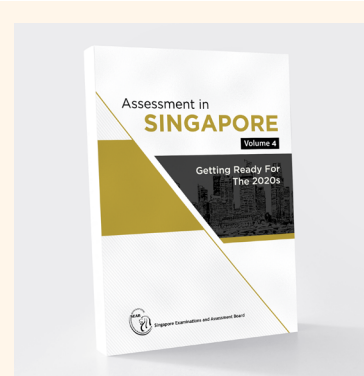
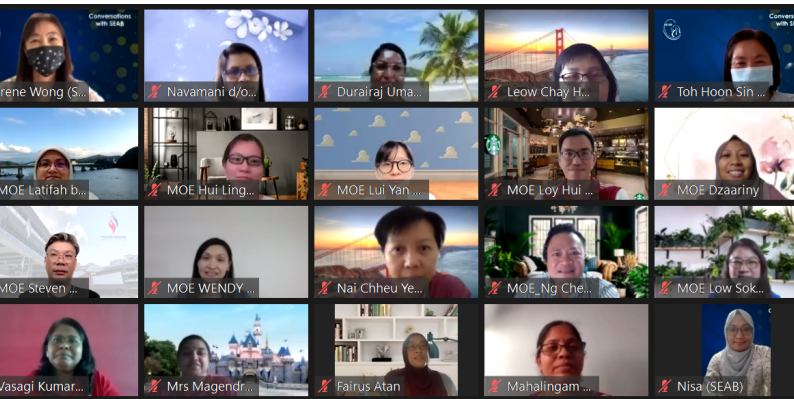




# SEAB-link

Issue 1/2021



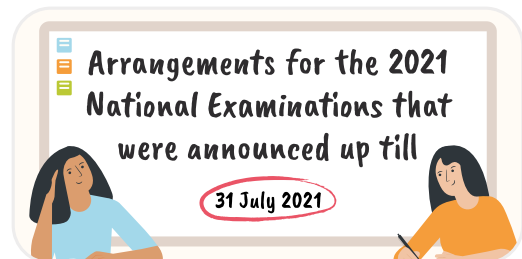
# Contents

03



Overview

04



Arrangements for the 2021 National Examinations That Were Announced Up Till 31 July 2021

07



SEAB's Onscreen Marking Initiative Wins A Public Sector Transformation Award

13



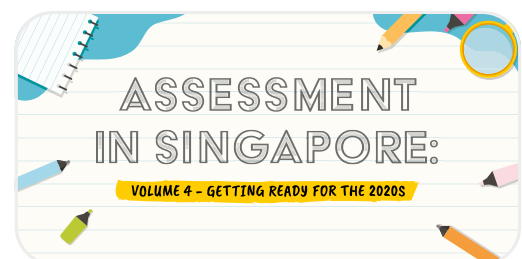
Conversations with SEAB

16



SEAB's Participation in the Data Arcade Tournament 2020

19



Assessment in Singapore, Vol 4



## Dear Readers

In this issue of SEAB-link, we highlight the arrangements for the safe conduct of the national examinations and SEAB's recent achievements at the Whole-Of-Government (WOG) level. We also bring you our regular updates of SEAB's stakeholder engagement efforts.

The first half of 2021 saw further changes to Singapore's COVID-19 situation. The presence of a more infectious variant of the virus raised red flags and the Singapore Government took swift action to restrain the spread of infections. SEAB had to act quickly to align the arrangements for the national examinations with the Safe Management Measures (SMM) announced by the Multi-Ministry Taskforce.

To protect the safety of candidates and examination personnel, we reviewed and implemented the measures for the conduct of the GCE O- and A-Level Mid-Year Mother Tongue Language (MTL) written examinations, as well as the PSLE and GCE-Level oral and listening comprehension examinations. SEAB and MOE also announced the removal of the Common Last Topics for the Year-End national examinations, after considering the disruptions from the local COVID-19 situation and the students' wellbeing. Additionally, the onscreen marking (OSM) exercises for the 2021 GCE O- and A-Level Mid-Year MTL written examinations were conducted with SMM in place. The prompt and considered actions by SEAB have ensured a safe conduct of the national examinations thus far. You can find out more about these on page 4.

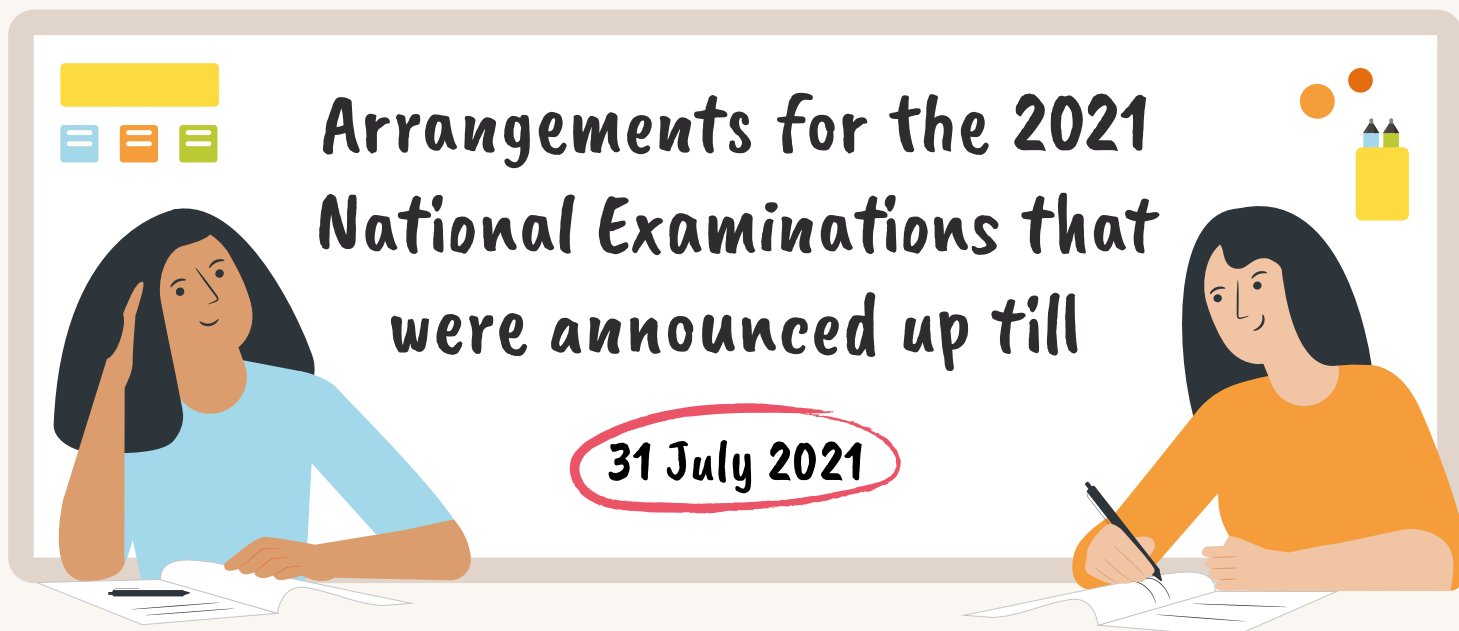
You may recall that SEAB introduced OSM a few years ago. The hard work put in has not gone unnoticed. The OSM project was conferred the Service Delivery Excellence Award at the 2021 Public Sector Transformation Awards. This recognition at the WOG level is an affirmation that the organisation is heading in the right direction in its digital transformation journey. To commemorate this milestone in our journey, we invite the OSM project team to recount their experiences and share their thoughts on attaining this prestigious award on page 7.

At the WOG level, SEAB also clinched another accolade at a recent visual analytics tournament. In the second half of 2020, three of our officers put their data capabilities to the test by participating in the 2020 GovTech Data Arcade Tournament. The tournament saw intense competition between 69 participating agencies across two data analytics tracks, and our officers emerged as first runners-up in the Tableau Track. We are happy to share about their learning experience during the tournament on page 16.

We hope that you will enjoy reading this issue of SEAB-link. Thank you for partnering with us in the delivery of the national examinations. Take care and continue keeping safe.

SEAB-link Editorial Team





# Arrangements for the 2021 National Examinations that were announced up till

**31 July 2021**

To ensure the well-being and safety of candidates and examination personnel in the examination centres, MOE and SEAB monitor the evolving COVID-19 situation closely and update the arrangements for national examinations so that a safe environment is provided for all.

With a more infectious variant of the COVID-19 virus present in the community and the rising number of infections, measures were reviewed to minimise the risk of transmission. The following groups of candidates were not allowed to sit for the national examinations conducted between May to August 2021:

- Tested positive for COVID-19;
- Issued with a Quarantine Order, Stay-Home Notice, or given a Leave of Absence due to close contact with confirmed COVID-19 cases;
- On medical leave due to Acute Respiratory Infection; and
- On Approved Absence, as a result of staying in the same household with members (aged 6 and above) who have flu-like symptoms.
- Issued with a Health Risk Warning, and received a positive COVID-19 test result.

Candidates who miss the examinations with valid reasons, including COVID-19 related reasons, can apply for special consideration.



## Conduct of the GCE-Level Mid-Year Mother Tongue Language (MTL) Examinations

The 2021 GCE O- and A-Level Mid-Year MTL and MTL Syllabus B written examinations were held on 31 May and 1 June 2021 respectively, coinciding with Singapore's Phase 2 (Heightened Alert) period. The following Safe Management Measures (SMM) were implemented for the 2021 GCE-Level Mid-Year MTL examinations:

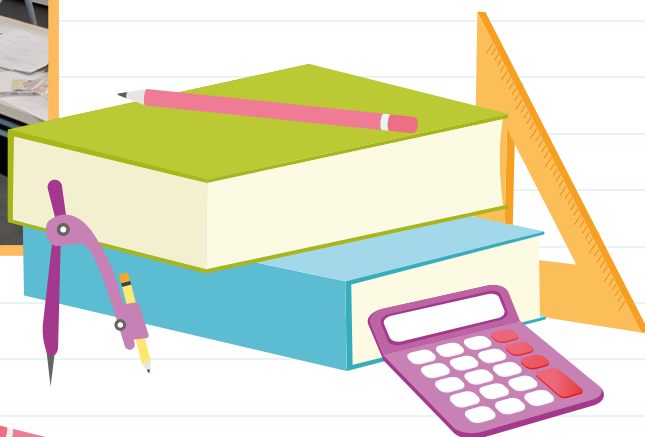
- Only smaller venues, such as classrooms with not more than 30 candidates per venue, were used.
- All candidates and examination personnel must wear surgical masks at all times during the examinations.

## Mid-Year Examination Marking Exercise

The onscreen marking exercise for the GCE O- and A-Level Mid-Year MTL and MTL Syllabus B written examinations was conducted at the SEAB Building from 2 to 15 June 2021. About 350 marking personnel were involved in the marking of 12 subjects. Appropriate SMM were put in place.



Marking was conducted in different rooms, with SMM strictly observed.



Some group photos of markers involved in the 2021 Mid-Year Mother Tongue Language onscreen marking exercise.

## Conduct of 2021 PSLE and GCE-level oral examinations

Most of the 2021 PSLE and GCE-Level oral examinations were conducted from July to August 2021. The tightening of COVID-19 measures with the return to Phase 2 (Heightened Alert) from 22 July to 18 August 2021 prompted MOE and SEAB to further finetune the SMM for the oral examinations to minimise the risk of transmission, as well as ensure the well-being of candidates and examination personnel.

**The PSLE oral examinations were conducted on 12 and 13 August over two full days instead of two half-days to reduce the number of candidates taking the PSLE oral examination per session:**

- On Day 1, the MTL oral examination was conducted in the morning followed by the English Language oral examination in the afternoon.
- On Day 2, the order of examinations was reversed.
- The number of PSLE candidates per session was reduced.

**There were also specific measures implemented at the PSLE and GCE-Level oral examination venues.**

- All examination personnel and candidates must wear surgical masks at all times.
- The distance between Oral Examiners (OEs) and each candidate was 1.2 m, while the distance between the two OEs was 1.2 m. The distance between the Assistant OE and each candidate was 1.5m except during the verification of attendance.
- Placards were affixed onto desks to remind candidates that they could alert and request the OEs to speak louder or repeat the questions, if they were unable to hear the examiners clearly.

## Removal of the Common Last Topics (CLT) for national examinations

On 23 June 2021, it was announced that the CLT for the 2021 PSLE Mathematics and Science examinations would be removed. On 27 July 2021, the removal of CLT for some 2021 GCE-Level subjects was announced.

**MOE and SEAB made the decision after considering the following factors:**

- With more confirmed COVID-19 cases among students and staff due to more infectious variants of the virus, some schools moved to Home-Based Learning (HBL) to safeguard the safety and well-being of the school community. As HBL may happen occasionally if there is a public health need to do so, students' learning may be disrupted and their well-being impacted, especially for the graduating cohorts.
- In addition, not all Primary 6 candidates are eligible for COVID-19 vaccination due to age. The removal of CLT will support the well-being of Primary 6 candidates who also have to familiarise themselves with the new PSLE Achievement Level scoring system.

The updated examination syllabuses with CLT removed can be found on [SEAB's website](#).

# SEAB'S ONSCREEN MARKING INITIATIVE

## Wins A Public Sector Transformation Award

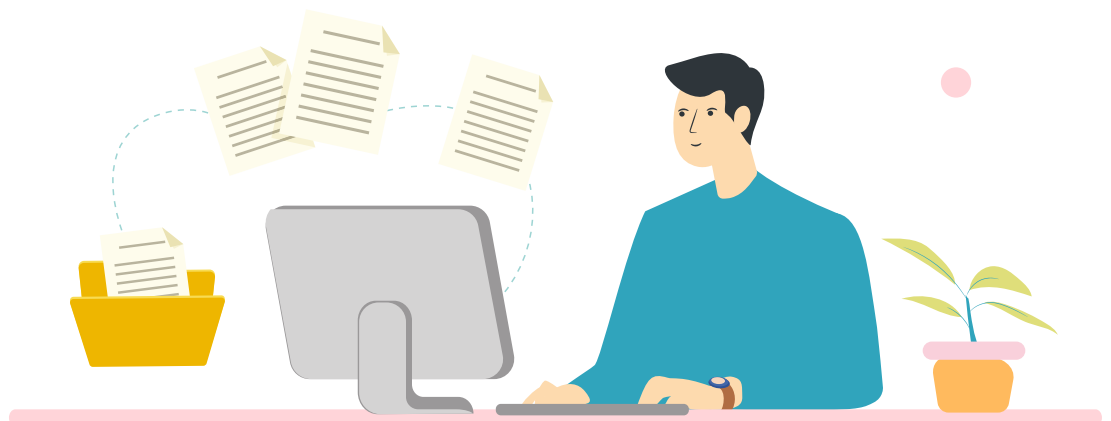
SEAB's project, "Digitalising Marking of the National Examinations", was conferred the Service Delivery Excellence Award (SDEA), one of several agency-level awards issued as part of the Public Sector Transformation (PST) Awards 2021.

The "Digitalising Marking of the National Examinations" project showcases the onscreen marking (OSM) initiative in which candidates' hardcopy answer scripts are digitised after the examinations and marked onscreen. There is no longer the need for scripts to be moved and counted physically, thus enhancing the security of script handling, and reducing physical and manual efforts by 80%.

SEAB introduced OSM in national examinations to enhance marking quality and efficiency. OSM allows SEAB to collect data about candidates' performance, marking efficiency and accuracy. The data is ploughed back for future marker deployment and training. SEAB is then able to identify strong markers for professional development as key examination personnel.

To date, all locally marked GCE-Level subjects are onscreen marked. SEAB is progressively transiting PSLE subjects to OSM. Markers have welcomed the OSM, citing that it has provided them with a pleasant and engaging marking experience.

The project team comprised members from the Assessment Planning and Development Division, Exam Operations Division, and Research and Development Division.





On 30 July 2021, SEAB's project was conferred the "Service Delivery Excellence Award" at the virtual PST Awards Ceremony that was attended by officers from across the Singapore Public Service.

◀ SEAB OSM project team.

Members of the project team were featured at the 2021 PST Ceremony. ▼



In this issue, we caught up with the project team regarding the OSM journey, and their thoughts on winning the PST award.

◀ Key members of the project team were featured in a video clip at the virtual ceremony.





# Can the team share how the idea was conceived?

Paper-based marking of the national examinations has been in place since the beginning of examinations, placing heavy demands on manpower, security, storage and procedures. Annually, more than 10,000 teachers are involved in marking exercises across the different PSLE and GCE-Level examination levels.

Due to the extensive manpower and resources required, SEAB saw great potential in leveraging technology to enhance the efficiency and quality of marking.

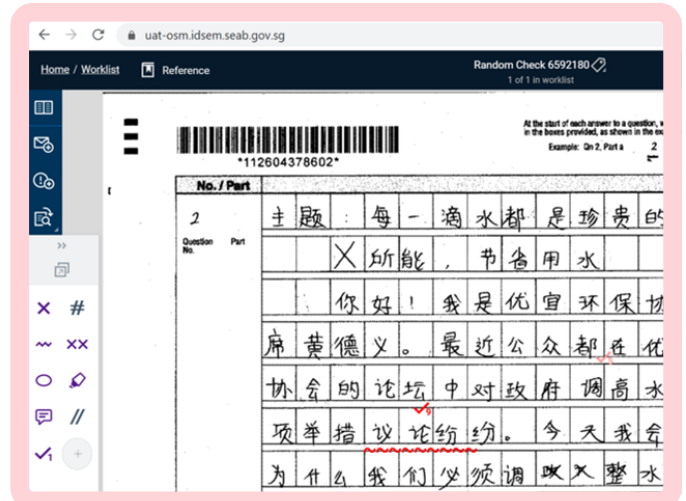
In 2015, SEAB observed the following benefits from advancements in OSM technology:

1. OSM enhances marking security and efficiency by automating administrative and operational processes. For example, it removes the need to physically transfer and count scripts. Instead, markers can focus on the professional aspects of marking, such as discussions of mark scheme with their marking supervisors.
2. It also enhances marking quality as OSM technology provides marking supervisors with information on marking accuracy and progress.

As these benefits would reduce the manpower required and enhance the marking quality and reliability, SEAB conducted several research studies in 2018 and 2019 on the potential use of pre-marked “Quality Assurance Scripts” (QAS) to ensure marking quality.

Our studies showed that single marking (i.e. each script is marked by one marker) augmented with QAS and random checks could achieve the same high quality of marking as compared with traditional double marking (i.e. each script is marked by two markers). This obviates the need for double marking of non-essay scripts. This innovation arising from QAS raised marking efficiency significantly while maintaining high standards of marking, and it gave us the confidence to roll out OSM to a larger number of subjects.

SEAB also developed a prototype for the research study. In 2018, the project team involved a group of teachers



A screengrab of the OSM interface with a mock script. Annotations, shown as symbols on the left-hand side of the screen, are available in the OSM system to aid markers during marking.

to pilot test the OSM interface and workflow with some subjects with a small candidate size. Feedback was gathered to continuously improve the system and marking experience, for example, through the placement of the mark entry boxes onscreen, and the placement of ticks to indicate the segments of candidates’ response that had already been considered. Such co-creation has engendered greater buy-in as well as support from stakeholders, especially the teachers, leading to a smooth implementation of OSM.

In 2019, we implemented the first full-scale OSM for GCE N(A)-Level Social Studies and GCE O-Level Higher Mother Tongue Language subjects. Subsequently, in 2020, all locally marked GCE subjects, including GCE O-Level Social Studies and all Mother Tongue Language subjects/papers, transited to OSM. OSM was also implemented for PSLE in 2020, for Higher Mother Tongue Languages, Foundation Mother Tongue Languages, Foundation Mathematics and Foundation Science. SEAB plans to roll out OSM to all locally marked PSLE subjects by 2023.

## How has OSM raised marking efficiency in the national examinations?

### Operationally more efficient

Through the use of OSM, pre-marked QAS are distributed to markers randomly among unmarked live scripts. These scripts, pre-marked by the Chief Marker, enable the key examination personnel to identify markers who mark too leniently or stringently. The key examination personnel will then provide guidance to improve the accuracy of marking. As such, OSM eliminates double marking and raises marking efficiency by 30% as compared to traditional pen-based marking. With physical movement of hardcopy scripts minimised, there was also a significant 80% reduction in temporary staff required.

### Marker management and rich data on marking efficiency

Labour-intensive manual allocation of scripts was used in traditional pen-based marking to manage conflicts of interests and prevent markers from marking their own students' scripts. OSM eliminates the manual processes as the system can be pre-programmed such that markers will not be allocated scripts from their schools.

With the introduction of OSM, rich data about markers is also collected. The marker performance data facilitates marker deployment based on strengths, as well as identifies areas where markers' training can be enhanced. By leveraging data and providing structured training, SEAB has been able to groom stronger markers, hence further raising the quality and efficiency of marking.

Overall, OSM has raised the operational efficiency as well as effectiveness of the marking exercises in the national examinations. More importantly, it allows our teachers to focus on the professional aspects of marking while maintaining its rigour.



Marking of the PSLE Higher Chinese Language Paper 1 at Nan Hua Primary School.

**Q3:**

## What were some of the challenges faced by the team in implementing OSM?

It was a rich learning experience for the team as we overcame the challenges in the logistical set-up and mindset change of markers in this journey:

**a.**

The OSM system must safeguard the integrity and reliability of the marking processes while ensuring that it is easy for markers to use. To identify key features that are useful for marking and team management, we conducted focus group discussions with markers and studied other OSM systems.

As many different subjects were involved, designing a system that meets the requirements of each subject was also a challenge. Hence, we worked with key marking personnel to co-create system features and review marking processes to design a marking system that is marker-centric, intuitive and easy to use. Close school and stakeholder partnership were in place, for example, to test and provide feedback on answer booklet design.

To garner buy-in from the fraternity, we also communicated the changes to marking personnel and familiarised them with the OSM system ahead of the implementation.

Through collaboration, co-creation, and detailed planning, we were able to implement OSM for locally developed subjects within two years.

**b.**

Extensive stakeholder engagement had to be performed before, during and after each marking exercise.

To ensure a smooth and pleasant marking experience, the various inter-divisional working teams had to calibrate, sequence and time the outreach to the markers on the preparations required (e.g. welcome messages, organisation of training sessions). A series of training sessions were also conducted for the markers to ensure that they were equipped with the necessary knowledge and skills to support the new marking process and utilise the OSM system.

Drawing lessons from an encounter with unfavourable scanner operating conditions, the team established new preparation processes for each OSM exercise. Firstly, coordination between the project team and estate management was vital in ensuring that the relative humidity of the script digitisation room and its ambient temperatures were optimised to maximise scanning throughput.

During each marking exercise, it was necessary to promote marker well-being and professional development, in order to grow buy-in for the new processes. Significant efforts were made to provide a conducive marking environment, for example, instituting a minimum number of break times during a working day to safeguard against marker eye fatigue and trialling the use of laptop supports to provide comfort for markers' wrist muscles.

After the conclusion of each exercise, post-marking processes regarding data collection, sorting and analysis for follow-up action were set up. The research team would draw marker performance data for analysis by subject and send the results to the assessment team for enhancement of marker training and deployment. The systems team would extract and compile marker feedback data and send it to the assessment and operations teams for refinements to marker engagement strategies and the conduct of follow-up OSM exercises. These processes have also contributed to markers' professional development as they obtain new insights and learning.

While there were challenges, the results were fruitful. Integrating our efforts has not only created a positive paradigm shift with schools that supports higher marking productivity. It has also formed new habits of mind in SEAB, such as embracing a data-driven culture in moving OSM forward. These outcomes have ensured long-term sustainability of the benefits of OSM.

## Q4:

# How does the team feel about winning the award?



Demonstration of the script scanning processes to educators.



Onscreen marking being conducted at SEAB's premise of 298 Jalan Bukit Ho Swee.



**Ms Bernadette Lim**

Project Lead and Deputy Director, APDD:

I am happy for my teammates who had worked very hard behind the scenes. It is an affirmation from the Public Service Division that the project has made a difference in our service delivery to the citizens of Singapore; in particular, the thousands of teachers who are involved in local national marking annually.



**Ms Sharifah Mufidah**

Lead Assessment Specialist, APDD:

I feel extremely proud of the team members from multiple divisions and departments in SEAB. The OSM journey had been a number of years in the making. The reliability of OSM was ascertained with its successful implementation in 2019 and 2020 when all locally marked GCE-Level subjects and some PSLE subjects transited to OSM. The team continues to partner and collaborate to further improve the system and enhance user experience. Kudos to the team!



**Ms Norzanariah**

Assessment Officer (Malay Language), APDD:

I was a little anxious as I did not know what to expect, but at the same time I was excited to be part of this digital transformation journey. The OSM project team members believed that this project would be able to make the marking process more efficient and provide more convenience to our markers, so we were determined to ensure the success of this project. It definitely did not cross our minds that this OSM project would be nominated for an award, so when I was informed that this project won the SDEA, it was indeed a pleasant surprise. It is really a nice feeling to be recognised for all the effort we put in and I feel very honoured to be a part of this project.



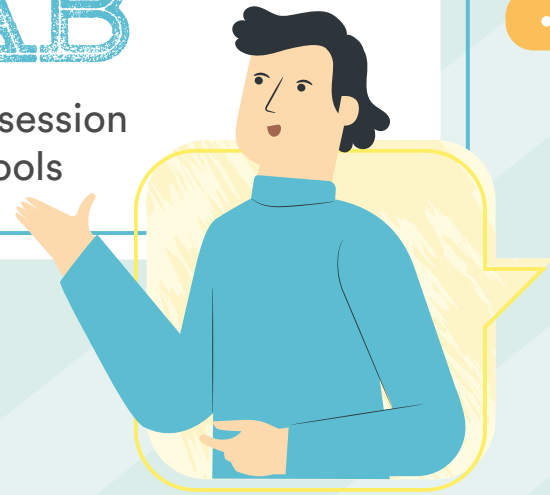
**Mr Oliver Junus**

Senior Assistant Director, EOD:

I am delighted to receive the news and happy that the team can achieve such high accolades. There were lots of hard work put in by some individuals from SEAB and MOE Information Technology Division (ITD) before we could reach this stage. We should also recognise the MOE ITD staff who worked collectively and collaboratively with us on this project.

# Conversations with SEAB

- an outreach and engagement session  
with our stakeholders in schools



SEAB reaches out to the educators in the National Institute of Education (NIE)'s Management and Leadership in Schools (MLS) programme and Teacher Leaders Programme (TLP) biannually. Each 'Conversations with SEAB' session serves as an engagement between SEAB and educators. The key themes of these sessions include national examination policies, processes and professional development in assessment. Educators are also asked for feedback on their involvement in the national examinations to enhance the mutual support between SEAB and examination personnel.

The two-hour programme typically comprises a presentation by the Assessment Planning and Development Division (APDD) on Managing Assessment Standards followed by a conversation session with SEAB management. Due to the ongoing COVID-19 pandemic, all sessions have been held virtually since the second half of 2020. In this article, we put a spotlight on the 2021 sessions and share how we have continued to engage with educators.



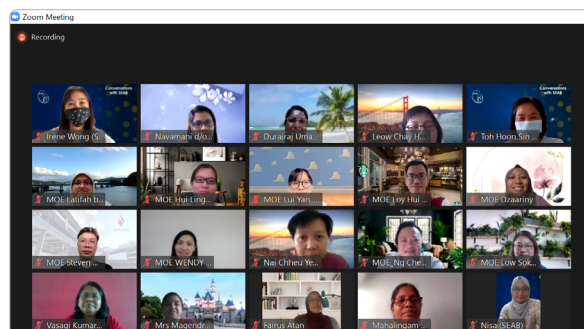
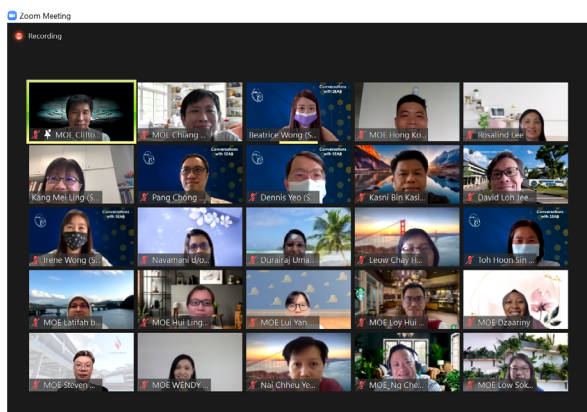
## Conversations with Teacher Leaders Programme (TLP) Participants

On 26 February 2021, a group of 24 senior teachers from primary and secondary schools as well as the junior colleges attended a session with SEAB. The session was hosted by Mrs Cheah Mei Ling, Director, APDD; Mr Pang Chong Han, Director, Exam Operations Division (EOD); and Mdm Toh Hoon Sin, Deputy Director, APDD.

During the interaction segment, Mrs Cheah shared her thoughts on integrating technology into the national examination processes, with initiatives such as e-Examinations and onscreen marking, which have raised marking quality and efficiency whilst maintaining the integrity and security of the national examinations. Our senior management also emphasised that SEAB would continue to leverage technology and enhance our processes to keep up with the changing education landscape and ensure that our students are fairly assessed.

On behalf of the TLP group, the group's coordinator, Mr Lim Hon Shin Clifton, Senior Teacher (Mathematics), Tao Nan School wrote:

“Thank you, Mrs Cheah, Mdm Toh, Mr Pang and all SEAB staff involved in the Conversations, for taking the time to give the TLP participants an overview and useful information on SEAB's work in our education landscape. The detailed explanations and latest developments (e.g. onscreen marking) shared will enable practitioners like us to effectively adapt our practices and prepare our students for their exams.”



Group photos of the 26 February 2021 session with TLP participants on Zoom.

# Conversations with Management and Leadership in Schools (MLS) Programme Participants

We were heartened to see an overwhelming response from the MLS cohort as 68 teachers signed up for the Conversation sessions. To manage bandwidth issues and ensure an effective engagement, we hosted the MLS cohort over two sessions, one on 11 March 2021 and another on 16 March 2021. The participants were mainly Head of Departments, Year Heads and Subject Heads from primary and secondary schools and the junior colleges. The Conversation sessions were hosted by Mr Yue Lip Sin, SEAB Chief Executive, and representatives from APDD, EOD and Corporate Cluster.

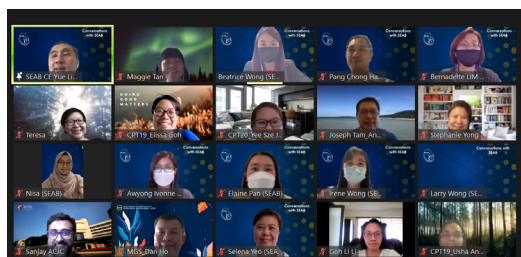
Mr Yue thanked the educators for their contributions in ensuring the smooth and safe conduct of the 2020 national examinations amidst the evolving COVID-19 situation.

With 2021 as the year of the implementation of the new PSLE scoring system, SEAB senior management took the time to provide clarifications and address queries from the educators on this topic. Apart from explaining the rationale behind the mark ranges for the various Achievement Levels, the SEAB panel also shed light on how the new system would be less differentiated than before.

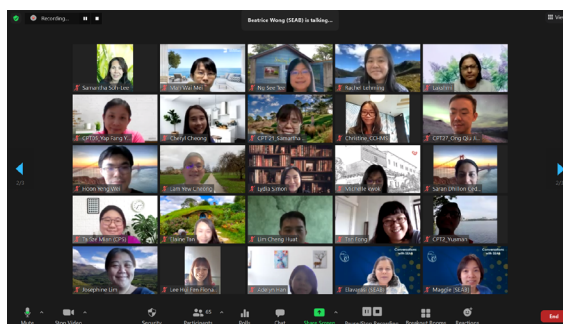
On behalf of the MLS groups, Mrs Sharon Teo, Year Head / English & Mathematics, Greenwood Primary School wrote:

“The conversation session was enriching, especially the part about clarifying the ‘myths’ that we had with regard to national assessment. It is heartening to see the proactive role SEAB is taking to ensure alignment with the national education notion to move away from placing too much emphasis on academic achievements and to focus on going in-depth to assess students on what they really know. I look forward to working closely with SEAB as an educator in school, a marker during the marking exercise and a member of the education system!”

The virtual Conversation sessions were rich in discussion with active participation from the educators. These engagement sessions between educators and SEAB have been valuable platforms for us in seeking feedback for continuous improvements to our national examinations and assessments, whilst enhancing our partnership with the educators at the same time. We look forward to hosting more sessions in the latter half of year 2021 and definitely hope to engage the educators in person again at our new SEAB Building.



Some of the 11 March 2021 attendees.



Some of the 16 March 2021 attendees.



# DATA ARCADE TOURNAMENT 2020



The Data Arcade Tournament (DAT) is the Whole-of-Government's (WOG) annual visual analytics competition that is organised by GovTech's Data Science and Artificial Intelligence (AI) division. This five-month long competition celebrates visual analytics talents from across all government agencies, encouraging officers to upskill their data capabilities and be more data driven in their work. Participants take part in either the Qlik track or Tableau track. These are two different data analytics tools.

SEAB is increasingly making use of data in our work, so the DAT provides a great opportunity for our officers to hone their data skills and experience working with different types of data. It also helps the officers validate their digital competencies at the WOG level. Three teams from SEAB competed in the DAT2020 which was held from July to September 2020. Using Tableau as a visual analytics tool, the teams analysed a variety of datasets and had a go at creating dashboards and building data

stories. Eventually, one of our teams, comprising Lead Assessment Specialist, Ms Ng Siok Leng, Assessment Officer, Ms Joyce Liu and Assessment Specialist, Mr Jeff Teo, was selected as a finalist and went on to participate in a five-hour live hackathon at GovTech headquarters in November 2020.

The SEAB team used datasets from the Ministry of Health and Workforce Singapore as well as global COVID-19 data to address the problem statement "How has COVID-19 impacted Singapore", with a particular focus on the pandemic's impact on jobs. The team made use of the given datasets to gather insights on how the job market and employability in Singapore had changed in the different phases of COVID-19.

During the finals, the team zoomed into the IT industry and presented the findings through a role-play of a fresh IT graduate seeking advice from a Career Ambassador at a job fair. In the role-play, the ambassador used the dashboards to illustrate the competition for jobs in the IT industry and the skillset necessary for a job listing. In addition, the ambassador advised the graduate on the other job roles in the IT industry that matched his skillset.

The team's hard work paid off and they eventually emerged as 1st runners-up for the Tableau track!

We caught up with our winning team to find out more about their experience participating in the tournament.



A photograph of three individuals standing in a modern cafe or office environment. From left to right: a woman in a black cardigan and patterned top, a man in a dark polo shirt and khaki pants, and a woman in a black blazer and grey pants. Each is holding a trophy. The background features a counter with coffee-making equipment and a wall of glass blocks. The image is framed with colorful, abstract shapes on the left and right sides.

**Siok Leng**

**Jeff**

**Joyce**

From left:  
Ms Ng Siok Leng,  
Mr Jeff Teo and  
Ms Joyce Liu,  
with their awards.

## How was the DAT journey like for you?

## What did you gain from the experience?

### Siok Leng

Data analytics has been a part of my core work. When I was asked if I would like to gather a few officers to form a team, I thought, “Why not?”. The team participated in DAT with an intent to gain some experience from working with datasets beyond national examinations. The DAT provided me an opportunity to apply my data analysis and visualisation skills on unfamiliar datasets from other public sectors. It was challenging and yet exciting. It tested my ability to transfer the skill sets that I had acquired from my current work to another domain. We learnt and shared, as a team, deeper knowledge of the other public sectors as well as new features in Tableau to design and create dashboards to make our storytelling more enticing to our target audience.

### Joyce

I was introduced to Tableau in mid-2019 and have since been using it more and more in my work. The DAT gave me a chance to apply and sharpen my existing skills, and pick up new ones. It was great fun learning how to build dashboards with Tableau. We had many ideas on how to display the insights from the data, and we spent time researching good practices in data storytelling and how to make use of the various features in Tableau to get the visualisations that we wanted. In so doing, I gained more familiarity with the software and picked up many creative ways of using it as well.

### Jeff

I entered the competition with little background and experience using Tableau, but the organisers provided the teams with training opportunities to learn about the software. I learnt more about the visualisation tool through the explorations and discussions with my teammates. The DAT gave me the opportunity to get my hands dirty and play around with the functions that Tableau has to offer and build a dashboard from scratch. We also had the chance to work as a team to put our ideas together and craft a storyline to glean insights from a given dataset.

## What were some of the challenges along the way and how did you overcome them?

### Siok Leng

The key challenge was time management. Throughout the tournament, we were mostly working from home and busy with our own work. Hence, we had our discussions via emails and skype meetings. We adopted a divide-and-conquer approach. At every opportunity that we got to meet, we put together our ideas and developed new ideas to improve our products. Each of us has our own strengths and we listened to one another to get a consensus.

### Joyce

The live hackathon was very challenging as we only had a few short hours to understand, derive insights and build a data story from a few largely unseen datasets. We were given a preview of some of the datasets a few days before, but only received the full datasets on the day. We were able to do some homework beforehand to understand the various fields, but most of the work had to be done on the day itself. Time management and teamwork were crucial, and we tapped on one another's strengths to deliver the final data story.

### Jeff

The live hackathon was a unique experience as we were given only 5 hours to produce a story using a dataset and topic that we were not familiar with. We took some time in the exploratory stage to make sense of the data and find connections between the datasets. Through the fruitful discussion and brainstorming with the team, we managed to nail down the key questions and develop a story around them.

## Would you encourage others to participate in this tournament?

## What is one advice you would give to future participants?

### Siok Leng

The DAT journey was an enriching and exciting experience for me. I would encourage officers who have any slight interest in data analytics to give it a try. The organiser provides strong support in terms of training for officers who are new to data analytics. So, do give it a try with an open mind. You may never know how far you can go until you try. For our team, we did not expect to emerge as one of the top three teams for the Tableau track at the beginning of the tournament. At the end of the DAT journey, we celebrated our achievement with rewarding experiences.

### Joyce

This competition is open to all public officers, so I would definitely encourage anyone to participate, especially officers who need to work with data regularly. It is really a learning opportunity, and you certainly do not need to be an expert at Tableau in order to participate. The experience itself is eye-opening and professionally enriching. One advice I would give to future participants is to try to step out of your comfort zone and create something that you have not done before. For example, try to explore new types of visualisations or incorporate a new dashboard element into your data story. Part of the excitement is figuring out how to do something new that will help to enhance the effectiveness of the storytelling.

### Jeff

Although this competition was above and beyond our daily work, it was an interesting experience, and I will encourage colleagues to participate in it. A common misconception was that visualisation requires complicated and complex diagrams, but what is more important is to have visuals that can help to bring across the point.



# ASSESSMENT IN SINGAPORE:

## VOLUME 4 - GETTING READY FOR THE 2020S

SEAB's commitment to share its assessment practices to raise the assessment literacy competency among the education fraternity is evidenced by the publication of the *Assessment in Singapore* series.

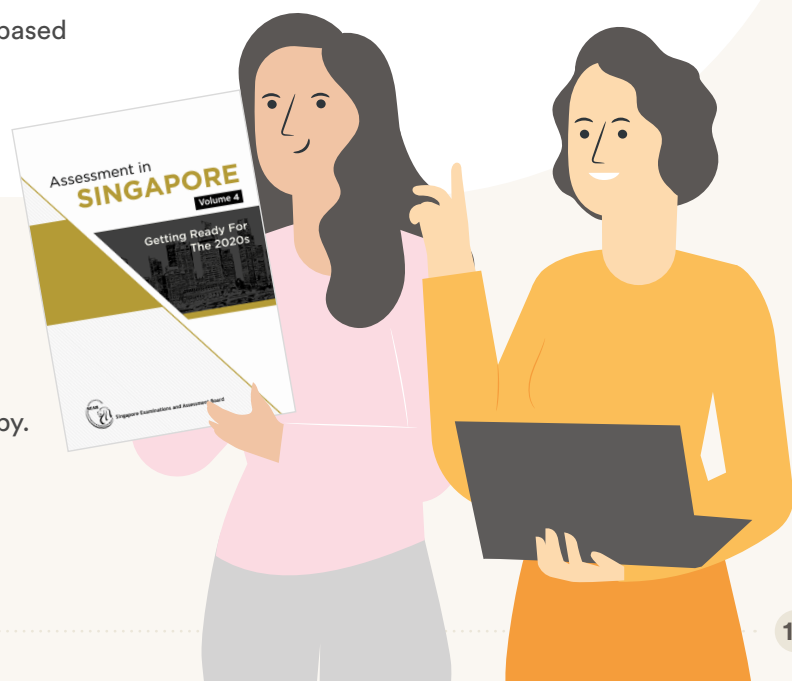
The latest publication, titled *Assessment in Singapore: Volume 4 – Getting Ready for the 2020s*, was launched in October 2020. It encapsulates assessment concepts and methods developed by SEAB.

The first chapter explicates the fundamentals of an assessment system – the definition of standards-referenced assessment and what it constitutes. It is followed by a series of chapters on the assessment concept of the C<sup>3</sup>R framework that can be useful for educators to hold professional conversations on item demand for various subjects and some generic assessment topics. The remaining chapters will keep the reader informed of SEAB's latest initiatives involving the use of technology in assessment. The full list of the titles is provided below.

- 1 Standards-Referenced Assessment
- 2 Elements of a Standards-Referenced Assessment
- 3 Understanding Examination and Item Demand
- 4 Using the C<sup>3</sup>R Framework to Judge the Demand of English Language and Mother Tongue Language Reading Comprehension Items
- 5 Judging the Demand of Inferential Questions: Integrating an Appreciation of Inferential Comprehension with the C<sup>3</sup>R Framework
- 6 Characterising the Demands of Mathematics Items
- 7 Judging Cognitive Demand Using the C<sup>3</sup>R Framework in Science Subjects
- 8 Judging Cognitive Demand of Humanities Items Using C<sup>3</sup>R Framework
- 9 Implementing Standards-Referenced School-based Preliminary Examinations
- 10 Myths about National Examinations
- 11 Mathematical Errors of Low Progress Students at Primary Six
- 12 How to Evaluate Contextualised Questions in Mathematics
- 13 Assessment of Spoken Interaction Skills through eOral Tests
- 14 Assessment of Skills
- 15 Marking Essays
- 16 Onscreen Marking: The Transformative Journey of a Piece of Paper
- 17 The Marking Quality Assurance of Onscreen Marking (OSM)
- 18 OSM Research Findings at SEAB

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