



Australian Government



TASS Technical Assistance for
Education System Strengthening

TASS News

Strengthening Indonesian Education, Together



Foto INOVASI

3rd Edition

The President's
vision for
vocational
education

2

Challenges in
technology
education and
digital learning

3

Study visit to
Australia sparks
ideas for better
online learning

5

Millennial learners

7

TASS-INOVASI
participation
in International
Islamic Education
Conference

8

Profile
Totok Suprayitno

13

TASS NOTES

Digitalization and rapid changes stand out in this era of industrial revolution 4.0. They warrant all sectors, including education, to adapt, transform, and adjust. It is an era marked by digital economy, artificial intelligence, big data, robotics, and so on, known as the phenomenon of disruptive innovation which will create new markets and redefine old patterns.

Noting this new challenge, teaching at all levels will have to be prepared to adapt to the change. We need to be prompt to change our teaching approaches in terms of providing qualified teachers and lecturers for the millennial generation and future.

Teacher capacity building and changes in teaching practice are critical because

they are the most important actor in a child's education and will encourage the development of strong digital abilities for students. Special teachers are needed to assist students and to accelerate development of their skills in using online and digital technology in the classrooms. These skills are essential for students in both learning the core subjects and information technology.

Creativity and flexibility in learning are needed. This includes reorienting the curriculum to prepare graduates for responding to the challenges of the industrial revolution 4.0. I hope this edition of TASS News provides an overview of TASS support and inspiration for you.

Joanne Dowling

TASS Facility Director

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TASS Facility Director



Foto TASS

About TASS

TASS is a responsive, demand driven technical assistance facility funded by the Australian Government. Working with the Indonesian Ministry of Education and Culture and the Ministry of Religious Affairs, TASS seeks to strengthen key areas of Indonesia's education system. It does

this by supporting decision-makers to make changes to policy and plans, budgets and financing, and systems and practice, to improve the quality of teaching and reduce the impact of disparities on learning outcomes. The program began in January 2017, and will continue until July 2020.

The President's vision for vocational education in industry 4.0

Improving human resources through education is a key part of the President's vision. But the question remains: how can the world of education fulfil this vision while adapting to industry 4.0 challenges?



Foto INOVASI

Vocational education needs to change to provide students with the skills for 'now'. Digital, automation and robotics processes are being applied within courses for many industries. However, a number of obstacles are still visible. Among them are quality challenge and the competency gap of graduates with labor market demands and industry needs.

Another challenge is the low ability among Indonesian students in applying learning in real life situations, in problem-solving, and in reasoning as indicated by the result of the Programme for International Student Assessment (PISA). These areas require Indonesia's attention if the country is to have a productive and globally competitive human capital.

The 2018 national labor force survey (Sakernas) shows that only 30% of upper secondary graduates (SMA) who continue to tertiary education, which means that even non-vocational high schools need to start considering equipping their students with employable skills. Further, UNICEF data reveals that the competencies required by industries are not only technical

ones, but interpersonal also.

There are significant changes to be made and improving the quality of both students and teachers is a priority. To that end, teachers and principals need to change their mindsets to embrace the digital era.

Tri Maulana, Activity Manager from the TASS program, recently explained that the involvement of the business and industrial world remains a key requirement to ensure all graduates have the skills needed by employers .. Admittedly, there is a long way to go to reach that stage.

"Schools and industries must be prepared to collaborate. This has long been intended and has begun to be operationalised, though so far, industrial cooperation and vocational education is still normative, sporadic, unplanned and not based on needs, so they have not been beneficial for both parties. The Regional Education Office and the Education Office must play a role in improving this matter," Mr Maulana said.

PISA results show that upper secondary graduates lack fundamental and 21st century skills. One contributing

factor may be the rapid growth of private vocational schools that is not accompanied by strategies for ensuring quality teaching and learning processes. At the same time, businesses and industries have not been quick enough in partnering with schools, as while teachers' competencies are insufficient or not up to par with industry trends, industry partners are most aware of their needs.

To ensure that all graduates, regardless of their vocational and non-vocational track, can get the skills they need to be employed, Mr Maulana thinks it is time that we move away from the rigid distinction between SMA and vocational schools (SMK).

Vocational training, apprenticeship, and other skills required for employment, for example, can be provided in both SMA and SMK. SMA may also provide low-cost skills training, e.g. business course or allow students to join courses/ training programs in different schools.

Another solution to consider is resource-sharing between SMA and SMK, provide greater flexibility for students throughout their three years of

schooling at the upper secondary level, and facilitate students in enriching their skills.

The most fundamental changes needed relate to teacher competency improvement, curriculum adjustments with reference to the Indonesian National Work Competency Standards (SKKNI), fulfillment of graduate competency standards and

improvement of the ability of vocational education institutions to match labor market needs.

Adapting curriculum for vocational education needs

It is crucial that the curriculum is adaptive to vocational needs, encouraging life skills, critical and innovative thinking skills, interpersonal skills, and good literacy and numeracy

skills as well as ICT skills, which UNICEF have identified as the key industry 4.0 skills

Graduates also need soft skills, such as communications, conflict resolution, decision-making, negotiation, leadership, financial, and entrepreneurship skills as well as the agility to change and adapt.



Challenges in technology education and digital learning

There are many ways to develop the abilities of students and teachers, and digital learning is certainly one of them. The Ministry of Education and Culture's online learning platform, 'Rumah Belajar', is a example of how Indonesia is seeking to improve online learning for students and teachers across the country.

Rumah Belajar (learning.kemdikbud.go.id) is equipped with learning material and resources that can be used by teachers and students across all school levels – from early childhood education (PAUD), to primary school, right through to high school and vocational school. It is intended by the ministry as a source of knowledge and capacity development for students and teachers.

Head of the Center for Information

and Communication Technology Education and Culture (Pustekkom Kemendikbud), Gogot Suhawoto, said there are currently a number of areas for improvement when it comes to strengthening the online platform. One of these includes the need for learning content in ICT, and more teaching media and online tools. In addition, teachers lack key ICT skills for utilising the services and teaching of ICT content.

"Content and competency gaps still occur. In addition, the gap can also be seen in the diversity of technologies used by students and teachers and the gap in the availability of a medium for sharing learning resources between teachers from various regions," explained Gogot.

The Rumah Belajar site offers some solutions to reducing these digital gaps and providing key resources to

Indonesian educators and learners. The platform is a learning portal that provides learning materials and communication facilities as well as two way feedback between communities.

“Rumah Belajar can be accessed both online and offline using a PC, Laptop or Smartphone. Teachers and students can easily access all content contained here.”

The platform makes it easier to learn. Teachers can study anywhere, and anytime. Rumah Belajar contains various learning material menu choices that are easily accessible.

Some content can be accessed in the main feature menu, namely learning resources, electronic school books, question banks, virtual laboratories, cultural maps, spacecraft, continuing professional development, and virtual classes. In the latest content feature menu, there is a variety of the latest learning materials. The design is made to be highly interactive, and even contains learning materials developed by teachers and the public as well as a section dedicated for literature writing and reviews.

Rumah Belajar supports acquisition of 21st century and higher order thinking skills.

After accessing content in the Rumah Belajar, students and teachers can then discuss the materials directly in the classroom. Teachers can use the resources to motivate students and inspire further learning.

Teachers can motivate students to summarise key points on certain topics, in the form of concept maps, leaflets, or brochures. Interestingly, during this activity the teacher can always provide additional information to supplement students’ opinions on a topic being studied by asking questions so that students can be critical and build cooperation.

Learning from the Australian experience

Digital-based learning is a model of future learning and has been applied in many countries. Australia for example has run a digital-based learning model. Education Services Australia (ESA) develops, shares and disseminates education infrastructure and resources that are owned nationally. ESA has

developed and maintains Scootle (<https://www.scootle.edu.au/ec/p/home>) which is a product and service for all Australian educators and students.

In addition to Scootle, several Australian states also develop online learning platforms and hubs. For example, the state of New South Wales has an online learning media called OTEN (<https://oten.tafensw.edu.au/>) that supports the delivery of online vocational education courses. Australia is a key digital learning reference for Pustekkom and MoEC.

As part of efforts to strengthen digital-based learning, representatives from MoEC and also the Ministry of Religious Affairs recently visited Australia to learn more about digital based learning. The aim of the visit was to explore digital approaches that could improve the quality of education in Indonesia, and together learn about digital-based quality teaching support in the Australian education system.

The study visit also provided ideas for the sharing and hosting of teacher resources online. With improved digital resources, teachers can enhance their teaching abilities in the classroom.



Study visit to Australia sparks ideas for better online learning



Representatives from the Indonesian Ministry of Education and Culture's (MoEC) ICT centre Pustekkom and the Ministry of Religious Affairs (MoRA) travelled to Australia as part of a Study Visit to share common education problems and solutions.

The visit, facilitated by the Australian Embassy in Jakarta through the TASS program, saw delegates travel to Sydney, Canberra and Melbourne,

meeting with a range of partner institutions. These included the Australian Curriculum, Assessment and Reporting Authority, the federal Department of Education, state education departments in New South Wales and Victoria, Education Services Australia, the Australian Institute for Teaching and School Leadership, the Asian Education Foundation, BRIDGE school Heathmont College and the

Sydney Distance Education Primary School.

The delegation, led by Pustekkom's Director Gogot Suharwoto, had the opportunity to discuss key areas such as national curriculum design and implementation, education standards, digital and ICT curriculum, and digital technology and online resources for student learning and teacher professional development.

The visit focused in particular on interactive online resources that are available in Australia and their effective use in improving teaching and learning process in general, as well as enhancing teachers' and students' ICT skills. In Australia, the Education Services Australia plays a similar role to Pustekkom of managing online learning resources and digital technology.

The visit highlighted several key takeaways, among others: quality

assurance of learning content; standards and principles in designing and implementing digital services; e-learning and online portals; partnership with the private sector to develop digital content (e.g. apps and games); and cybersecurity.

The delegates also learned about the governance relationship between Australia's federal government and state governments, and how their collaboration results in a strong focus

on learning outcomes for students in Australia.

Moving forward, this visit is expected to contribute to MoEC's plan to expand digital technology in the classrooms, especially for teachers' development and improvement of learning outcomes.



Millennial learners

When it comes to improving education, progress in learning and technology are two sides of the same coin. The Ministry of Education and Culture (MoEC) discussed the the two topics in an illuminating way at National Education Day.



The seminar, which attracted an audience of education experts, government officials and the general public, provided a public platform to discuss strategic education issues that are expected to be included in the 2020 – 2024 national strategic plan and Ministry strategic plan. One seminar panel theme that attracted much attention was that of millennial students.

In the panel talk show, a number of qualified speakers offered their ideas and expert opinions. Among them was Jenny Lewis, an Australia education consultant with the TASS program. In her presentation, Ms Lewis discussed the idea of ‘Teaching for Tomorrow’s Classroom Today’, exploring the 21st century education model and the global vision of 2030 learning issued by the OECD. She presented that education should be the means and tools for students to adapt to future working conditions.

“Education is a tool for students to develop a reliable compass and navigation tools to find their own way

through our increasingly complex, uncertain, ambiguous and turbulent world. Vision 2030 is a framework for countries to refer to when compiling, reviewing or revising the curriculum,” she said.

Ms Lewis, who is also the CEO of the Commonwealth Council for Educational Administration and Management, added that this learning framework can be a reference when designing or revising the curriculum. It also provides space for in-depth learning and develops assessment strategies to see the extent of students’ knowledge and what they need to learn next.

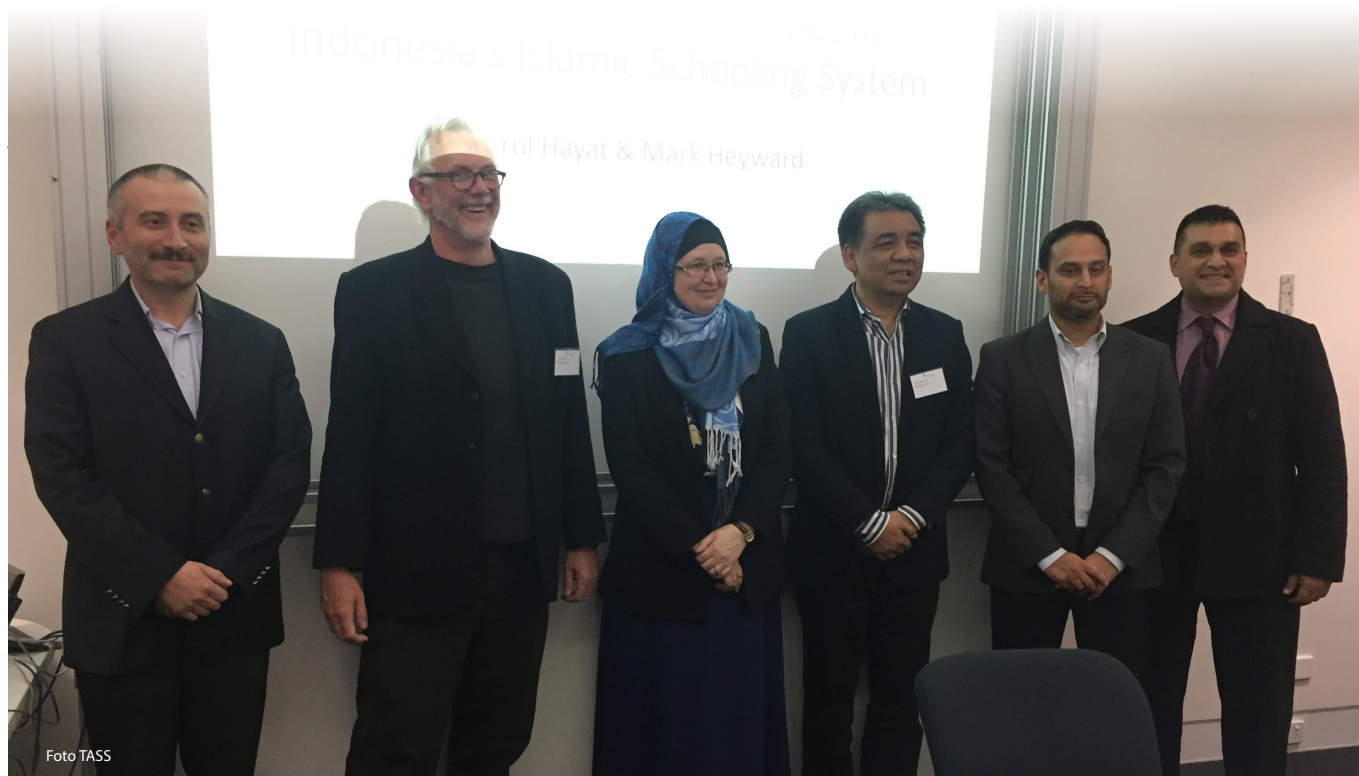
The global 2030 vision for learning starts from the basics by developing basic literacy including numeracy, digital literacy (information and communication technology), data literacy, and physical or health literacy. In addition, it teaches creative thought processes, responsibilities, and conflict resolution.

“Global power is synonymous with automation, globalization, and collaboration. This trend will change the

world of work, demanding job seekers to have skills in creativity, digital literacy, and entrepreneurship. We need to question whether our education system provides these skills for the future workforce and if not, what needs to be changed is to make sure they do it?” said Ms Lewis.

Ms Lewis was joined on the panel by the Director of the Center for Information and Communication Technology (Pustekkom) Dr. Gogot Suharwoto, Head of the Ministry of Education and Culture’s Education Assessment Center Moch. Abduh, and a Professor of Mathematics at FMIPA ITB Iwan Pranoto.

Activities in the Education and Culture Week included a book donation drive, book bazaar, career fair, a public discussion event moderated by Najwa Shihab and the Education Fair Team, music concert, an educational exhibition curated by Directorate of History and an educational photo exhibition.



TASS-INOVASI participation in International Islamic Education Conference

INOVASI's Program Director Dr. Mark Heyward, along with Dr. Bahrul Hayat, Education Specialist for the TASS program in Indonesia, and Education Pathways for Peace (Pathways) program in the Philippines, participated in the 4th Islamic Schooling Conferences and Forum AAISC 2019, held in Melbourne, Australia. The pair provided an overview of the Islamic schooling system, its challenges and opportunities.

Mark and Bahrul, tell us more about how INOVASI and TASS are working to strengthen Islamic schooling in Indonesia? How did the two programs collaborate to determine best approaches and lessons learned?

TASS and INOVASI have been working with the Indonesian Ministry of Religious Affairs over the last two years to help design and implement a new approach to continuing professional development for madrasah teachers.

The Islamic education sector in Indonesia is massive. In Indonesia, madrasah are essentially faith-based

schools, which teach the regular national curriculum alongside Islamic studies. Over 10 million students are enrolled in 78,000 madrasah across the country.

In the last five years, madrasah numbers have grown by almost 10%. In the same period, number of students in madrasah has grown by 15%. While TASS is working with the Ministry of Religious Affairs at the national level on the system design and related policies and regulations, INOVASI is working at sub-national level, helping to pilot the new approach to teacher in-service training.

Teachers get together for routine sessions in cluster-based working groups to learn how to improve their teaching. Our aim is to improve learning outcomes for children in primary schools – especially in literacy and numeracy, which are the basis for all education that follows. We are also piloting new approaches to inclusion for children with disabilities and to multigrade classes in small madrasah.

We also partnering with and supporting Indonesia's two mass Islamic organizations; NU and Muhammadiyah. These organizations oversee huge numbers of madrasah and faith-based schools, and are very influential

politically. Both organizations are adopting the new approaches and piloting them with their own teachers; at the same time, MoRA is increasingly engaging with such organisations for the long-term sustainability of the teacher development program.

Bahrul, how is this approach being applied to the Pathways program?

The newly autonomous Bangsamoro government is looking within the region (Indonesia, Malaysia) and further afield (Pakistan, Bangladesh) for models they might draw from in designing a new education system that brings both schools and madaris (or madrasah/ Islamic school) into the one system. Education leaders in Bangsamoro see a lot of positives in Indonesia's education

system in that it recognises Islamic education as being equivalent to secular education; that madrasah and schools teach the same core curriculum; and in the tolerant and moderate approach to the teaching of Islamic subjects and respect for pluralism and diversity that Indonesia's madrasah and Islamic universities promote.

Recently the Bangsamoro government sent a delegation to Indonesia to learn more about Indonesia's system and returned motivated to progress their reforms. From the Indonesian government's side, they are keen to help the Bangsamoro promote tolerance and moderate Islam through the education system. Indonesia

sees this as a key way they can contribute to regional peace and security.

Like INOVASI, Pathways focuses on early years learning, in particular kindergarten to grade three level to attain basic literacy and influence attitudes towards peace.

Through Responsive Innovation Fund (RIF), Pathways provides opportunities for stakeholders to support the delivery of quality education services as well as contribute to peacebuilding in the Bangsamoro Autonomous Region. The RIF aims to stimulate and learn from creative and innovative locally developed solutions to existing local issues and challenges.

At the systems level, like TASS, Pathways is assisting the newly established Bangsamoro Government to develop the education code, long-term strategic plans, and model madrasah.

In your opinion, what are the challenges and opportunities for Indonesia's Islamic education system?

Learning outcomes tend to be lower for children in madrasah than for those in regular schools. There are several



reasons for this. Most madrasah are private (over 90%) while most regular schools are state schools (around 90%).

This means that madrasah receive fewer resources from the government. They rely largely on fees from parents, and their budgets are low; most madrasah teachers are private (not civil servants) and their preservice training is less effective than that for regular teachers. Many were trained in Islamic studies rather than in pedagogy and education. The madrasah tend to serve the poorer sections of the community. These are big challenges.

The opportunities lie in the openness of officials, administrators and teachers to learn and to try new approaches. There is great enthusiasm and willingness to learn, to innovate, to improve. Most madrasah have strong social capital, too: their communities can be another support for change and improvement. The missing element has been opportunities for quality improvement, which are now being provided by the Ministry with support from INVOASI and TASS.

What can other countries, and other donor programs, learn from the experience of INOVASI and TASS?

Plenty! First, Indonesia can offer the world a great model of tolerant, moderate Islam. And secondly, in that context, Indonesia has a unique model of Islamic education which is integrated into mainstream education.

We are already sharing our experience in the newly-created Bangsamoro Autonomous Region in Muslim Mindanao, in the southern Philippines. We are collaborating with the Pathways program to take Indonesian experience to the Philippines, so that the leaders of Bangsamoro can learn from Indonesia as they create a new Islamic education system.

Through our work with the Ministry of Religious Affairs in Indonesia, we found that teachers learn best in cluster-based working groups. We also learned that teachers can innovate and solve learning-related challenges – given the license to do so.

This means working with government at local and national level, to make sure that schooling is not over-regulated and that teachers are given the professional independence to find their own solutions to improving quality.

We have also learned that the non-government sector can be a key player. Working with the large Islamic

organizations is a great way to improve learning outcomes for madrasah students.

What was the value of participating in the AAISC conference this year?

As a professional, it is always great to meet and exchange ideas with other professionals, in this case academics, administrators and practitioners from Islamic schools in Australia.

The feedback we received in our session suggests that Australians are largely unaware of the size and strength of Islamic education in Indonesia. They are largely unaware of the importance to the world of Indonesia's tolerant and open form of Islam – and of the role that education can play in cultivating this.

They were unaware of the Australian Government's long-standing partnership with Indonesia and its Islamic education system. Our participation in this conference was valuable in that it opened the eyes of conference delegates, most of whom are of Middle Eastern decent, to this reality. It is only a start. There is so much more to be done!

Delegation from Mindanao Bangsamoro region learn from Indonesia's Islamic education sector

Indonesia is seen by global actors to be actively encouraging and promoting a tolerant and moderate Islamic approach to education. For countries or regions wishing to implement an Islamic education system, Indonesia offers many lessons and ideas. One such group is the Bangsamoro Autonomous Region in Muslim Mindanao, Philippines, who in recent months sent a government delegation to Jakarta to learn more and share good practice.

Bangsamoro finds itself in a unique and challenging position, tasked with building a new Islamic education system from the ground up. During their recent study visit, a key was to open up opportunities for ongoing cooperation with Indonesia, learning from Indonesian partners and directorates within the Ministry of

Religious Affairs (MoRA). By the end of the week, agreement was made to continue exchanging knowledge and resources in the form of student exchanges, scholarships and research development.

The study visit was successful in strengthening Indonesia's role as a leader in South-South cooperation

and Islamic education, helping to build solidarity, equality and mutual understanding with a neighboring South East Asian country.

The Bangsamoro delegation visit was supported by the Australian government through the Education Pathways to Peace program (Pathways) in the Philippines and



facilitated by the TASS program - which has been assisting MoRA to strengthen the quality of Islamic education. During the week, the Bangsamoro delegation also had the opportunity to delve into the social and economic aspects of education sector planning and budgeting.

Secretary General of the Ministry of Religion M Nur Kholis Setiawan, when receiving the Bangsamoro delegation, explained that Islamic Schools (madrasah) and boarding schools act as important education providers in Indonesia. Islamic education institutions in Indonesia play a role as a centre for

character education, and places for moderate religious education.

A representative from the Bangsamoro delegation, Ahmed Abdullah, said that the delegation was interested in studying the Islamic education system in Indonesia and exploring cooperation

“Our goal in Indonesia is to understand the madrasah education system, specifically learning about regulations and funding mechanisms for Islamic education in Indonesia.”

“In addition to universities, we want to explore madrasah and pilot education to improve education in the Philippines. During this visit we learned a lot about Indonesia.”

This ongoing collaboration is a great opportunity for sharing information, experience and knowledge between the two countries, with the end aim of improving education quality in Islamic schools. The Bangsamoro delegation expressed its gratitude for the visit, and invited the Indonesian government to make a similar visit to the Bangsamoro region of the Philippines.

“Indonesia is developing religious moderation through education. In addition to teaching Fiqh, Quran Hadith, Aqeedah Morals, Islamic Cultural History, Arabic Language and also reinforcement of character in madrasahs are also taught character education. Religious moderation encourages the strengthening of tolerance and respect for diversity.”

opportunities – particularly as their own Islamic Education system is only just in the early development phase. During this visit, the Bangsamoro delegation also signed a plan of cooperation with Syarif Hidayatullah State Islamic University Jakarta. The cooperation plan includes a blueprint for developing



Creating equality through quality education

An inclusive education system is one that values diversity, is non-discriminatory, and provides learning for all. These principles are clearly outlined in the Law on Disabilities (No 8 / 2016), which states that persons with disabilities are entitled to access a quality and inclusive education. A truly inclusive education should be tailored to the needs of children with disabilities.

About 900 thousand students with disabilities who attend inclusive schools are recorded in Indonesia's Ministry of Education and Culture (MoEC) Basic Education Data system (DAPODIK). But, only around 25 percent of the total number of children with disabilities are captured. The rest of the children continue to sit outside the system for a variety of reasons. One of these reasons is the lack of information on schools that offer inclusive education services, making it difficult for parents to select the right fit for their child. Schools are asked to fill the gap, so that children with disabilities can access quality education at all levels.

Data collection is key if all children with disabilities are to be included and accounted for in the system. In that

context, MoEC through the Directorate of Teachers and Education Personnel of Special Secondary Education and the Directorate of Special Education Development, has been seeking to encourage the data collection of children with disabilities. This data collection involves school teachers at all levels of education using the newly developed Student Learning Profile or Profil Siswa Belajar (PBS) instrument.

This instrument is the result of a collaboration between MoEC and the Australian Government, working through TASS and Innovation for Indonesia's School Children (INOVASI) programs. The PBS instrument is designed to help teachers better capture and understand the different difficulties and needs of individual students.

The instrument will also be developed in an application format, linked to the basic education data system (DAPODIK) at the district and national levels. The process will involve three main parties: schools, provincial and district / city offices. The results of the data collection will then be used to analyze the accessibility needs or tools for students with disabilities in schools which also struggle to provide adequate support for special needs teachers.

Data collection is also intended to record and analyze children's needs based on their disabilities and support requirements. For example, disabilities in vision, hearing, speaking, fine motor and gross motor skills, and other more specific disabilities in learning.



Foto INOVASI

Data collection using the PBS instrument

Teachers who will conduct the data collection using the PBS instrument are called 'assessor teachers' and are nominated by the school principal with the local district education office. An administrative point of contact at the district education office enters the name of the teacher, submitting them to the Ministry's Management Information System for Continuing Professional Development (SIMPKB).

The assessor teacher appointed by the principal then undertakes the data collection using the PBS tool. The results are recorded in a database and analyzed by the district education office. Evaluation reports for all schools are captured along with the data of children with disabilities or special needs in respective school databases.

The PBS instrument has nine main components that must be filled in by the assessor teacher. These components require the assessor to identify the range of student disabilities, special tools needed, movement within the school (accessibility), and learning and support. It also captures data to inform the required number of teachers to provide special education services in schools and the adjustment of the learning process for students with disabilities.

In addition to these points, the PBS instrument is used to record student health information by completing a medical history. Other factors captured include general information about the family environment.

Next steps for including children in schools

The results of the inclusive mapping will be shared with local governments as

well as the origin schools and potential destination schools. This will help the local education office to register schools and students with disabilities who want to continue their education to a higher level.

In order for more students with disabilities to be included in the education system, the local government needs to create an inclusive enrolment committee consisting of teachers, principals from origin schools and potential destination schools.

At the end of the day, all children in Indonesia are entitled to a fair and equal education service. Data collection must be carefully carried out and the registration process for students with disabilities must be done more effectively so that they can continue pursuing their education.

Profile: Totok Suprayitno, Head of Research and Development (Balitbang), Ministry of Education and Culture (MoEC)

Strengthening collaboration in education

President Joko Widodo declared human development a key priority for his second administration period (2020 – 2024). Indonesia's demographic bonus in 2030 makes urgent the need to prepare human resources who are ready to face industry 4.0 challenges.

This is a time of major transformation in all sectors. Industry 4.0 has changed mindsets and business processes, and demands us all to adapt. Head of the Research and Development Agency of the Ministry of Education and Culture (MoEC), Totok Suprayitno believes that everyone in the education system must be aware and understand that we are entering a new era of knowledge and ways of working.

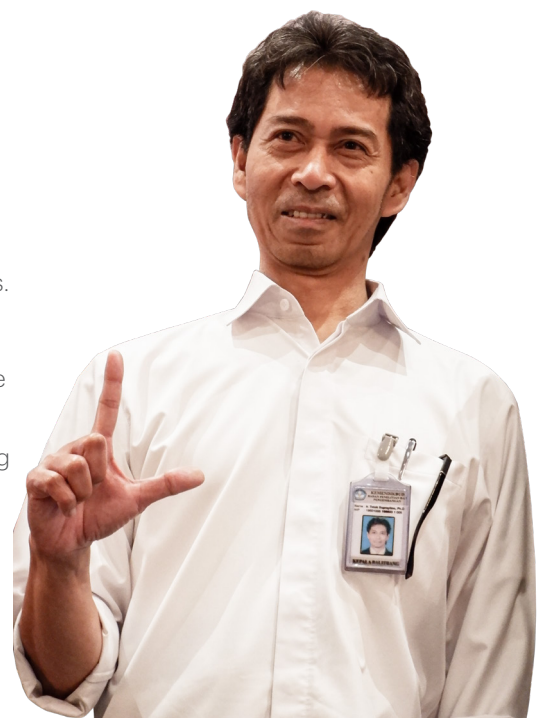
Totok sees the need for all laws and regulations on education to explicitly state the vision of educating the nation, nurturing the next generations of smart and virtuous individuals.

According to Totok, however, there are many misperceptions in education implementation, meaning that core problems are often not addressed, and policy implementation is not

effective. "Policies should not be seen as something that restricts; rather, they must be translated creatively for effective use and guidance."

To Totok, government must continue to strengthen the quality of education. He encourages strategic steps to be taken to meet current and future needs. All elements in education including teachers and students, must be prepared to step up and respond to the latest needs and challenges.

"The essential focus must be improving student learning outcomes as the main goal in education. What needs to be done is to focus on what is happening in the classroom and put student learning outcomes at the centre of developing education."



One of Totok's greatest concerns is how the ministry can prepare the education system and curriculum to align with the needs of Industry 4.0. He believes that this requires ongoing review, to see the extent to which the curriculum is meeting core needs for the future.

"This is our big agenda. Is our curriculum in line with the demands of the times? Are the education standards, which were set 14 years ago, and through some revision, still relevant with current conditions, let alone future scenarios? This includes the accreditation of schools. Various studies show that what we have done so far is not always oriented towards student learning outcomes. We have built a lot and are busy doing a lot of work, but we haven't been addressing the core problems. Reflection is important to see how policy in the education sector can be in harmony with the current developments."

However, for Totok, adaptation is not always equal to having new things in place. Smart practices may already exist and can be continued, and they can be identified through in-depth policy review.

"What we now know may no longer be valid for our children. Therefore, it is important to reflect. We need to reorganize our strategies, but they may not be necessarily new ones. There could be existing knowledge that we can revisit, revitalize."

Education is a shared responsibility

There are basic skills that must be strengthened for students to be



prepared for the Industry 4.0 era. They include literacy, numeracy, information and communication technology skills as well as digital literacy. Communication, creativity, critical thinking, and team work including coordination, conflict resolution, decision-making and negotiation are also key skills that young people will need to be able to adapt to this era. Underlying all of these is collaboration. TASS has worked with GoI to inform strategic policy approaches that will help to strengthen Indonesia's education sector at a systems level.

Moving forward, Totok hopes that collaboration will not only be between students, teachers, or schools. Policy makers also need to build strong collaboration with a range of partners for sound, evidence-based policy

formulation, including development partners in the education sector and internally within the Ministry. Bringing in and disseminating evidence in an engaging way to show strategic issues is important to this effort.

"For the scale of Indonesia, where there are more than 50 million students spread across 17,000 islands, we cannot work on issues one by one, because we'll never get through them all before we all retire."

As Totok explains, taking the education sector forward is a shared commitment based on more than talent or interest, requiring also commitment and inspiration. All parties must have a commitment to improve the quality of education within their area of focus.

Formal Education

Statistics, Institut Pertanian Bogor (S1)

Policy Economics, University of Illinois St. Urbana-Champaign, USA (S2)

Economics, University of Illinois St. Urbana-Champaign, USA (S3)

Career

Education and Cultural Affairs Attaché in Washington DC (2009 – 2010)

Director of High School Development,
Ministry of Education and Culture (2011 – 2012)

Head of the Human Resource Bureau,
Ministry of Education and Culture (2012 – 2015)

Head of Research and Development Agency,
Ministry of Education and Culture (2015 - present)





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