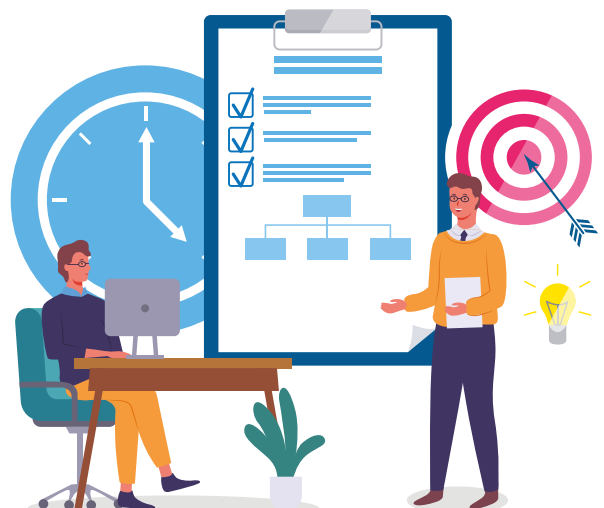
Benefits

Here are the benefits of AIG:

- The development of the CATalytics software allowed for cost savings as there was no necessity to engage item writers to develop a large item bank.
- A high-quality item bank was developed and it yielded more precise and accurate measurements of students' mastery, and more useful assessment information for teachers and students to enhance teaching and learning.
- By controlling the parameters of the item stem using constraints, a family of items with similar demand could be generated. Hence only a representative set of these items needed to be calibrated and this reduced the number of schools needed for the calibration exercise.

Future Plans

Our next step is to adapt and enhance the AIG concept and/or software so that it could be used to develop items beyond Mathematics. This will expand the suite of Assessment for Learning tools that SEAB provides to stakeholders to support teaching and learning. Other potential applications include non-national examination products commissioned by MOE.



Transforming SEAB's Service Delivery to Stakeholders

With the aim to better serve our stakeholders, we embarked on a journey to transform the service delivery in SEAB in 2017. The aspiration was to establish our own service brand through understanding and responding to our stakeholders' needs and delivering quality service with higher citizen touchpoints using technology and human-centred processes as the key enablers.

As part of a phasal approach to achieve this, we reached our first milestone in August 2020 when a Call Management System (CMS) was commissioned, along with the setup of a dedicated team to manage public queries. These initiatives were the first steps to transforming SEAB's examination operations and service delivery.

IMPLEMENTATION OF A CALL MANAGEMENT SYSTEM (CMS)

During the national examinations period, SEAB would receive numerous calls from schools and examination personnel regarding queries about the conduct of examinations.

The existing processes were time consuming, manual and labour-intensive as officers needed to transfer information from phone calls to emails. With limited land lines available, it also restricted the number of callers that could reach the officers at any one time. Hence, a call management system would help to properly manage, track and record the incoming calls.

To centralise resources, a CMS solution that allowed concurrent call operations for both the national examination operations and the handling of public queries, with a segregation between the hotline numbers and user groups, was identified.

The implementation of a CMS offered a more seamless customer experience for our stakeholders and helped us to overcome the challenges below:



1

Better management of calls with the availability of call waiting features and auto-diversion of incoming calls to the next available agent;



2

Caller identities and past call history were readily displayed for agents' information, facilitating easy retrieval and verification;



3

Available data from calls allowed us to review and improve our processes; and



4

Introduction of Interactive Voice Response (IVR) helped to answer some common queries posed by the public.



SEAB officers using the CMS to receive calls during national examinations



Dedicated team of officers handling public queries

INITIATIVES FOR BETTER SERVICE DELIVERY

In addition to the CMS, we also implemented initiatives to build our capacity and capability in managing public queries as well as support the goal of improving our service delivery to our stakeholders:

- Setting up of a dedicated Service Delivery Team to handle and manage public queries;
- Streamlining the public query processes to allow the public to contact SEAB directly via an online feedback form;
- Implementing e-payment solutions for candidates; and
- Availing resources and information on SEAB’s corporate website for the public to better understand the national examination processes.

We would continue to look into directing our customers towards higher touchpoints such as digital services. This would include:

- Setting up a portal for private candidates to perform transactions and submit requests;
- Introducing voice-enabled IVRs for higher engagement and interactivity with callers; and
- Using social media to better engage our stakeholders.

We would also review and improve our processes to bring about better customer experiences for our stakeholders.



SEAB's New Building: *Be Smart to Be Green*

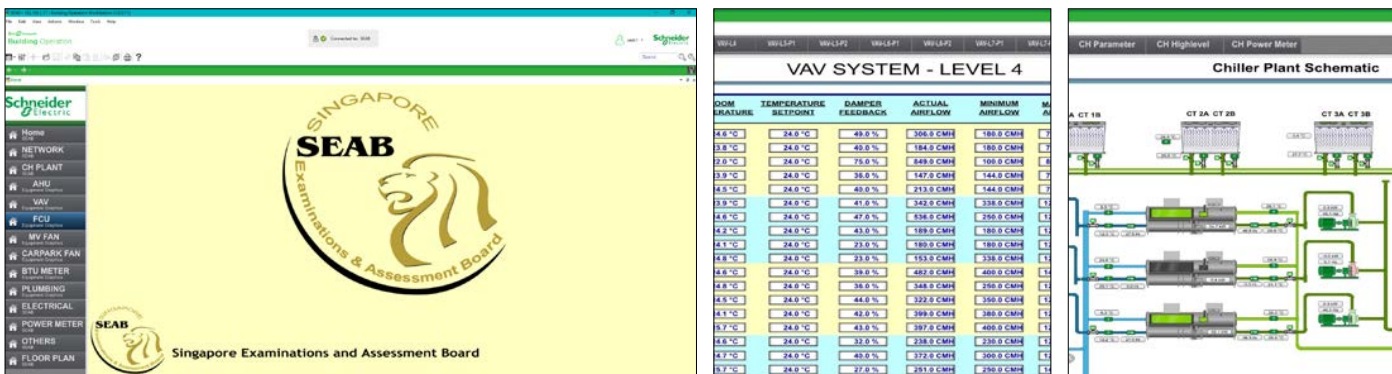
BCA GREEN MARK SUPER LOW ENERGY BUILDING

In Singapore, buildings consume one-third of the nation's total electricity consumption. Hence, building energy efficiency is critical in the national agenda of tackling the long-term challenges of climate change and global warming. When we embarked on the redevelopment of SEAB's new building three years ago, we had a clear vision that the new SEAB building will be green, smart and sustainable for our future generations. At the same time, it will be our SEAB home that inspires innovation and promotes collaboration and employee engagement.

SEAB was awarded the BCA Green Mark Platinum (Super Low Energy) building in April 2020. A Green Mark Platinum (Super Low Energy) building deploys both passive strategies and active technologies to cut energy consumption by at least 30%. Passive solutions incorporate good architectural design that interacts with the environment to reap optimal savings in consumption. Majority of the savings in

consumption are derived from the smart deployment of mechanical and electrical systems such as the hybrid cooling systems, the air conditioning system, mechanical ventilation, sensors, and the rain water harvesting system.





CHILLER SUMMARY													
CHILLER SYSTEM	CHILLER SYSTEM	2nd SET CHILLER	2nd SET CHILLER	CUT-IN BY	2nd SET CHILLER	2nd SET CHILLER	CUT-IN BY	CHILLER PLANT					
BOOKING TIMER	BOOKING TIMER	CUT IN SET-POINT	CUT OUT SET-POINT	TEMP	CUT IN SET-POINT	CUT OUT SET-POINT	TONNAGE	TONNAGE	TONNAGE	CHWS TEMP	CHWR TEMP	FLOW	CURRENT
OFF	OFF	18.0 °C	16.0 °C	OFF	160.0 RT	90.0 RT	OFF	8.448 °C	12.290 °C	53.2 U/s	242.0		

EQUIPMENT NAME	Model	Serial NO.	MODE	PRIORITY	START/STOP	STATUS	TRIP	VALVE START/STOP	VALVE STATUS	FAILED TO START	RESET	AVAILABILITY	RU
CT-01-A	EKK	0812A-2B1A	BMS	1	START	ON	NORMAL	START	INLET ON ON	NORMAL	RESET	AVAILABLE	
CT-01-B	EKK	0812A-2B1A	BMS	1	START	ON	NORMAL	START	OUTLET ON ON	NORMAL	RESET	AVAILABLE	
CDWP1	KPS012-9/0		BMS		START	ON	NORMAL		CHW VALVE ON EDW VALVE ON	NORMAL	RESET	AVAILABLE	
CH1	HKEV700DSTTG	9220039	BMS	1	START	ON	NORMAL	START		NORMAL	RESET	AVAILABLE	
CT-02-A	EKK	0812A-2B1A	BMS	3	STOP	OFF	NORMAL	STOP	INLET OFF OFF	NORMAL	RESET	AVAILABLE	
CT-02-B	EKK	0812A-2B1A	BMS	3	STOP	OFF	NORMAL	STOP	OUTLET OFF OFF	NORMAL	RESET	AVAILABLE	
CDWP2	KPS012-9/0		BMS		STOP	OFF	NORMAL			NORMAL	RESET	AVAILABLE	
CH2	HKEV700DSTTG	9220049	BMS	3	STOP	OFF	NORMAL	STOP	CHW VALVE OFF EDW VALVE OFF	NORMAL	RESET	AVAILABLE	
CT-03-A	EKK				ON	ON	NORMAL		INLET ON ON				

The BMS shows the various systems operating.

SMART ENERGY MANAGEMENT SYSTEM

A large part of the building's electrical consumption is attributed to cooling (60%), mechanical ventilation (10%) and lighting (15%). Another active source of energy consumption is plug loads, where users plug in their appliances and IT equipment for electricity and power. These loads may consume about 25% of the total building energy consumption due to the extensive use of computers, monitors and servers in the network rooms. SEAB's adoption of advanced technologies in the conduct of national examinations, such as onscreen marking, contributes to an increase in demand of plug loads.

The Building Management System (BMS) is the "brain" of the building that allows the facilities team to have sight of and control over various systems in action.

The BMS can control the power usage for air-conditioning, physical access controls, elevators, escalators and lights. It contributes to energy efficiency and savings on operation and maintenance costs as the facilities team can ensure that usage needs are met without compromising occupancy comfort.

By tapping on the Internet of Things (IoT), advanced sensors and data analytics, there is potential to save more energy in the SEAB building in subsequent years. Both our IoT-based occupancy-driven lighting control system and the hybrid cooling system are controlled using the BMS.

Safe and Secure



Main lobby of SEAB's new building



INTEGRATED RESOURCE, VISITOR AND SECURITY MANAGEMENT SYSTEM

The Integrated Resource, Visitor and Security Management System at SEAB automates the entire process of booking meeting venues, registering visitors and capturing detailed information in a secured environment. This single platform not only automates but also accelerates and integrates the visitor enrollment experience without compromising the safety and security of SEAB's assets.

The integrated system also communicates with the BMS whereby the air conditioning in the multi-purpose rooms will automatically switch on 15 minutes before a scheduled session and switch off after the session. As such, there are significant savings in energy consumption as unused rooms will not have air conditioning.

Transforming Marking in National Examinations – Onscreen Marking for Locally Developed and Marked Subjects

Since the commissioning of SEAB's onscreen marking system in August 2019, we have been making steady headway to onscreen mark an increasing number of locally developed GCE-Level papers and PSLE subjects in Singapore.

The following shows the implementation progress of onscreen marking locally since 2017.



Pilot and research studies

Commissioning of SEAB's onscreen marking system

First implementation for N(A)-Level Social Studies and O-Level Higher Mother Tongue Language (MTL)

- First marking exercise for O-level MTL in new building amidst COVID-19
- Inaugural *Bring Your Academic Device* (BYAD) exercise a success

- Scale up OSM for all N(T)/N(A)-Level subjects – Social Studies & MTL.
- Implement OSM for PSLE Higher MTL & Foundation MTL/Maths/Science
- Roll out OSM for O- and A-level subjects

2020 had been an extraordinary year in the journey of OnScreen Marking (OSM) and we had been on track to have all GCE-Level locally marked scripts to be marked onscreen by December 2020. OSM had also been progressively scaled up for PSLE, starting with the subjects with smaller candidate numbers, such as PSLE Higher Chinese, Foundation Science and Foundation Mathematics being marked onscreen in 2020. The target was to have all PSLE scripts onscreen marked by 2022.

This year was also special as it was the first time we conducted the marking exercises in the new SEAB building at Jalan Bukit Ho Swee amidst the COVID-19 pandemic. While this was a massive exercise which involved large numbers of marking personnel, safe management measures were put in place to safeguard the health and well-being of all personnel.

We would like to share some updates on the progress of the OSM for the various subjects:

PSLE Higher Chinese

The onscreen marking for the PSLE Higher Chinese Paper 1 was conducted at marking centres such as Nan Hua Primary School. A total of 210 markers reported to the school hall with their MOE issued laptops on 19 October, all ready for the OSM experience. These markers formed the pioneer batch of primary school teachers involved in OSM.

After attending the briefings by the Group Head and the Chief Marker, markers underwent the standardisation exercise in OSM and they were amazed that the system could compare their scores with those awarded by the Key Marking Personnel, and they could calibrate their marking easily.



Onscreen marking conducted at Nan Hua Primary School
.....

With the implementation of OSM, markers were able to complete the targeted marking load as planned without delay. Markers were also glad that there was less manual work involving the physical handling of scripts, such as counting and accounting for the number of the scripts. Other benefits included minimising human errors as processes such as OAS shading and the computation of scores were removed. Key Marking Personnel found monitoring and reviewing markers' work a breeze as they were able to have an overview of OSM.

PSLE Foundation Mathematics and Science

In preparation for OSM, we engaged the Chief Markers and Assistant Chief Markers in June to share more details on OSM. The Key Marking Personnel also attended a hands-on training session to familiarise themselves with the functions of the system. The marking exercise went smoothly, and all the markers managed to get the hang of marking with the system quickly. As a result of increased efficiency offered by the system and the reduction of the logistics associated with paper-based marking, the entire marking exercise was completed within 3 days.



PSLE Foundation Science
.....

GCE O-Level Mother Tongue Languages (MTL)

The marking exercise for O-Level MTL was conducted from 23 June to 1 July 2020. 313 markers and Key Marking Personnel stayed united and sailed through OSM while upholding the integrity of national examinations.

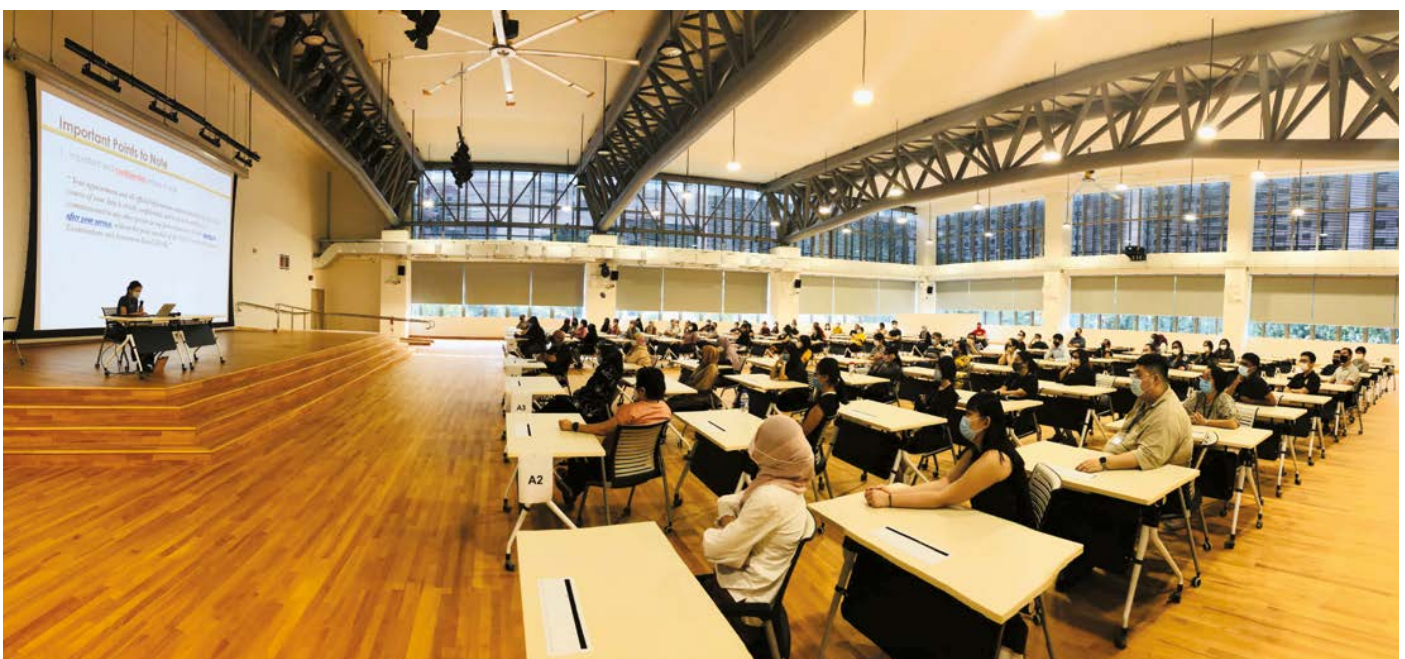
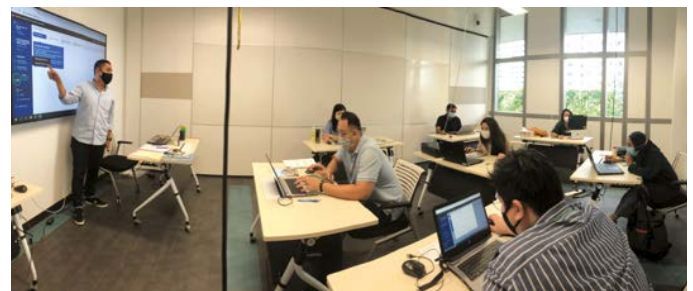
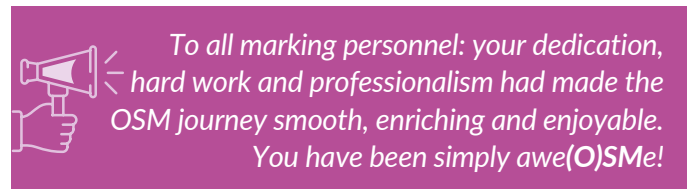
Standardisation exercises were conducted at separate venues with the use of video conferencing platforms as all markers had to observe safe distancing and zoning arrangements.

Most markers provided positive feedback that OSM was more efficient, without the need for them to add marks for various sections of the paper. Counting of scripts and transferring of envelopes was a thing of the past and this was what the markers were most delighted with. With the quality assurance parameters in place, markers also felt that the marking exercise was more rigorous.

GCE N(A)- and O-Level Social Studies

2020 was a momentous year for the O-Level Social Studies Marking Exercise as the national marking team came on board OSM for the first time in October and November. In 2019, the OSM journey commenced for N(A)-Level Social Studies; and in September and October 2020, OSM for N(A)-Level Social Studies was once again successfully conducted.

A total of 241 marking personnel took part in the N(A)- and O-Level marking for Social Studies this year. They gave resounding positive feedback on the ease of using the OSM system and the effectiveness of the standardisation processes in preparing them well for live marking. They also felt that the national marking of Social Studies had helped in their professional growth. Marking personnel were supportive of the split team and safe management arrangements for standardisation and live marking exercises which took place in small teams in separate marking rooms on different levels. With limited face-to-face interaction within each team and zone, the Social Studies marking exercises leveraged the communication channels within the OSM system.



GCE N(A)- and O-Level Social Studies

Comments from markers who participated in Year 2020 OSM:

As a PSLE Maths marker for more than 20 plus years, this has been the most wonderful marking experience ever. You folks are totally professional; you pre-empted most if not all the technical issues and the entire marking exercise was just executed brilliantly.

Before I came on the first day, I was a little apprehensive and was thinking if I would be able to handle the intricacies/complexities of using a laptop to actually mark scripts! You and your team have put away all those fears/worries of mine once and for all.

Even Mr Yue's welcoming email was reassuring and calming, especially when we, the markers, had no idea what we would be experiencing in the days ahead.

Again, thank you for everything and for making this OSM the BESTEST and most AWESOME Maths marking experience for many of us! As a matter of fact, please call me back next year if you do not have enough markers.

~ Marker for PSLE Foundation Mathematics

During the "paper and pen marking era", we used to count the papers in the package before marking and count again after marking. It wasted a lot of time and was not very efficient. Onscreen marking is efficient as markers do not need to do the counting.

During this Covid-19 period, it is also more hygienic that we do not need to touch the physical papers and exchange them with other markers. It is definitely an excellent way to prevent the spread of virus.

~ Marker for O-Level MTL

The "wow" factors include onscreen annotations. The best part is that it is easier to mark this way, as compared to previous years where a lot of scripts have to be passed on from one marker to another, which resulted in a lot of waiting time. Everything from the reference materials to standardisation scripts can be easily accessed in one portal, which is very impressive. It is really a very unique experience and I am happy to participate in it and learn new knowledge about OSM.

~ Marker for PSLE Higher Chinese



It was an enriching experience! The ease and efficiency of the OSM system and processes that were put in place made my experience wonderful. There was a good marking structure to support professional work and guidance was given to marking personnel. The built-in quality assurance processes in the OSM system such as the use of quality assurance scripts, random checking and supervisor sampling helped to ensure high quality and reliability of marking. The OSM system also built in good messaging functions which allowed us to communicate with marking teams quickly and effectively. Every SS marking exercise was well supported by SEAB and was a good platform to build professional teams which would grow and work well together. OSM had enhanced this professional growth and team work further. OSM has definitely been a key marking innovation. SEAB, thank you!

~ Marker for GCE-Level Social Studies

On the whole, it was a smooth marking experience. Communication with markers was facilitated well through the messaging system. Supervisor sampling and monitoring features were helpful in ensuring the marking quality of my team. Thank you for a memorable marking experience.

~ Marker for GCE-Level Social Studies

This is my first experience with OSM and national marking. There is a very steep learning curve but it has been a very productive and effective learning experience for me. The Chief Markers are very professional and knowledgeable in their field of expertise. I hope to learn more from them. Thank you.

~ Marker for GCE-Level Social Studies

Inaugural *i*PSLE Webinar 2020

2020 marks the 15th anniversary of the *i*PSLE. Incepted in 2005, the value proposition of the *i*PSLE was to serve as a benchmark against Singapore's academic standards for overseas schools. As of November 2020, there are 19 *i*PSLE centres around the region, such as in Thailand, Cambodia and Maldives amongst others.

In celebration of the 15th *i*PSLE anniversary, SEAB organised its first *i*PSLE webinar on 17 June 2020 for our overseas educators. The aim of the webinar was to share useful assessment practices applicable to the overseas schools. Despite school closures in various parts of Asia due to COVID-19, the *i*PSLE centres were excited to be part of this inaugural webinar. The webinar was well-received and all the participants indicated their interest in attending more of such webinars hosted by SEAB.

During the session, Mr Yue Lip Sin, Chief Executive of SEAB, conveyed the message that the key for students to be future-ready was in developing a strong foundation in literacy and numeracy.

This would enable young learners to reap the joy of learning.

As the new *i*PSLE scoring system to be implemented in 2021 would take reference from the new PSLE scoring system, SEAB also took the opportunity to share the details with the representatives from the respective centres. The new scoring system would heighten the focus on the students' individual achievements in each subject instead of in relation to their peers. An additional "Certificate of Commendation" would be awarded along with the new scoring system in recognition of the candidates' performance in *i*PSLE. The centres appreciated the changes to align with the Singapore's new PSLE scoring system.

Directors and assessment specialists from SEAB were also invited to share various topics on assessment with the representatives from the centres. The session ended with a lively panel discussion where queries from the participants were addressed and the future plans of SEAB were shared.

Zoom Meeting | You are viewing SEAB-CY (Emcee 2)'s screen | View Options

Recording... | Gallery View

2020 *i*PSLE Webinar

Panel Discussion

- Mr Yue Lip Sin, Chief Executive of SEAB
- Ms Selena Yeo, Senior Director, Corporate Cluster
- Mr Lee Ah Huat, Director, Assessment Planning and Development Division
- Mrs Cheah Mei Ling, Director, Assessment Planning and Development Division
- Ms Tay Lai Ling, Director, Research and Development Division
- Ms Bernadette Lim, Deputy Director, Assessment Planning & Development Division
- Dr Alwyn Pang, Lead Assessment Specialist (Mathematics)
- Mr Ow Mun Hoe, Lead Assessment Specialist (Sciences)

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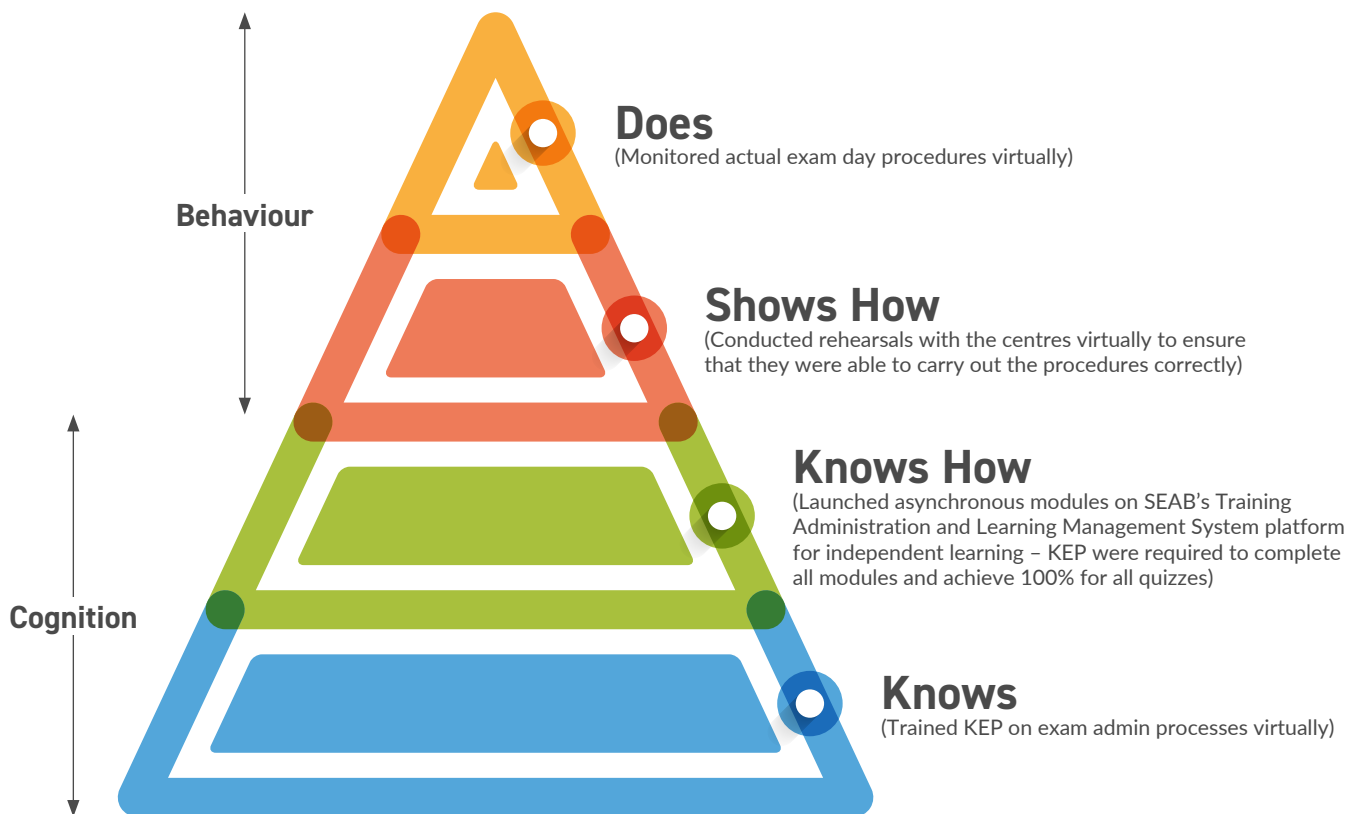
SEAB-Adeline Teng

Unmute | Start Video | Security | Participants (58) | Chat | Share Screen | Pause/Stop Recording | Reactions | Leave

Training of Key Examination Personnel for iPSLE

Prior to the COVID-19 situation, we used to invite the Key Examination Personnel (KEP) to Singapore for a one-day training programme in preparation for iPSLE. However, this was not possible this year due to travel restrictions.

To ensure that our KEP continue to build their competencies in conducting the iPSLE, training for the KEP was conducted via virtual conferencing using the concept of Miller's Pyramid¹ as shown below.



Using a video-conferencing platform and the Training Administration and Learning Management System platform, we launched both synchronous and asynchronous online training programmes for the KEP. These training programmes took the form of blended learning and the KEP were actively engaged in acquiring and applying their knowledge and skills ("Knows" and "Knows How") through problem-solving activities and quizzes.

After the KEP had completed their online learning, they demonstrated their knowledge and skills ("Shows How") by administering a mock iPSLE. On the days of the actual examinations, all centres were scheduled to have video conferencing with SEAB officers who would watch them conduct the exam live. This demonstrates the highest level of learning - "Does". The KEP provided feedback that they were more confident in conducting the iPSLE after the online training.

With the training and guidance provided, the 2020 iPSLE was conducted successfully.

¹ The Miller's pyramid is based on work by Miller GE, The Assessment of Clinical Skills/Competence/Performance; Acad. Med. 1990, 65(9); 63-67

Professional Experiences @ SEAB



Colleagues from the Assessment Services Department with Ms Wong and Mr Tham

Learning is an activity that we will never stop in our life. It is a continuous journey that we are engaged in, sometimes consciously and sometimes unconsciously. Learning enriches minds, hones skills, and gives new perspectives to the way we see the world and ourselves.

In this article, we will share the learning from three educators who have been attached to SEAB under the NIE's Teacher Scholar Internship and the Teacher Work Attachment programme.

NIE'S TEACHER SCHOLAR INTERNSHIP

Wong Sue Jin and Tham Cheng Yuan are National Institute of Education (NIE) Teacher Scholar interns and they had the opportunity to experience what it is like to launch a webinar platform for SEAB.

Wong Sue Jin

I am an undergraduate student teacher pursuing a bachelor's degree in Science (Education) at NIE. During the break after our first year, we were given the opportunity to sign up for an internship under my school's BUILD programme. At first glance, SEAB stood out on the list because I could associate the organisation's name to the major national examinations that I worked hard for in school. The idea of being a part of the organisation that was in charge of setting these major examinations was fascinating to me.



NIE Teacher Scholar interns: Ms Wong and Mr Tham

The internship programme SEAB offered was entitled "International Educators Programme". It caught my eye as I remembered a post-examination trip to New Zealand with my father and we met a few teachers from different parts of the world who shared their teaching experiences excitedly with us. I vividly recalled a conversation with one of the hosts, who was a retired teacher. He had many experiences teaching around the world. This was when the idea of education in the international context became more prominent to me. The fact that I could meet international educators was enticing and it drew me to apply for the position.

It was enriching to learn about the *iPSLE* community of which I knew nothing about prior to this internship. From the moment we joined SEAB, we were already informed of our role in helping to host the *iPSLE* 2020

Webinar. The weeks leading up to that event provided us with sufficient training and exposure to understand how the Assessment Services Department (ASD) in SEAB worked. Some of the tasks assigned to me required me to work independently, such as proposing designs for a brochure and a plaque, while the other tasks required collaboration with my internship partner, which included uploading the iPSLE 2020 Webinar training materials on an online platform for the purpose of training the examination personnel remotely because of the COVID-19 pandemic. Regardless of the different responsibilities entrusted to us, everyone in ASD was very patient in answering our questions and guiding us through the drafts we proposed. It was also heartening to feel the team spirit among the officers as everyone worked very hard towards the common goal of making the webinar a success, in addition to their individual workload of conducting non-national examinations and training. Everyone also pitched in to give ideas and feedback spontaneously which I believed was the key in running the webinar smoothly and successfully!

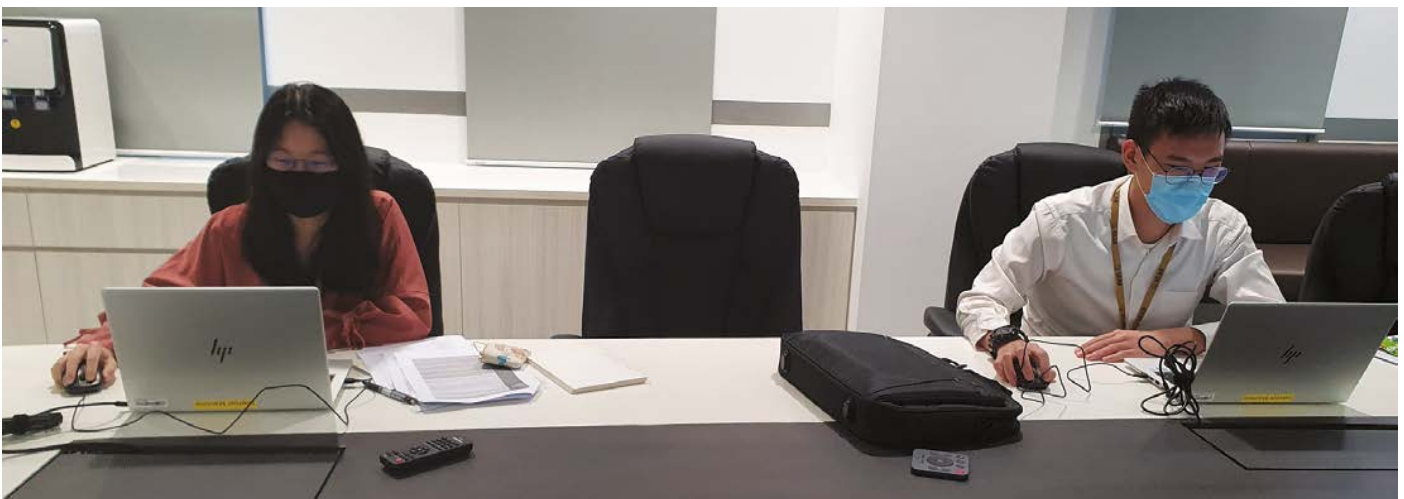
Personally, it had been an eye-opening experience to witness some of the backend work that I might not experience as a classroom teacher in future. The only regret that I had was the fact that we could not physically work in the office together. The few days that we were back in the office for the dry runs gave me a small taste of what the experience could have been! Nonetheless, I'm still grateful for this opportunity to work with one of the best teams I could ask for. Thank you so much for the care and guidance. I will definitely miss SEAB.

Tham Cheng Yuan

I am studying at NIE with a major in Physics and am currently undergoing training to become a secondary school teacher. I chose to complete my internship at SEAB based on the advice I received from my seniors. On hindsight, I am thankful that I have chosen SEAB.

When I was briefed on my job scope on my first day, I was surprised at the number of tasks and responsibilities that I was entrusted with. As an intern, I did not expect to be given so many important tasks such as designing the slide template for a webinar on the very first day. I was slightly worried at first but the team in ASD was very helpful and understanding as they answered all my queries and guided me along. Due to the COVID-19 situation, there were many changes to how events were run. We had to transform physical workshops to virtual ones using an online learning platform. One such event was the iPSLE 2020 Webinar. Preparing for this event was a large undertaking and it was the hard work of the entire ASD that made this webinar a huge success. We had multiple practice runs and open discussions on improving the webinar throughout the preparation phase till the day before the webinar. When we were having the practice runs, everyone was free to speak their minds and discuss potential improvements. I think this is a very important culture trait that I would like to have in the organisation that I will be joining in future.

The internship was an interesting experience which exposed me to new knowledge. I would definitely recommend this internship to my NIE juniors as



Helping out in the iPSLE Webinar

they will get to experience a different side of MOE and potentially learn some new skills. I am thankful to all in SEAB, especially the ASD team, for being patient with me, imparting the wealth of knowledge and skills and giving me this opportunity to work with them.

TEACHER WORK ATTACHMENT PROGRAMME

The [Teacher Work Attachment programme](#)¹ is offered to school teachers who are keen to learn about SEAB's work and at the same time, develop a deeper understanding of the assessment practices. If you are keen to find out more, please contact

the Assessment Officers from the respective departments of your specialisation in SEAB. Their contact details can be found in this directory [listing](#).

Sharing from Mr David Yong

Mr David Yong, an English Language teacher of 24 years, felt that it was important for an educator to continue learning to stay relevant and serve better in this ever-changing education landscape.

David was successfully accepted into a ten-week attachment programme with SEAB at the start of Term 2 this year. In this article, David shared about his experience at SEAB.



1. Please tell us more about yourself.

I joined the Ministry of Education (MOE) in July 1996 and I am currently the Year Head for Primary 5 and 6 students at Edgefield Primary School. I specialise in the English Language (EL). During my tour of duties, I have taken on many roles – Head of Department (HOD) for EL, HOD for Pupil Development, HOD for Special Projects and Curriculum Planning Officer in Curriculum Planning and Development Division.

2. Why did you choose SEAB for your work attachment?

In my years of service in MOE, there is one motto that I live by – ‘A man of reason for every season’. This basically sums up why I do what I do. I believe in Serving, Giving, Leading & Learning. It is important for an educator to stay relevant in order to serve better. Hence, the attachment with SEAB was providence. I thank Karen, Joys and Yin Yuen for making this stint possible. They were the ones who interviewed me, and I was attracted to the warmth and genuineness each of them displayed.

3. What was your most memorable experience during your work attachment?

When I first started my attachment, the measures to be in place for us to combat COVID-19 were still being discussed. However, I really appreciated the speed and agility that SEAB had shown in implementing Work From Home measures. Joys was correct – what a strange time to be on an attachment. At the same time, what an interesting and amazing time to be on an attachment. Working from home had really taught me what really mattered and how I should manage my time better to seize each day.

¹ The link for the Teacher Work Attachment programme is only accessible by MOE teachers who have access to MOE's intranet.

4. Based on your experience, what are the key differences between working in SEAB and in schools?

SEAB is clearly service-oriented and focused on the design and governance of assessments. I appreciate the processes put in place to safeguard confidentiality in order to fulfil this important function. Schools focus more on student-centricity and holistic development of students. Teachers are in the frontline building relationships with students, parents and one another in the fraternity. I do not see key differences between working in SEAB and in schools. Instead, I see key similarities. Firstly, there is a culture of care and excellence for us to do our work in a safe environment, where we can perform our best, grow and stay engaged. SEAB has a clean, tidy and conducive environment with polite and friendly colleagues. Secondly, there are constant opportunities to sharpen each another's competency through regular conversations about the task at hand and how work can be improved. I participated in a moderation session and had email exchanges to improve the work that I had done. Conversations were gentle and uplifting, and messages were aimed at clarifying and sharpening assessment thinking.

5. What did you gain from the work attachment, and how do you think your experience could help in your work back in school?

I am a little clearer about the nature of assessment work where English Language (EL) is concerned. It is intense in terms of understanding the EL examination syllabus and how assessment plays an important role in the holistic development of students. When I return to school, my first step will be to arm every EL teacher with an EL examination syllabus and work alongside them to help them understand what it means and sets out to achieve. Assessment is only a part of the entire learning process, and it works in tandem with planning and delivering effective lessons to meet the syllabus outcomes. Training teachers to unpack the syllabus outcomes will form the bulk of my application back in school after this attachment.

6. In SEAB, we promote the #JoyAtWork and #PrideInWork culture as well. What was your fondest memory from this attachment? Was there anything in particular that gave you great satisfaction?

During my stint at SEAB, I appreciated the care and support shown by Joys. She was nurturing and provided opportunities for me to be involved in several projects – each one a great learning experience. I was also grateful to Charmaine and Kerstin for involving me in their areas of work. They provided greater clarity on what each of their meaningful projects entailed and gave me very useful feedback. I was also happy that Rajen guided and inspired me during the moderation meeting. The #JoyAtWork and #PrideInWork culture is shown clearly in the quality of care at SEAB. This is built on a foundation of excellence in the work that SEAB sets out to do. I am glad that I had a short but memorable taste of this at SEAB.

7. Any parting thoughts that you would like to share?

I mentioned that this attachment stint in SEAB was providence. The same providence also showed me that there is much that I do not know. While I leave this attachment with a feeling that I have learnt, I acknowledge that there is still much more to learn. I shall humble myself and continue to be teachable.

Training Calendar 2021

The following workshops are conducted by SEAB in collaboration with the Academy of Singapore Teachers. If you are an MOE teacher and you are interested in signing up for the workshops, please do so via OPAL2.0.

FOR MOE PRIMARY SCHOOL TEACHERS

Workshop Title	Duration (Days)	Date of Training
Introduction to Assessment for Beginning Teachers – English Language	1	Class 1: 25 & 26 Jan 2021 (Online – 2 half days in the afternoon) or 25 Jan 2021 (Face to Face – full day) Class 2: 10 & 11 Nov 2021 (Online – 2 half days in the afternoon) or 10 Nov 2021 (Face to Face – full day)
Introduction to Assessment for Beginning Teachers – Chinese Language	1	23 Apr 2021
Introduction to Assessment for Beginning Teachers – Mathematics	1	7 Apr 2021
Introduction to Assessment for Beginning Teachers – Science	1	4 & 5 May 2021 (2 half days in the afternoon)
Introduction to Assessment for Beginning Teachers – Tamil Language	1	10 Mar 2021
Introduction to Assessment for Beginning Teachers – Malay Language	1	13 Apr 2021
Assessment Literacy 2.2+: Developing and Implementing Assessment in School (Primary)	1.5	28 Jan 2021 (Full Day) 4 Mar 2021 (PM)

FOR MOE SECONDARY SCHOOL TEACHERS

Workshop Title	Duration (Days)	Date of Training
Assessment – English (Normal Technical)	1	Class 1: 17 & 18 Feb 2021 (Online – 2 half days in the afternoon) Class 2: 26 & 27 Jul 2021 (Online – 2 half days in the afternoon) or 26 Jul 2021 (Face to Face – full day)
Assessment – English (Normal Academic/Express)	1	Class 1: 10 & 11 Mar 2021 (Online – 2 half days in the afternoon) Class 2: 24 & 25 Mar 2021 (Online – 2 half days in the afternoon)
Assessment – Chinese Language	1	23 Jul 2021
Assessment – Malay Language	1	14 Apr 2021
Assessment – Tamil Language	1	18 Aug 2021
Assessment – Mathematics	1	21 Apr 2021
Assessment – Science (Lower Secondary)	1	27 & 28 Jul 2021 (2 half days in the afternoon)
Assessment – Physics	1	23 & 24 Feb 2021 (2 half days in the afternoon)
Assessment – Biology	1	23 & 24 Feb 2021 (2 half days in the afternoon)
Assessment – Chemistry	1	23 & 24 Feb 2021 (2 half days in the afternoon)
Assessment Literacy 2.2+: Developing and Implementing Assessment in School (Secondary)	1.5	8 Apr 2021 (Full Day) 30 Apr 2021 (PM)

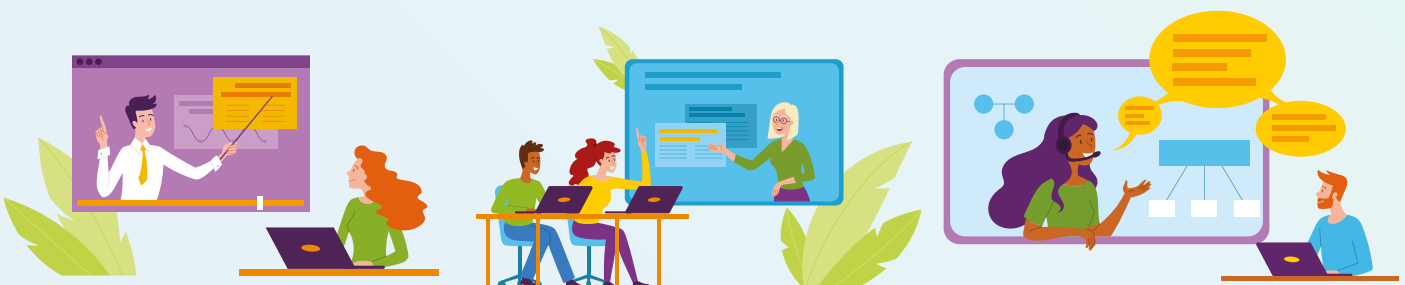
The following workshops are conducted by SEAB. Interested teachers may sign up for the workshops via the links provided or indicate your interest by sending an email to SEAB_Training@seab.gov.sg.

FOR MOE PRIMARY SCHOOL TEACHERS

Workshop Title	Duration (Days)	Date of Training	Sign-up
CEA in Edn Elective Module: English Language (Primary – Reading)	2	Run 1: 21 & 24 May 2021 Run 2: 27 & 30 Aug 2021	https://go.gov.sg/reg-ceaem202-2021
CEA in Edn Elective Module: English Language (Primary – Writing)	2	Run 1: 27 & 28 May 2021 Run 2: 11 & 12 Aug 2021	https://go.gov.sg/reg-ceaem203-2021
CEA in Edn Elective Module: Mathematics (Primary)	2	Run 1: 14 & 15 Jul 2021	https://go.gov.sg/reg-ceaem204-2021
CEA in Edn Elective Module: Science (Primary)	2	Run 1: 5 & 6 Apr 2021 Run 2: 11 & 12 Aug 2021	https://go.gov.sg/reg-ceaem205-2021
CEA in Edn Elective Module: Chinese Language (Primary – Reading)	2	Run 1: 25 & 26 Feb 2021 Run 2: 19 & 20 Aug 2021	https://go.gov.sg/reg-ceaem209-2021
CEA in Edn Elective Module: Malay Language (Primary – Reading)	2	Run 1: 22 & 23 Mar 2021 Run 2: 23 & 24 Aug 2021	https://go.gov.sg/reg-ceaem210-2021
CEA in Edn Elective Module: Tamil Language (Primary – Reading)	2	Run 1: 28 & 29 Apr 2021 Run 2: 30 & 31 Aug 2021	https://go.gov.sg/reg-ceaem211-2021

FOR MOE SECONDARY SCHOOL TEACHERS

Workshop Title	Duration (Days)	Date of Training	Sign-up
Assessment Literacy Workshop for Nutrition and Food Science (NFS) Teachers	0.5	Class 1: 10 Mar 2021 Class 2: 6 Apr 2021 Class 3: 15 Apr 2021 Class 4: 23 Apr 2021 Class 5: 28 Apr 2021 Class 6: 30 Jun 2021	https://go.gov.sg/reg-nfs2021
CEA in Edn Elective Module: English Language (Secondary)	2	Run 1: 27 & 28 May 2021 Run 2: 21 & 22 Jul 2021	https://go.gov.sg/reg-ceaem201-2021
CEA in Edn Elective Module: Social Studies (Secondary)	2	Run 1: 29 & 30 Apr 2021 Run 2: 27 & 28 Jul 2021	https://go.gov.sg/reg-ceaem206-2021
CEA in Edn Elective Module: History (Secondary)	2	Run 1: 27 & 28 Apr 2021	https://go.gov.sg/reg-ceaem207-2021
CEA in Edn Elective Module: Geography (Secondary)	2	Run 1: 27 & 28 Apr 2021 Run 2: 19 & 20 Aug 2021	https://go.gov.sg/reg-ceaem208-2021
CEA in Edn Core Module: Interpretation of Test Data	3	19 & 21 Apr 2021	More information will be provided on the SEAB website nearer the date
CEA in Edn Core Module: Quality Assurance of Test Development	3	28 & 30 Jul 2021	More information will be provided on the SEAB website nearer the date



Career Opportunities in SEAB



SEAB offers a rewarding and challenging career. We are looking for suitable candidates to fill the following positions:

- Assessment Officer, Biology
- Assessment Officer, Tamil Language
- Assessment Officer, Economics
- Research Officer, Assessment Research

Please refer to [SEAB's website](#) for more information and other available positions.

TEMPORARY POSITIONS

SEAB is looking for personnel to take on the following temporary roles in the 2021 National Examinations.

If you are a former full-time Education Officer with the Ministry of Education, you may apply for the following positions in January 2021:

- Setters (Primary and Secondary-level English Language)
- Markers (Primary and Secondary-level English Language / Secondary and JC-level Mother Tongue Language)
- Moderators (Primary and Secondary-level English Language)
- Oral Examiners (Secondary-level English Language / Secondary and JC-level Mother Tongue Language)

If you are a retired or former Education Officer from the Ministry of Education, Singapore Ministries or Statutory Boards, you may also apply for the following positions, starting from February 2021.

- HQ invigilators
- HQ Presiding Examiners

You can find out more details and apply for the temporary positions via the [Careers@Gov](#) website.

In view of the large number of applications, we regret that only shortlisted candidates will be notified.



Singapore Examinations and Assessment Board

Our Vision:

A trusted authority in examinations and assessment,
recognised locally and internationally.

Our Mission:

We assess educational performance so as to certify individuals,
uphold national standards and advance quality in assessment worldwide.

Our Values:

Integrity | Value people | Commitment | Professionalism | Teamwork