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# WALS

KUALA LUMPUR 2022

World Association of Lesson Studies

# INTERNATIONAL CONFERENCE 2022

*“Creating Lesson Study  
in Sustaining Community  
and Providing Quality Education”*

20-22

SEPTEMBER  
2022

Dewan Canselor Tun Abdul Razak (DECTAR)  
Universiti Kebangsaan Malaysia (UKM)

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# INTRODUCTION

The WALs Conference is an annual conference organized by The World Association of Lesson Studies (WALS) which aims to empower research and teaching practice and provide a space for teachers to collaborate and improve teacher professionalism or better known as Professional Learning Community (PLC). PLC is a platform for teachers to work together in improving teaching professionalism through various collaborative tools. However, WALs makes Lesson Study a basis for educators to collaborate not only at the school level but also in a wider network.

Lesson Study provides space and opportunities for teachers to collaborate in producing research in the teaching and learning process (research lesson), which will be improved through the views of the observers during open class and reflection, subsequently enabling to generate meaningful learning for the targeted students.

The WALs has agreed to choose Malaysia as the host in organizing the WALs Conference at the international level in 2022 and the National University of Malaysia, especially the Faculty of Education, will co-organize this conference. Therefore, this conference requires strategic collaboration with the Malaysian Ministry of Education, the Ministry of Higher Education and other institutions to make the international conference The World Association on

Lesson Studies Conference 2022 (WALS 2022) a success.

The purpose of this conference is to provide a strategic networking opportunity between the Faculty of Education, UKM and the Lesson Study Association at an international level (World Association of Lesson Study), which is directly involved in Lesson Study. Domestic networks can also be developed with public and private higher education institutions, including institutions under the Malaysian Ministry of Education.

Special cooperation is carried out with the Malaysian Ministry of Education, namely the Aminudin Baki Institute, the Teacher Education Institute, the Teacher Professionalism Division, the Matriculation Division and the Network Day School Management Division also involving the MARA Educational Institution, the Selangor Department of Islamic Religion (JAIS), Malaysian Teachers' Unions, private schools and other interested institutions.

In addition, through this conference, it is able to gather experts and conference participants from all over the world to share knowledge and views to improve the collaborative culture of educators and help produce meaningful learning in facing the latest educational challenges from pre-school to higher education. In addition, this conference provides an opportunity for participants to experience directly at observing and reflecting upon a "Lesson Study" or "Learning Study" conducted through an "Open Class" session that will be held on the third day of the conference in several selected schools.

# WELCOMING SPEECH

*President of WALS*

**Professor Dr.  
Catherine C. Lewis**

I look forward to exploring many sessions together, under the theme “Creating Lesson Study in Sustaining Community and Providing Quality Education.” Thanks to the hard work of the Malaysian Organizing Committee, we have the opportunity to attend five keynotes and many additional panels, posters and symposia by 189 presenters, from 26 countries! We can find out what has allowed Lesson Study and Learning Study to grow quickly in several different national contexts, and to thrive for more than 100 years in others.

We can learn about Tokkatsu—the Japanese “Special Activities” that focus on developing important student qualities beyond academics, such as contributing to the community and building sound character. When asked what supports widespread Lesson Study in Japan, I often think about Tokkatsu as one foundation, and this year we can learn about it in a keynote, symposium and workshop co-sponsored by JICA and the Nihon Tokubetsu Katsudo Gakkai.

In collaboration with the Malaysia Ministry of Education, the organizing committee has arranged visits to seven



schools—ranging from pre-school to pre-university, and including indigenous, special education and gifted schools—where we can see live lessons. For those of us able to attend WALS 2022 in person, it will be a great joy to see colleagues we have not seen in person since 2019, and to meet new colleagues in the important work of practice-based, educator-led professional learning.

If you are joining remotely in 2022, mark your calendars for September 19–21, 2023 for Baden, Austria, a world heritage site just a short train ride from Vienna. Look forward to a day especially for Ph.D. and early career researchers (September, 19) and school visit program (September 23) in addition to the main conference.

# WELCOMING SPEECH

*Chairperson*  
WALS conference 2022

**Prof. Ts. Dr. Mohamad  
Sattar Rasul**



Lesson Studies, which is primarily a classroom research initiative to promote the growth of teacher professional development, was introduced in Malaysia in 2004 as a research project and postgraduate study. Subsequently, there were other research studies on Lesson Studies launched under the APEC project that looked into the study of Innovative Teaching Mathematics in 2006, Mathematical Thinking in 2007 and Mathematical Communication in 2008.

Another project was “The National Lesson Study Conference in the Southeast Asian Ministers of Education Organisation-Regional Centre for Education in Science and Mathematics (SEAMEO-RECSAM)” in 2008. In 2010, an open class was held at the Syed Shah Sahabudin Science Department, Malaysian Ministry of Education involving 14 schools and 100 teachers. It was eventually in 2011 where Lesson Studies

was officially adopted by 289 primary and secondary schools that were given initial exposure related to the process of implementing Lesson Studies in schools.

The Malaysian Ministry of Education strongly encourages teachers to collaborate through Professional Learning Community programmes as an effort to improve teacher professionalism. As of today, Lesson Studies is one of the tools included in the Professional Learning Community that encourages teachers to collaborate in planning the process of teaching and learning to ensure and maximise the development of student learning. Efforts can also be taken by School Improvement Specialist Coaches (SISC+) to be involved in the implementation of Lesson Studies.



The World Association of Lesson Studies (WALS) has held international conferences every year since 2007 to promote Lesson Studies that provides the opportunity for research on Lesson Study to evolve into forming new knowledge and teaching strategies, especially in various current educational challenges. WALS conferences have always been anticipated since it serves as a platform to share and discuss issues related to teaching and learning in a meaningful dimension through Lesson Studies.

The WALS international conference 2022 in Malaysia is organized by the Faculty of Education, UKM in collaboration with the support from the Ministry of Higher Education and the Ministry of Education, along with the support of education agencies and education exco of several state governments. We are delighted to witness great collaboration between the Faculty of Education, UKM and the WALS Organization that is manifested in the WALS 2022 Conference. The University has always been committed in leading the development of a learned and dynamic society.

Past conferences under WALS have provided a useful and effective platform to discuss issues on teaching and learning among the teachers, researchers and practitioners. We are pleased to continue the tradition and set the platform ready to welcome everyone for more sharing of Lesson Studies.

For the past two years, the WALS Conference has been held fully online due to COVID-19. This year, the committee members strive to implement hybrid where face-to-face activities will be conducted during the conference, including school visits and online presentations. Our aim is to engage all levels of education to share the implementation of their practices in Lesson Studies, ranging from pre-school to higher education and all types of studies.

This conference was well received by all educators and researchers in and outside the country. This year, we welcomed 756 participants (317 international, 439 local) from 31 countries from all over the world with 634 physically attended and 122 participants attended online.

*Welcome to WALS Conference 2022 in Malaysia!*

# THEME AND SUB THEMES

**Theme: Creating Lesson Study in Sustaining Community and Providing Quality Education**

**WALS 2022 Kuala Lumpur offers 12 sub themes:**

1. Lesson or Learning Studies in initial teacher training
2. Lesson or Learning Studies and teacher professional development
3. Lesson or Learning Studies and the facilitator
4. Leadership, management and policy aspects of sustainable Lesson Study
5. Developing Professional Learning Communities: Models and practices
6. Lesson or Learning Studies in different cultural, subject and learning contexts (Primary and Secondary School)
7. Research methodology and theoretical underpinnings of Lesson or Learning Studies
8. Creating knowledge in practice: Lesson or Learning Studies in Pre-schools
9. Creating knowledge in practice: Lesson or Learning Studies in Special Education
10. Creating knowledge in practice: Lesson or Learning Studies in Higher Education
11. Creating knowledge in practice: Lesson or Learning Studies in STEM Education
12. Creating knowledge in practice: A sustaining effort at creating a life-long learning experience

# CONFERENCE SCHEDULE

(PhD And Early Career Researcher Day) – Monday 19 September 2022 VENUE: FACULTY OF EDUCATION		
TIME	ACTIVITIES	LOCATION
8:00-9:00	Breakfast Physical and Online Registration	Ruang Aktiv
9:00-9:20	Welcoming Speech Prof. Dr. Catherine Lewis	Main Room: Gerak Minda 6, Faculty of Education Parallel room: Gerak Minda 5 and 7, Faculty of Education
9:20-10:20	<b>Keynote 1: Expert in Lesson Study</b> Dr. Tina Hayati Dahlan (Universitas Pendidikan Indonesia)	
10:20-10:40	Q & A session	
10:40-11:40	<b>Keynote 2: Ph.D Candidate</b> Ms. Jia Jia Li (Verjie Universiteit Amsterdam)	
11:40-12:00	Q & A session	
12:00-14:00	Break & Lunch	Gerak Minda Foyer
14:00-16:30	<b>Group Session</b> Session 1: 3 Minute Thesis & Discussion Session 2: Article discussion  Gerak Minda 1: Dr. Arif Hidayat Gerak Minda 2: Dr. Shirley Tan Gerak Minda 3: Mr. Noel Jimbai Balang Gerak Minda 4: Mrs. Aini Haziah Amirullah Gerak Minda 5: Dr. Kanageswari Gerak Minda 7: Dr. Pauline Anne	Gerak Minda, Faculty of Education

15:00-16:30	WALS Council Meeting	Gerak Minda 6
19:00-20.30	Council Members Dinner (Council members + Phd keynotes + Phd committee + HOC	Bangi Resort Hotel

<b>CONFERENCE DAY 1 – TUESDAY</b> <b>20 SEPTEMBER 2022</b> <b>VENUE: DECTAR &amp; FACULTY OF ISLAMIC STUDIES</b>		
TIME	ACTIVITIES	LOCATION
8:00-9:00	Registration	Foyer DECTAR
9:00-10:00	<b>Keynote 1: Lesson and Learning Study: What's Next?</b> Prof. Dr. Catherine Lewis (WALS President) Moderator: Prof. Dr. Raihanah Mohd Mydin	Main DECTAR
10:00-10:30	Morning break <b>Poster Presentation 1</b>	Nearby Canopy Main DECTAR
10:30-11:30	<b>Keynote 2: Enhancing Technology Integration in Lesson Study: A Malaysian Perspective</b> Prof. Dato' Dr. Norazah Mohd Nordin (Universiti Kebangsaan Malaysia) Moderator: Prof Dr. Melor Md Yunus	Main DECTAR

TIME	ACTIVITIES	LOCATION
9:00-10:00	Opening Ceremony - National Anthem Negaraku & University Song Varsiti Kita - Recitation of Doa - Welcoming Speech by Vice Chancellor, UKM - Speech by President of WALIS - Cultural performance - Officiating Speech by Malaysian Ministry of Higher Education - Multimedia Presentation - Souvenir Presentation	Main DECTAR
13:00-14:00	Lunch	Nearby Canopy
14:00-15:00	<b>Plenary Session</b>	Main DECTAR + 7 Rooms
15:15-17:00	<b>Parallel Session 1</b>	
17:00	Announcement, Tea and Disperse	Nearby Canopy
19:30	<b>Conference Dinner</b> (Only applicable for participants who have opted as add-on during registration in website)	Bangi Resort Hotel
<p>MAIN DECTAR – Physical presentation AND online for international participant only.</p> <p>Plenary Session and Parallel Session - 8 rooms (DECTAR and 7 rooms for physical presentations). Please refer below:            DECTAR: (1) Main DECTAR, (2) Lobby A, (3) Lobby B, (4) Panggung Seni, (5) Bilik Pra Tonton</p> <p>FACULTY OF ISLAMIC STUDIES: (6) Bilik Mesyuarat Bitara, (7) Bilik Sarjana, (8) Bilik Sheikh Othman Sarawak</p> <p>Poster session - throughout the conference (presenters will put their poster throughout the conference and people are free to visit and see the poster - presenter are encouraged to be at their poster to explain to viewers)</p>		

<b>CONFERENCE DAY 2 - WEDNESDAY</b> <b>21 September 2022</b> <b>VENUE: DECTAR &amp; FACULTY OF ISLAMIC STUDIES</b>		
TIME	ACTIVITIES	LOCATION
8:00-9:00	Announcement	Foyer DECTAR
8:30-9:30	<b>Keynote 3: Let's talk about lesson study talk: What do we say? How do we learn?</b> Prof. Dr. Stephane Clivaz (Lausanne University of Teacher Edu, Switzerland) Moderator: Dr. S. Kanageswari Shanmugam	Main DECTAR
9:30-10:00	Morning break <b>Poster Presentation 2</b>	Nearby Canopy + Main DECTAR
10:00-11:00	<b>Keynote 4: The Lesson Study of Noncognitive Learning: Lesson Study in the Japanese Model of Holistic Education Tokkatsu</b>  Dr. Ryoko Tsuneyoshi (Bunkyo University, Japan) Moderator: Tavily Akimova	Main DECTAR
11:00-12:30	<b>Tokkatsu Symposium</b>	Main DECTAR
12:30-12:45	<b>Poster Presentation 3</b>	Main DECTAR
12:45-14:00	Lunch	Nearby Canopy
14:00-15:30	<b>Symposium</b>	Main DECTAR + 7 rooms

TIME	ACTIVITIES	LOCATION
15.45-17:30	<b>Parallel Session 2</b>	Main DECTAR + 7 rooms
17:45	Announcement, Tea and Disperse	Main DECTAR + 7 rooms
<p>MAIN DECTAR – Physical presentation AND online for international participant only.</p> <p>Plenary Session and Parallel Session - 8 rooms (DECTAR and 7 rooms for physical presentations). Please refer below:  DECTAR: (1) Main DECTAR, (2) Lobby A, (3) Lobby B, (4) Panggung Seni, (5) Bilik Pra Tonton</p> <p>FACULTY OF ISLAMIC STUDIES: (6) Bilik Mesyuarat Bitara, (7) Bilik Sarjana, (8) Bilik Sheikh Othman Sarawak</p> <p>Poster session - throughout the conference (presenters will put their poster throughout the conference and people are free to visit and see the poster - presenter are encouraged to be at their poster to explain to viewers)</p>		

<b>CONFERENCE DAY 3 - THURSDAY</b> <b>22 September 2022</b> <b>VENUE: DECTAR &amp; FACULTY OF ISLAMIC STUDIES</b>		
TIME	ACTIVITIES	LOCATION
8:00-8:30	Announcement	Main DECTAR
8:30-10:00	<b>Parallel Session 3</b>	Main DECTAR + 7 rooms
10:00-10:30	Morning break <b>Poster Presentation 4</b>	Nearby Canopy + Main DECTAR
10:30-11:45	<b>Parallel Session 4</b>	Main DECTAR + 7 rooms
12:00-13:00	<b>Annual General Meeting for World Association Lesson Studies</b>	Main DECTAR
13:00-14:30	Lunch	Nearby Canopy

TIME	ACTIVITIES	LOCATION
14:30-15:30	<p><b>Keynote 5: Lesson Study as Professional Development Opportunities</b></p> <p>Dr. Yeap Ban Har (Singapore) Moderator: Assoc. Prof. Dr. Akihiko Takahashi</p>	Main DECTAR
15:30-16:30	<p><b>Closing Ceremony</b></p> <ul style="list-style-type: none"> <li>- National Anthem 'Negaraku' &amp; Universiti Song 'Varsiti Kita'</li> <li>- Recitation of Doa</li> <li>- Speech by Chairperson WALS 2022</li> <li>- Cultural Performance</li> <li>- Closing Speech by Vice Chancellor, UKM</li> <li>- Announcement of the Host Country for WALS 2023</li> </ul>	Main DECTAR
16:30	Announcement, Tea and Disperse	Main DECTAR
<p>MAIN DECTAR – Physical presentation AND online for international participant only.</p> <p>Plenary Session and Parallel Session - 8 rooms (DECTAR and 7 rooms for physical presentations). Please refer below: DECTAR: (1) Main DECTAR, (2) Lobby A, (3) Lobby B, (4) Panggung Seni, (5) Bilik Pra Tonton</p> <p>FACULTY OF ISLAMIC STUDIES: (6) Bilik Mesyuarat Bitara, (7) Bilik Sarjana, (8) Bilik Sheikh Othman Sarawak</p> <p>Poster session - throughout the conference (presenters will put their poster throughout the conference and people are free to visit and see the poster - presenter are encouraged to be at their poster to explain to viewers)</p>		

<b>SCHOOL VISIT - FRIDAY 23 September 2022</b>		
<b>TIME</b>	<b>ACTIVITIES</b>	<b>LOCATION</b>
7:00-7:30	Assembly	Panggung Seni
8:00	<b>Departure to Schools</b> - Kolej Matrikulasi Selangor, Banting, Selangor - SM Dato' Shahardin - SK Putrajaya Precint 5(1), Putrajaya - SK Bukit Tampoi (A), Dengkil-Banting, Selangor - SM Pendidikan Khas Vokasional Shah Alam, Shah Alam, Selangor - Pusat GENIUS@Pintar Negara, UKM - Tadika Tunas UKM	Main DECTAR
9:00 -12:00	<b>Arrive at school</b> - Introduction - Classroom Observation - Reflection - Lunch	
12:30	<b>Arrive at DECTAR, UKM</b>	

# KEYNOTES

## KEYNOTE 1 : Professor Dr. Catherine C. Lewis

(WALS President)



### *Biodata:*

Catherine Lewis, Ph.D. is a research scientist at Mills College (California, US) who has directed 10 major grants funded by NSF, IES, or private foundations focused on mathematics instructional improvement. Her randomized trial of teacher-led lesson study with Japanese mathematical resources (Lewis & Perry, JRME, 2017, 48:3) was identified by a What Works Clearinghouse-criteria review as one of only two studies of mathematics professional learning (of 643 reviewed) to improve students' mathematical proficiency.

A developmental psychologist fluent in Japanese, she has worked to make Japanese elementary education practices and materials available to U.S. educators, with a particular focus on lesson study (teacher-led, classroom-based professional learning), and Mathematics Teaching Through Problem-solving (an approach in which students build each new mathematical idea in the curriculum). Lewis earned her B.A. at Harvard University and her Ph.D.

at Stanford University, and is currently president of the World Association of Lesson Study. Lewis hails from a family with three generations of classroom teachers.

**Topic :** Lesson and Learning Study:  
What's Next?

### **Synopsis:**

This talk will survey recent developments in Lesson Study and Learning Study and ask: What's next? What promising recent work should we all know about? What gaps remain? Where should we go next?

## KEYNOTE 2 : Prof. Dato' Dr. Norazah Mohd Nordin

(Universiti Kebangsaan Malaysia)

### *Biodata:*

Dr. Norazah Nordin is a Professor of Learning Technologies and Innovation at Universiti Kebangsaan Malaysia (The National University of Malaysia). She is currently serving as Deputy Vice-Chancellor of Industry, Alumni and Community Partnerships. Prior to this post, she was the Dean of the Faculty of Education for about six years. She is regarded as a versatile faculty leader having successfully transformed the faculty in achieving excellence in research, teaching and learning, innovation and community engagement.

Her research areas include Massive Online Open Courses (MOOC), Mobile Learning, ICT in Lifelong Learning, and Instructional Design in Digital Learning and Futuristic Learning. The projects that she leads include the development of Higher Education Active Learning Spaces (HEALS), a collaborative research project with the Australian Innovative University Network. She also leads various projects on the development of MOOCs, Learning Design in the 4th Industrial Revolution and the 4IR Cross-Creative Learning Innovation for Autism. Her most current project is entitled "Google Solutions for Education in Malaysia: Enhancing Active Learning for 21st Century Students with Google Workspace and Chromebooks", in which she is invited by Google Inc. to represent Malaysia to lead the Google for Education Research Project.

**Topic :** Enhancing Technology Integration in Lesson Study: A Malaysian Perspective



### **Synopsis:**

Technology is a powerful tool that transforms the traditional nature of teaching and learning in classrooms. Transforming classrooms into fully 21st century integrated technology requires transformation of perspectives particularly among teachers. In this talk, I will share with you my latest research on Google for Education project which I gleaned various insights as a practitioner and researcher. This study addresses how Malaysian teachers across subjects systematically cultivate their digital skills in communities of practice which results in effective learning among students. Teachers and students are trained to use Google Apps for Education and Chromebooks in this research project. Additionally, teachers are supported with coaching sessions by the expert team from The National University of Malaysia (UKM). I will then conclude this talk by exploring the benefits that both teachers and students get during their lessons in the classrooms by integrating specific technology and suggest future directions for technology integration in lesson study

## KEYNOTE 3 :

### Prof. Dr. Stéphane Clivaz

(Lausanne University of Teacher Edu,  
Switzerland)



#### *Biodata:*

Stéphane Clivaz is a Professor at Lausanne University of Teacher Education (HEP Vaud), Switzerland, teaching mathematics education. After obtaining his master's degree in mathematics, he worked as a secondary mathematics teacher. Subsequently, he served as an academic advisor for the Ministry of Education. He is among the first educators in Switzerland to research on Lesson Study. Stéphane Clivaz co-founded the Lausanne Laboratory Lesson Study (3LS) in 2014 and assumed the role of the head of this laboratory until 2019. In 2021, he was invited as a visiting professor at Nagoya University, Japan. He is currently the Honorary General Secretary of WALs. His work has constantly supported the effort to bridge teacher training, lesson study action research and mathematics education research.

**Topic :** Let's talk about lesson study talk: What do we say? How do we learn?

#### **Synopsis:**

During lesson study sessions, participants are usually engaged in rich and meaningful conversations. Intrigued by the nature of these conversations, my Lausanne Laboratory Lesson Study research group has analysed Swiss teachers' dialogue during lesson study. Building on these dialogues between Swiss teachers who are new to lesson study and working mainly on problem-solving in mathematics, I will highlight some essential characteristics of lesson study. In my presentation, we will explore if these characteristics are universal and how they are related to the construction of professional knowledge during lesson study.

## KEYNOTE 4 : Dr. Ryoko Tsuneyoshi

(Bunkyo University, Japan)



### *Biodata:*

Ryoko Tsuneyoshi is the vice president and specially appointed professor at Bunkyo Gakuin University, Tokyo, Japan. Formerly Professor of Comparative Education (2000-2021) and Director of the Center for Excellence in School Education (2013-2015), she is presently the executive board member of the Intercultural Education Society of Japan, the Japan Educational Research Association, and the All-Japan Tokubetsukatsudo (Tokkatsu) Association. She earned her Ph.D. at the Graduate School of Sociology, Princeton University. She conducts cross-national fieldwork, deals with multicultural issues, and has been assisting with the assisting teachers practice the Tokkatsu model, the Japanese model of holistic education. Her books include: Tokkatsu: The Japanese Model of Holistic Education (Tsuneyoshi, R., Sugita, H., Kusanagi, K. & Takahashi, F. eds., World Scientific, 2021), Minorities and Education in Multicultural Japan (coedited with K. Okano and S. Boocock, Routledge, 2010), and The Japanese Model of Schooling: Comparisons with the United States (RoutledgeFalmer, 2001).

**Topic:** The Lesson Study of  
Noncognitive Learning: Lesson  
Study in the Japanese Model of  
Holistic Education Tokkatsu

### **Synopsis:**

Lesson study has taken root in many countries as a bottom-up, collaborative teacher learning model. There is no doubt that both the research and practice of lesson study has made enormous progress. At the same time, lesson study in the international context has tended to

focus on subjects, on cognitive learning. However, in actuality, lesson study in Japan covers both cognitive/subject and noncognitive/non-subject areas; the official curriculum reflects this, and SEL areas are considered just as important as math and science. A representative set of periods in the latter is called the “Tokubetsu Katsudo” (Tokkatsu for short), which includes activities as diverse as cleaning, group stayovers, club activities and classroom activities. Such collaborative student learning of noncognitive learning is part of the curriculum, and a theme of lesson study in Japan. The Tokkatsu model (as holistic education Japanese style) is now supported nationally in Egypt, and more recently there have been pilot efforts in Malaysia with the assistance of JICA, and in some other countries independently. The concept of how to understand children, mitoru, etc. which has become internationally known with the spread of lesson study, is actually not limited to lesson study, but is part of a holistic learning framework supported by collaborative learning. If lesson study is the collaborative learning of teachers, Tokkatsu is the collaborative learning of students. I will talk about how the two, and cognitive and noncognitive learning in Tokkatsu and lesson study, reinforce each other to improve both teacher and student learning.

## KEYNOTE 5 : Dr. Yeap Ban Har

(Marshall Cavendish Institute, Singapore)

### *Biodata:*

Ban Har holds a PhD in mathematics education, MEd as well as MA in Southeast Asian Studies. Ban Har was a faculty at National Institute of Education, Nanyang Technological University for a decade until 2010. Since then he has been holding concurrent positions of Director of Curriculum and Teacher Development in two schools, Pathlight School in Singapore and Anglo Singapore International School in Thailand.

In the area of lesson study, he conducted in-service workshops for Singapore teachers who were new to lesson study and participated in numerous post-lesson discussions as a knowledgeable other.

He collaborated with Ministry of Education Singapore in a project involving kindergartens educators. He has also used lesson study as a tool for professional development with mathematics teachers in Singapore, the Southeast Asian region and beyond.

He was active in APEC Lesson Study Group as a country specialist for several years and was one of the editors of Lesson Study: Challenges in



Mathematics Education published by World Scientific.

**Topic :** Lesson Study as Professional Development Opportunities

### **Synopsis:**

In this lecture, we will discuss various elements of lesson study and how we can harness each element for teachers' professional learning. Frameworks and tools that serve as lenses for teachers to study lessons and that catalyst and clarify professional learning will be presented. Lesson study has been found to be a conduit of various categories of professional learning and these categories will be presented in this lecture.

# PLENARY

20th September 2022 / Tuesday / 14:00 -15:00

NO	VENUE	TOPIC	PANEL	RAPPORTEUR
1	Main DECTAR	Leading or teacher learning in lesson study PIC: Dr. Hanita Hanim Ismail	1. Pete Dudley (UK) 2. Kanako Kusanagi (Japan) 3. Hasnah Abdullah (Malaysia)	<ul style="list-style-type: none"> <li>• Nurul Syafinaz Binti Isham</li> <li>• Asy Assuara Binti Razak</li> </ul>
2	LOBBY A	Building Learning community PIC: Dr. Marlissa Omar	1. Chi Kueng Cheng (Hong Kong) 2. Balasandran A Ramiah (Malaysia) 3. Nurlina Oon bt Abdullah (Malaysia)	<ul style="list-style-type: none"> <li>• Ellan Govan A/L Rengan</li> <li>• Zirwatul Haza Binti Yusoff</li> </ul>
3	LOBBY B	Method in Lesson Study PIC: Dr. Bity Salwana Alias	1. Sharon Dotger (US) 2. Maitree Insprasitha (Thailand) 3. Kim Hong Teh (Malaysia)	<ul style="list-style-type: none"> <li>• Siti Mazizah Binti Mohd Yasin</li> <li>• Hazian Bin Che Hassan</li> </ul>
4	PANGGUNG SENI	In depth observation & reflection PIC: Associate Professor Dr. Ku Suhaila Ku Johari	1. Akihiko Takahashi (US) 2. Choy Ban Heng (Singapore) 3. Noel Jimbai Balang (Malaysia)	<ul style="list-style-type: none"> <li>• Anita Binti Husin</li> <li>• Haizan Binti Zakaria</li> </ul>
5	BILIK PRA TONTON	Transcript based analysis PIC: Associate Professor Dr. Rosseni Din	1. Arif Hidayat (Indonesia) 2. Bruce Lander (Japan) 3. Aini Haziah Amirullah (Malaysia)	<ul style="list-style-type: none"> <li>• Salma Binti Ab Rahman</li> <li>• Wan Norhasma Binti Wan Hassan</li> </ul>
6	BILIK MESYUARAT BITARA	School university partnership PIC: Dr. Kamariah Abu Bakar	1. Tatang Suratno (Indonesia) 2. Kanageswari Suppiah (Malaysia) 3. Hiroyuki Kuno (Japan)	<ul style="list-style-type: none"> <li>• Nik Mohd Azrihan Bin Abdul Ghafar</li> <li>• Mahnita Binti Mamat@Ahmad</li> </ul>

NO	VENUE	TOPIC	PANEL	RAPPORTEUR
7	BILIK SARJANA	Student voice in lesson and learning study  PIC: Dr. Nur Ainil Sulaiman	1. Claudia Mewald (Austria) 2. Shirley Tan (Switzerland) 3. Nor Faridah bt Abu Bakar (Malaysia)	<ul style="list-style-type: none"> <li>• Lizawati Binti Ahlit</li> <li>• Zainal Abidin Bin Hassan</li> </ul>
8	BILIK SHEIKH OTHMAN SERAWAK	Teacher writing as a result of lesson study  PIC: Dr. Nor Azwahanum Nor Shaid	1. Yeap Ban Har (Singapore) 2. Pauline (Philippines) 3. Bitty Ansawi (SISC+ Sabah)	<ul style="list-style-type: none"> <li>• Siti Nur Atikah Binti Nazari</li> <li>• Ramli Bin Yahya</li> </ul>

## PLENARY 1: LEADING LESSON STUDY OR TEACHER LEARNING IN LESSON STUDY



**Peter Dudley (UK)**

Peter Dudley is an Associate Professor, University of Cambridge. An education leader, writer and researcher, Pete taught primary and secondary in London and abroad and has held education leadership posts locally, nationally and internationally. He was President of the World Association of Lesson Studies from 2016-21 and is now Immediate Past President.

Pete introduced Lesson Study into the UK and has led its development through Research Lesson Study (RLS). His research on teacher learning in RLS was shortlisted for BERA's 2013 Doctoral Research award. The RLS Handbook, first published in 2003, (now in its fifth edition), is freely downloadable in six languages from [www.lessonstudy.co.uk](http://www.lessonstudy.co.uk). 'Lesson Study: professional learning for our time,' was published by Routledge in 2015. Other books and publication are listed at: <https://www.educ.cam.ac.uk/people/staff/dudley/>. Pete is now Assoc. Professor in educational leadership and learning at the University of Cambridge. He still passionately develops and researches collaborative educational improvement in schools and works to bring about reform in school systems. He is a senior Hughes Hall member and a member of 'Oracy Cambridge' and is now leading development of Camtree, a global platform supporting and publishing teacher research [www.camtree.org](http://www.camtree.org)



### **Kanako Kusanagi (Japan)**

Kanako N. Kusanagi is an Assistant Professor at the Center for Advanced School Education and Evidence-based Research, Graduate School of Education, The University of Tokyo.

Kanako N. Kusanagi is an Assistant Professor at the Center for Advanced School Education and Evidence-based Research, Graduate School of Education, The University of Tokyo.

Her research interest is in how to support teachers' professional learning centered on student learning both in Japan and abroad. She specializes in comparative education and sociology of education, especially focusing on international education transfer and the professional development of teachers. She has worked as an educational consultant in Indonesia since 2004. Dr. Kusanagi supports schools to implement Japanese education models for collaborative learning such as "lesson study" and "tokkatsu" based on their local educational needs and interests. She is also leading an international program funded by Toyota Foundation, which aims to nurture empathic, responsible and engaged global citizens through multicultural exchanges among educators and students in Indonesia, Malaysia, and Japan. She is the co-author and co-editor for Tokkatsu: The Japanese Educational Model of Holistic Education, published by World Scientific. She has a PhD in Education from the UCL Institute of Education.



### **Hasnah Abdullah (Malaysia)**

Chairman for Professional Learning Community (PLC) IPGKRM. Teaching professional courses for more than 20 years at Teacher Education Institute Raja Melewar Campus Negeri Sembilan Malaysia. Highly involve with research related to Professional Learning Community (Lesson Study) and doing continuous coaching for PhD candidates as a Certified Coach.

#### **Synopsis:**

Lesson Study (LS) is one of the most applicable tools employed in the Teaching and Learning processes. LS provides a clear guideline for teachers to manoeuvre students' learning in the classroom where the processes begins with identifying students' learning difficulties through observation and discussions. The nature of LS allows teachers to be open minded to discuss best teaching practices in order to produce best learning amongst students. LS can change teachers' thinking system where source of many learning problems can be overcome by making teaching as a collaborative work rather than working in silo. More constructive ideas related to teaching and students' learning revealed during the reflection session. Teachers learn from each other and take the responsibility collectively. Last but not the least LS create a healthy learning amongst teachers and should make LS as a working culture.

## PLENARY 2: BUILDING LEARNING COMMUNITY



### **Chi Kueng Cheng (Hong Kong)**

Associate Dean (Quality Assurance and Enhancement). Faculty of Education and Human Development, The Educational University of Hoong Kong. Dr. Eric Cheng is a specialist in knowledge management and Lesson Study. His research focuses on exploring organizational factors and management strategies that enable school leaders and teachers to leverage pedagogical knowledge assets. Such leveraging aims at improving student learning and capitalizing on the knowledge assets as school intellectual capital for sustainable development. His publication covers the areas of knowledge management, school management, Lesson and Learning Study.



### **Balasandran A Ramiah (Malaysia)**

Excellent Lecturer (Special Grade C), Department of External Cooperation & International Insiitut Aminuddin Baki Northern Branch Ministry of Education



### **Nurlina Oon Abdullah (Malaysia)**

School Improvement Specialist Coach (SISC+) in the Keramat District Education Office, Kuala Lumpur. Her job as an SISC+ entails training teachers, grooming them in their pedagogical skill as well as improving in the performance of the English Language of the district and state.

### Synopsis:

There are various challenges faced by the education sector to improve students' outcomes across the school system and to enable access to quality education for all students irrespective of the school location, size and type. This requires schools to embark on a school improvement process, and teacher quality may well be the most critical factor in addressing improved learning for all students. One of the big ideas to address the challenges will be

promoting the culture of inquiry through Building a Learning Community or the popular term used a Professional Learning Community (PLC) in schools. It is an initiative where committed educators work collaboratively in a continuous manner to embark on an inquiry to improve their practices and consequently improve students' performance. The learning community needs to work systematically to gather evidence or data about students' learning, generate strategies or ideas to enhance learning or to rectify learning deficits among students. The team needs to pursue the strategies and ideas and analyze the impact and evaluate the effectiveness of the intervention employed. Finally, the new learning and improved practices could be shared within the learning community or with other similar teams. To build a learning community, the new order looks at learning as the center where the focus is on how students learn and how teaching is adjusted accordingly. Moreover, teachers need to shift from technical work to intellectual work, control to accountability, managed work to teacher leadership, and from focus on classroom to focus on the whole school.

### PLENARY 3: METHOD IN LESSON STUDY



**Sharon Dotger (US)**

Sharon Dotger is an associate professor of science education in the Syracuse University School of Education. She teaches courses in elementary and secondary science methods, curriculum, learning theory, teacher professional development, and science education research. Her research focuses on teacher learning through lesson study, with recent projects investigating students' and teachers' ideas about teaching science through modelling.



**Maitree Insprasitha (Thailand)**

Vice President for Education & Academic Services. Acting Director of Institute for Research and Development in Teaching Profession for ASEAN. President of Thailand Society of Mathematics Education



### **Kim Hong Teh (Malaysia)**

Ms Teh had served in the Teacher Education Institute (TEI) for 20 years in mathematics education and was seconded to SEAMEO RECSAM as a senior specialist in mathematics education in 2016. Currently, she is affiliated with the Association for Science and Mathematics Education (ASMEP) to continue pursuing her passion for education. She had gone through many waves of changes and development in teaching mathematics.

She lectured on mathematics education courses for the diploma program and degree program in primary mathematics and was involved in conducting mathematics education courses for the ASEAN and African in-service teachers. Her previous involvement in school practicum while in TEI led her to be involved in Lesson Study since 2010. She visited Tokyo Gakugei University in June 2016 to participate in a Lesson Study immersion program. Equipped with the experience, she promoted further Lesson Study with the local teachers/educators and foreign course participants through workshops and studies to bring about the self-elevation of professional practices, particularly in teaching mathematics at primary levels.

#### **Synopsis:**

This panel will discuss what methods in lesson study means to them in their context, how they communicate with others about method, how they navigate differences between ideas about methods, and how their ideas about method have changed over time. The session will conclude with time for audience questions and comments.

## **PLENARY 4: IN DEPTH OBSERVATION & REFLECTION**



### **Akihiko Takahashi (US)**

Akihiko Takahashi, Ph.D., is an Associate Professor at DePaul University in the U.S., where he teaches mathematics and mathematics education. With his first-hand experience of Lesson Study in Japan, he has supported teachers worldwide to use Lesson Study to improve mathematics teaching and learning. In 2016, he proposed the Collaborative Lesson Research, a form of Lesson Study for schools outside Japan as an entry point for school improvement.



**Choy Ban Heng (Singapore)**

Dr. Choy Ban Heng is an Assistant Professor in Mathematics Education at the National Institute of Education, Nanyang Technological University, Singapore. As a mathematics educator, Dr. Choy's research focuses on developing mathematics teachers' expertise in noticing critical mathematical and instructional details during the planning, enactment, and review of lessons.



**Noel Jimbai Balang (Malaysia)**

PhD curriculum and Pedagogy, UKM (Research interest Instructional coaching, coaching and mentoring teachers, Lesson study, curriculum and pedagogy)  
Current position: School Improvement Specialist Coaches (SISC+) Social Science at PPD Selangau, Sarawak.

**Synopsis:**

One of the common issues faced by teachers involved in lesson studies is the difficulty of determining important aspects of the lesson plan. In addition, teachers also use less appropriate instruments when conducting lesson study observations. The CAPITAL technique adapted from the TAEC Model is used as a general guide for teachers to highlight important aspects that need to be focused during the observation of the lesson study. CAPITAL techniques that enhance elements of continuous development, environmental differentiation, application and content of knowledge, assessment, and teaching strategies as well as leadership and collaboration are expected to help teachers provide instruments that can help teachers in conducting effective and efficient observation of lesson studies.

**PLENARY 5: TRANSCRIPT BASED ANALYSIS**



**Arif Hidayat (Indonesia)**

PhDEd. Universitas Pendidikan Indonesia Awarded PhD in Education from Hiroshima University. He has been working extensively with teachers and school for teacher professional learning through lesson study activities and school empowerment since 2008. He is one of Editors in Journal of International Cooperation in Education (Emerald) and Board of Reviewer in Cogent of Education (Taylor & Francis).



### **Bruce Lander (Japan)**

Bruce Lander is a professor in the Graduate School of Language and Communication at Matsuyama University, Ehime, Japan.



### **Aini Haziah (Malaysia)**

Aini Haziah Amirullah was School Improvement Specialist Coach (SISC+) in Seremban District Education Office. She got her Master in Education in UKM and now pursuing her PHD also in UKM. Her contribution in WALs includes her participation in WALs since 2016 to 2021. She had 29 years of experience teaching in schools and 7 years as a coach. As a coach in school, she uses Lesson Study as one of the coaching approaches, organised open classroom in a few schools as well as organising colloquium on Lesson Study in 2021 at state level.

#### **Synopsis:**

Transcript Based Lesson Analysis (TBLA) is a transcript-based learning analysis method developed at Nagoya University, Japan. The methodology of this branch of lesson study is based around the voice and video recordings of the lesson which are then transcribed from start to finish and distributed to all researchers and practitioners involved. Through a close examination of lesson transcripts, teachers, researchers, and educators can gain a finer insight of what goes on in the classroom.

Research in TBLA can reveal what motivates the teacher and what can influence the decisions that they make during the teaching process. Research in this area involves a wide variety of groups including educators of the lesson, planners, curriculum developers, practitioners, researchers, and graduate school students in the field. Through a close examination of the lesson transcripts by all parties involved, researchers can analyse reasoning behind decisions made in the classroom, how to improve on such decisions and develop the lesson further for future students. With the involvement of a wider, global research team from a diverse group of nationalities, this research can further provide insights into cross-cultural pedagogy and help curriculum developers gain an understanding into why certain decisions are made in the classroom and how to improve on teaching methods.

“Much of what happens in the classroom is determined by a cultural code that functions, in some ways, like the DNA of teaching. That’s why changing teachers will not automatically produce changes in teaching” (Stigler & Hiebert, 2009, p. 12). Teachers from the same cultures who have experienced comparable forms of educational upbringings may have similar beliefs about pedagogy.

This round table discussion will discuss these points with three researchers involved in TBLA. Several research papers will be introduced that utilized this area of research as the main theoretical framework. If you are interested in learning more about this specific area of Lesson Study, please come along and join in on the discussion.

## PLENARY 6: SCHOOL UNIVERSITY PARTNERSHIP



**Tatang Suratno (Indonesia)**

Tatang Suratno is from Indonesia University of Education (UPI). Before joining UPI, he was a school teacher and program developer at national teacher institutes. Since 2007, he has involved in international cooperation and dialogue. He has also directed and conducted nation-wide professional development programs, as well as other innovative projects especially related to school reforms, practitioner inquiry and intergenerational learning. His research interest includes the area of science education, teacher education and holistic education.



**Kanageswari Suppiah (Malaysia)**

Dr. S. Kanageswari Suppiah Shanmugam, is a senior lecturer at the School of Education Universiti Utara Malaysia. She holds a Bachelor’s degree with double majors in Mathematics and English, master’s degree in Psychometrics and Educational Measurement and doctoral degree in Psychometrics and Educational Evaluation from Universiti Sains Malaysia, Penang. She served as a teacher for 14 years before joining SEAMEO RECSAM as a Mathematics Education Specialist where she conducted training programmes and research on secondary data analyses on TIMSS.

She is an active member of the National Council on Measurement in Education, American Educational Research Association, International Community of Emergent Researchers in Mathematics Education based at the University of Hamburg, Germany and the Associate Member for the Network on Education Quality Monitoring in the Asia-Pacific UNESCO Bangkok and a committee member of the Malaysian Psychometric Association.



### Hiroyuki Kuno (Japan)

Hiroyuki Kuno, Professor of the Chukyo University since 2021, is an expert in Lesson Study and School Development. He has been actively leading Lesson Study activities in various schools in Japan and is a frequent speaker at international conferences in Singapore, Indonesia, Kazakhstan and UK.

Dr Kuno is a founder member of WALS and acting council member. He was the convener of WALS international conference in Nagoya in 2017. He was Visiting Fellow at Faculty of Education, University of Cambridge, UK in 2013, and at Heidelberg University of Education, Germany in 2017.

### Synopsis:

School-university partnership (SUP) has played a pivotal role in developing and sustaining powerful lesson study practice. Establishing strategic partnership framework—e.g. collaborative inquiry, democratic knowledge creation, mutual learning and structural interdependence, is of paramount importance. Nevertheless, as the world of education is now facing various disruptions, including global crisis, it affects the changing nature of the partnership. In this regard, the panelists will interrogate the key issues and highlight promising approaches for recontextualizing partnership in lesson study.

First, S Kanageswari Suppiah Shanmugam will discuss the value of incorporating action research and lesson study. In doing so, she and her team engaged both practising and prospective teachers to create a professional learning community in mathematics education. The foci include fostering inquiry mindset and reflecting upon students' engagement, conceptual understanding and feedback. Second, Hiroyuki Kuno will highlight the historicity of lesson study partnership and underline the idea of co-responsibility between school and university for professional lifelong learning. Considering the structural complexity in the SUP, he questions 'who is right to fulfil this task and how to design it from context of lesson study' and proposes "SUP coordinator" as a new profession who knows the mechanisms of both parties and ties them up intelligently.

Finally, Tatang Suratno will revisit the SUP framework from epistemological stance. In his reflection, the intractable problem of the SUP lies within the classical, dualistic epistemologies that divides e.g. theory-practice and experts-novices. He encourages all parties involved to reconsider the practical, pragmatic epistemology for an equitable, contextual and mutual sharing in knowledge creation. Self-inquiry, reflective dialogue and caring relationship are key elements in rebuilding a transformative and sustainable partnership.

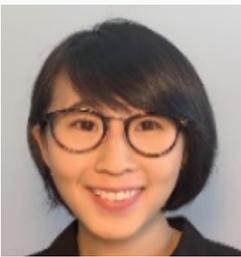
## PLENARY 7: STUDENT VOICE IN LESSON AND LEARNING STUDY



**Claudia Mewald (Austria)**

Claudia Mewald teaches English methodology, children's literature, applied linguistics, testing & assessment and research at the University College of Teacher Education in Baden, Lower Austria. Before, she taught English, History and Arts at primary, special educational needs, and secondary schools. Her research interests are testing & assessment, learner autonomy, CLIL, competency-

based language education, and multilingualism. She is council member of WALs and implements Lesson Study in teacher education and development on a regular basis.



**Shirley Tan (Switzerland)**

Shirley Tan is a research associate at the International Centre for Lesson Studies, Nagoya University, Japan and a postdoctoral researcher at Windesheim University of Applied Sciences, Netherlands. Her doctoral dissertation investigated the use of bansho (board writing) in Japanese classrooms, particularly focusing on how bansho facilitates the visualisation of learners'

thinking, how bansho is essential in teacher education and how this classroom practice is related to wider Japanese classroom cultures. As a scholarship recipient from the government of Japan, she has spent seven years in Japan, observing lessons in schools and participating in Lesson Study and Lesson Analysis cycles



**Nor Faridah Abu Bakar (Malaysia)**

Deputy Director of Selangor State Education Department. She has 32 years of experience in education sector as English and Moral Education teacher, Chief Assistant Director, Head of school and Head of District Education Office. Professional Learning Community and Lesson Study are part of her focus in administering teaching and learning process.

### **Synopsis:**

The “right to be heard” is a principle defined by the “Convention on the Rights of Children” (CRC) published in 1989 by the UNCRC, which emphasises the human rights of free speech and the right to education. Since the publication of the CRC, a growing body of research has widened the right to be heard to the belief that any educational system should be organised around learner needs rather than learners merely adapting to the system. Attending to student voice as a response to the right to be heard thus requires important changes in the culture of education and the relationship between schools, teachers, parents, and learners. To start with, it requires a willingness for the views of learners to be discovered and to be listened to. To achieve this, learners need to be encouraged to become actively involved in their education which requires schools and educators to establish appropriate environments for learners to do so and to acknowledge a multiplicity of voices, including those considered to be conflicting, at equal measure.

We strongly believe that Lesson Study and Learning Study (LLS) can create the necessary environments through putting the learners at the centre: as partners in learning rather than mere recipients of education. In LLS, schools and teachers take a conscious lead in developing ways to enable the views and opinions of learners to be expressed, allowing them to engage in a dialogue about their learning and providing children and young adults with the right opportunities to participate effectively in the processes of planning, implementing, and analysing their learning. This panel session will discuss the following aspects of student voice: attending to student voice as a collaborative process of exploration, explanation, and shared decision-making to further a student-centred 'conception' of teaching and learning developing student voice strategies and LLS tools to gain information about teaching and learning and to further teacher development the integration of student voice in the LLS process.

## PLENARY 8: TEACHER WRITING AS A RESULT OF LESSON STUDY



**Yeap Ban Har (Singapore)**

Ban Har holds a PhD in mathematics education, MEd as well as MA in Southeast Asian Studies. Ban Har was a faculty at National Institute of Education, Nanyang Technological University for a decade until 2010.



**Pauline (Philippines)**

Pauline Anne Therese Mangulabnan  
Assistant Professor in General Education Department, National Institute of Technology, Fukui College



**Bitty Binti Ansawi (Malaysia)**

*School Improvement Specialist Coach (SISC+)*, Language Unit, Learning Sector, Tuaran District Education Office  
She is responsible for coaching and mentoring to guiding teachers in the aspects of pedagogy, assessment and curriculum towards a more interesting and effective classroom teaching and learning, aligned with the current development using the elements of fun learning, technology, and creative and innovative pedagogy.

### Synopsis:

Teacher writing as a result of lesson study focus on the tools that will be used to facilitate teacher writing and some theoretical underpinnings to teacher transformation thorough writing. Th discussion also focus on the model of writing teachers who worked with used as a result of lesson study, it's importance and roles for lesson study practices sustainability. Meanwhile this issue discusses on the topic on writing and sharing best practices among teachers as a result of lesson study.

# SYMPOSIUM

21 Sept 2022 / Wednesday / 11:00 -12:30

NO	ROOM	ID	TOPIC	PRESENTER
<b>21 Sept 2022 / Wednesday / 11:00 -12:30</b>				
	MAIN DECTAR	129	<p>Lesson Study of Noncognitive Skills: The Japanese Tokkatsu Model of Holistic Education</p> <p>PIC: Dr. Suziyani Mohamed            Rapporteur: Siti Nazura Ammi@Azmi Zaisahiraton Zainudin</p>	<ol style="list-style-type: none"> <li>1. Ryoko Tsuneyoshi (Bunkyo Gakuin University, Japan)</li> <li>2. Tetsuo Kyomen (University of Tsukuba, Japan)</li> <li>3. Nor Hisham bin Ismail (Ministry of Education, Malaysia)</li> <li>4. Hiroshi Sugita (Kokugakuin University, Japan)</li> <li>5. Mohamed Abdelmeguid (JICA Project, Egypt)</li> <li>6. Safaa Nour (Cairo University, Egypt)</li> <li>7. Tatang Suratno (Indonesia University of Education, Indonesia)</li> </ol>
<b>21 Sept 2022 / Wednesday / 14:00-15:30</b>				
1	MAIN DECTAR	329	<p>How we expect Lesson Study contribute to the quality of teaching and learning</p> <p>PIC: Dr. Khairul Azhar Jamaluddin            Rapporteur: Elenchothy Davrajoo Tuan Mohd Ridzuan Tuan Mohd</p>	<ol style="list-style-type: none"> <li>1. Akihiko Takahashi (DePaul University, US)</li> <li>2. Stephane Clivaz (Lausanne University of Teacher Education, Switzerland)</li> <li>3. Catherine Lewis (Mills College, US)</li> <li>Kari Laux (Citizens of the World Charter Schools, US)</li> </ol>

2	LOBBY A	102	<p>Blended Learning Classroom (BLC): New extended Classroom for Post Covid Education</p> <p>PIC: Dr. Wan Ahmad Munsif Wan Pa Rappeur: Norharlinda Harun Mokhzani Fadir</p>	<ol style="list-style-type: none"> <li>1. Maitree Inprasitha (Khon Kaen University, Thailand)</li> <li>2. Nisakorn Boonsena (Khon Kaen University, Thailand)</li> <li>3. Narumon Changsri (Khon Kaen University, Thailand)</li> <li>4. Jitlada Jaikla (Khon Kaen University, Thailand)</li> <li>5. Jiradawan Huntula (Khon Kaen University, Thailand)</li> <li>6. Patinya Prapertchob (Santitham Wittaya School, Thailand)</li> <li>7. Fareeda Prapertchob (Santitham Wittaya School, Thailand)</li> </ol>
3	LOBBY B	140	<p>Use Kakari Activities to Nurture Whole-Child Development in Your Classroom: Designing and Reflecting Through Lesson Study</p> <p>PIC: Dr. Nur Ainil Sulaiman Rappeur: Noraishah Mohd Noor Muralitharan Ammasi</p>	<ol style="list-style-type: none"> <li>1. Maki Yamada (Sugiyama Jogakuen University, Japan)</li> <li>2. Kyoko Abe (National Institute for Educational Policy Research, Japan)</li> <li>3. Yuki Hashitani (Nippon Sport Science University, Japan)</li> <li>4. Osamu Hirano (Shokei University, Japan)</li> <li>5. Nobuhiro Setoguichi (PADECO Co., Ltd., Japan)</li> </ol>
4	PANGGUNG SENI	167	<p>Mathematical Strategies: To Tackle Problem Solving in an Urban Community Classroom</p> <p>PIC: Dr. Maslawati Mohamad Rappeur: Norhayati Hassan Willi Anyang</p>	<ol style="list-style-type: none"> <li>1. Naomi Ishida (Rosalyn Yalow Charter School, US)</li> <li>2. Emuejevoke Ofuyah (Rosalyn Yalow Charter School, US)</li> <li>3. Lisa Lugo (Rosalyn Yalow Charter School, US)</li> </ol>

5	BILIK MESYUARAT BITARA	327	<p>Development of Teacher Education in the Global Era of East Asia - Focusing on Ed.D. and Master Programs for In-Service Teachers</p> <p>PIC: Dr. Bity Salwana Alias Rapporteur: Lau Lih Ha Kho Ling Hong</p>	<ol style="list-style-type: none"> <li>1. Tetsuo Kuramoto (Shizuoka University, Japan)</li> <li>2. Bruce Lander (Matsuyama University, Japan)</li> <li>3. Cheng, Chi Keung Eric (The Education University of Hong Kong, Hong Kong)</li> <li>4. Nam-Phuong Nguyen (Hanoi National University of Education, Vietnam)</li> <li>5. Takehiro Wakimoto (Yokohama National University, Japan)</li> <li>6. Kiyotaka Sakai (University of Teacher Education Fukuoka, Japan)</li> </ol>
6	DEWAN SARJANA	372	<p>How Do Teachers Involve Students in Lesson Studies and What Do They Learn from Their Students' Voices?</p> <p>PIC: Associate Professor Dr. Ku Suhaila Ku Johari Rapporteur: Mohammad Zulfadli Seddek Catharina Anak Stephen</p>	<ol style="list-style-type: none"> <li>1. Tomoko Tamura (Osaka Kyoiku University, Japan)</li> <li>2. Yuko Uesugi (Eikei University of Hiroshima, Japan)</li> <li>3. Yasuhiro Shibata (University of Teacher Education Fukuoka, Japan)</li> <li>4. Daisuke Suzuki (Board of Education, Gifu City, Japan)</li> <li>5. Peter Dudley (University of Cambridge, UK)</li> </ol>
7	DEWAN SHEIKH OTHMAN SERAWAK	400	<p>Japanese EdTech App Leads Teachers to Student-Centered Classrooms</p> <p>PIC: Dr. Nurwina Akmal Anuar Rapporteur: Madelene Anak Bilun Wes Anak Mirid</p>	<ol style="list-style-type: none"> <li>1. Mika Yoshikawa (LoiLo.Inc, Japan)</li> <li>2. Ryutaro Sugiyama (LoiLo.Inc, Japan)</li> <li>3. Yamisle Roca (LoiLo.Inc, Japan)</li> </ol>

NO	ROOM	ID	TOPIC	PRESENTER
<b>22 Sept 2022 / Thursday / 8:30-10:30</b>				
8	BILIK MESYUARAT BITARA	202	<p>Learning Studies as Teacher Professional Development and Enhancing Students' Learning Amongst Kelas Al-Quran and Fardhu Ain (KAFA) Teachers in the state of Negeri Sembilan, Malaysia</p> <p>PIC: Dr. Nor Azwahanum Nor Shaid  Rappeur: Jong Oi Sen  Suriani Alland Rice Oxley</p>	<ol style="list-style-type: none"> <li>1. Hasnah Abdullah (IPGM Kampus Raja Melewar, Malaysia)</li> <li>2. Fairuzzah Harun (IPGM Kampus Raja Melewar, Malaysia)</li> <li>3. Nurul hidayah Alias (IPGM Kampus Raja Melewar, Malaysia)</li> <li>4. Lelawati Mazeli (JHEAINS, Malaysia)</li> <li>5. Mohd Zaidi Ramli (JHEAINS, Malaysia)</li> <li>6. Siti Nur Fikrah Mohd Jasri, (JHEAINS, Malaysia)</li> </ol>
9	DEWAN SARJANA	392	<p>Conditions, that provide sustainable change of teachers' practices in educational organizations: The role of the Center of Excellence in this process.</p> <p>PIC: Dr. Syar Meeze Mohd Rashid  Rappeur: Harris Suffian @ Bali  Ramlah Abdul Rahim</p>	<ol style="list-style-type: none"> <li>1. Elvira Rakhmail (Center of Excellence, Kazakhstan)</li> <li>2. Yuliya Melnikova (Center of Excellence, Kazakhstan)</li> <li>3. Toshiya Chichibu (National Institute for Educational Policy Research, Japan)</li> <li>4. Pete Dudley (University of Cambridge, UK)</li> </ol>
10	DEWAN SHEIKH OTHMAN SERAWAK	325	<p>Understanding Models of Observation in Bhutan, Mexico and Namibia, and Learning from Japan to Maximize Teacher Learning in Lesson Observation</p> <p>PIC: Dr. Nur Atiqah Jalaluddin  Rappeur: Nancy Ng Yut Kuan  Sylvia Miting Pakoi</p>	<ol style="list-style-type: none"> <li>1. Pauline Anne Therese Mangulabnan (National Institute of Technology, Fukui College, Japan)</li> <li>2. Yoshiko Hambara (University of Fukui, Japan)</li> <li>3. Damcho Wangchuk (University of Fukui, Japan)</li> </ol>

# MAIN SYMPOSIUM

## Lesson Study of Noncognitive Skills: The Japanese “Tokkatsu” Model of Holistic Education



**Ryoko Tsuneyoshi**  
Vice president and specially appointed professor at Bunkyo Gakuin University, Tokyo, Japan

Formerly Professor of Comparative Education (2000-2021) and Director of the Center for Excellence in School Education (2013-2015), she is presently the executive board member of the Intercultural Education Society of Japan, the Japan Educational Research Association, and the All-Japan Tokubetsukatsudo (tokkatsu) Association. She earned her Ph.D. at the Graduate School of Sociology, Princeton University.



**Tetsuo Kyomen**  
University of Tsukuba, Japan

Board member of Asian Academic Society for Vocational Education and Training. Focus of research: extracurricular activities, career education, comparative education Articles include: Tetsuo Kyomen (2021). Agency Development to Promote Global Citizenship via Tokkatsu: How Student Councils Can Alter School



**Hiroshi Sugita**  
Professor, Department of Elementary Education, Kokugakuin University

Senior Specialist for Curriculum - MEXT (Tokkatsu), Inspector for Schools - MEXT, Professor of Kokugakuin University. Research areas: Special activities, School management, Classroom management, Teacher and teaching profession.



**Tatang Suratno**  
Researcher of Universitas Pendidikan Indonesia

Tatang Suratno is from Indonesia University of Education (UPI). He has directed and conducted nation-wide professional development programs, as well as other innovative projects especially related to school reforms, practitioner inquiry and intergenerational learning.



**Mohamed Abdelmeguid Said**

JICA Project Specialist as program officer , JICA project for Enhancement and dissemination of Tokkatsu Model in Egypt,

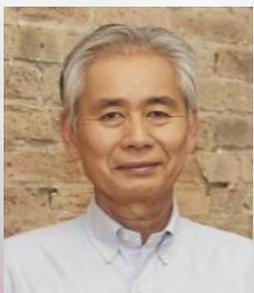


**Safaa Nour**

JICA Project Specialist / Lecturer, Faculty of Arts, Cairo University

# SYMPOSIUM 1

How We Expect Lesson Study Contribute To The Quality Of Teaching And Learning



**Akihiko Takahashi**  
**Associate Professor, DePaul University, USA**

Akihiko Takahashi, Ph.D., is an Associate Professor at DePaul University in the U.S., where he teaches mathematics and mathematics education. With his first-hand experience of Lesson Study in Japan, he has supported teachers worldwide to use Lesson Study to improve mathematics teaching and learning.



**Catherine Lewis**  
**Research Scientist , Mills College, USA**

Catherine Lewis is a Distinguished Research Scientist at Mills College (California) who has directed 10 major grants funded by NSF, IES, or private foundations focused on mathematics instructional improvement. Her randomized trial of teacher-led lesson study with Japanese mathematical resources (Lewis & Perry, JRME, 2017, 48:3) was identified by a What Works Clearinghouse-criteria review as one of only two studies of mathematics professional learning (of 643 reviewed) to improve students' mathematical proficiency.



**Stéphane Clivaz**  
**Professor, Lausanne University of Teacher Education, Switzerland**

Stéphane Clivaz is a Professor at Lausanne University of Teacher Education (HEP Vaud), Switzerland, teaching mathematics education. After obtaining his master's degree in mathematics, he worked as a secondary mathematics teacher. Subsequently, he served as an academic advisor for the Ministry of Education. He is among the first educators in Switzerland to research on Lesson Study.

Stéphane Clivaz co-founded the Lausanne Laboratory Lesson Study (3LS) in 2014 and assumed the role of the head of this laboratory until 2019. In 2021, he was invited as a visiting professor at Nagoya University, Japan. He is currently the Honorary General Secretary of WALs. His work has constantly supported the effort to bridge teacher training, lesson study action research and mathematics education research.



**Kari Laux**  
**Citizens of the World Charter School, USA**

Kari Laux is an elementary math specialist at Citizens of the World Charter Schools in Los Angeles, California. Formerly a classroom teacher for ten years, she was introduced to Lesson Study in 2016. She has had the opportunity to see firsthand the way Lesson Study can transform teacher practice and student learning. She has both participated in and led many lesson study cycles and had the chance to learn about Lesson Study firsthand in Japan

# SYMPOSIUM 2

## Blended Learning Classroom (BLC): New Extended Classroom for Post Covid Education



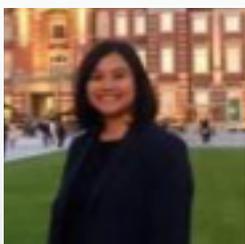
**Maitree Inprasitha**  
Khon Kaen University, Thailand

Vice President for Education & Academic Services. Acting Director of Institute for Research and Development in Teaching Profession for ASEAN. President of Thailand Society of Mathematics Education



**Narumon Changsri**  
Khon Kaen University, Thailand

Assistant Director of Research and Innovation Development, Institute for Research and Development in Teaching Profession for ASEAN. Director of Center for Research in Mathematics Education. Lecturer of Mathematics Education Program, Faculty of Education



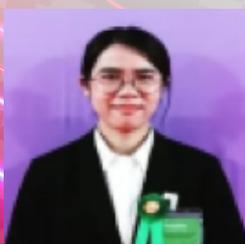
**Jiradawan Huntula**  
Khon Kaen University, Thailand

Assistant Director of Professional Development and Academic Services, Institute for Research and Development in Teaching Profession for ASEAN. Lecturer of Sciences Education Program, Faculty of Education.



**Nisakorn Boonsena**  
Khon Kaen University, Thailand

Lecturer of Mathematics Education Program, Faculty of Education.



**Jitlada Jaikla**  
Khon Kaen University, Thailand

Lecturer of Mathematics Education Program, Faculty of Education



**Patinya Prapertchob**  
Santitham Wittaya  
School, Thailand

Principal of Santitham  
Wittaya School



**Fareeda  
Prapertchob**  
Santitham Wittaya  
School, Thailand

Teacher of  
Santitham Wittaya  
School

# SYMPOSIUM 3

**Use Kakari Activities to Nature Whole-Child Development in Your Classroom:  
Designing and Reflecting Through Lesson Study**



**Maki Yamada**  
Professor of  
Sugiyama Jogakuen  
University, Japan



**Yuki Hashitani**  
Professor of Nippon  
Sport Science  
University, Japan



**Kyoko Abe**  
Researcher of  
National Institute  
for Educational  
Policy Research,  
Japan



**Osamu Hirano**  
Professor of Shokei  
University, Japan



**Hiromi Shimizu**  
Principal of  
Hachioji Nakayoshi  
Kindergarten, Japan

# SYMPOSIUM 4

## Mathematical Strategies: To Tackle Problem Solving in an Urban Community Classroom



**Naomi Ishida**  
**Rosalyn Yalow Charter School New York, United States Director of Singapore Math**

Ms. Ishida has many years of teaching experience in elementary school classrooms in Japan and in the United States. Her current position is the Director of Singapore Math in an Urban school in New York City. Ms. Ishida is the founder of the Rosalyn Yalow Charter school mathematics program since this school opened in 2015.

She created the curriculum, assessments and provided professional development to the teachers. Ms. Ishida and her research team presented at the 13th Annual International Conference of the World Association of Lesson Studies (WALS) in Amsterdam and the National Council of Teachers of Mathematics (NCTM) in the U.S.



**Emuejevoke Ofuyah**  
**Rosalyn Yalow Charter School**

She is an Educator at Rosalyn Yalow Charter School. She has been a teacher at Rosalyn Yalow for about 5 years. She has a Master's degree in Childhood Education and studied and worked in this field for about 6 years. She believe a growth mindset for students and educators is the key to success.



**Emuejevoke Ofuyah (Rosalyn Yalow Charter School)**  
**Lisa Maria Lugo**  
**Rosalyn Yalow Charter School**

She has been an educator for 20 years. Her teaching career in the archdiocese of New York City. I have been an educator at Rosalyn Yalow Charter School for 7 years now and a part of the lesson study for 4 out of those 7 years.

# SYMPOSIUM 5

## Development of Teacher Education in the Global Era of East Asia - Focusing on Ed.D. and Master Programs for In-Service Teachers



**Tetsuo Kuramoto**  
**Professor, Shizuoka University of Art and Culture, Japan**

He is a specialist in Teacher Education, from the perspectives of school management, leadership, curriculum, and instruction. He is interested in the research concepts of Lesson Study, Curriculum/ knowledge Management, and Action Research.

Also, he is actively contributing to various educational institutions, including as a chief national evaluator of teachers' master and doctoral programs for the ministry of education in Japan (MEXT).



**Nguyen Nam Phuong**  
**Lecturer, The Hanoi National University of Education, Vietnam**

Dr. Nam-Phuong Nguyen now is a lecturer in the Faculty of Psychology and Pedagogy, Hanoi National University of Education. She has been focusing on teacher education, more preferably on in-service teacher education, with nearly 20 papers published

in national and international conferences relating to teacher professional development through Lesson study, Learning study.



**Eric C. K. Cheng**  
**Associate Dean, The Education University of Hong Kong**

Dr. Eric Cheng is a specialist in knowledge management and Lesson Study. His research focuses on exploring organizational factors and management strategies that enable school leaders and teachers to leverage pedagogical knowledge assets. Such leveraging aims at improving student learning and capitalizing on the knowledge assets as school intellectual capital for sustainable development. His publication covers the areas of knowledge management, school management, Lesson and Learning Study.



**Bruce Lander**  
**Professor, Matsuyama University, Japan**

Bruce Lander is a professor in the Graduate School of Language and Communication at Matsuyama University, Ehime, Japan. After completing a PhD in blended learning on the use of technology in education, he now focuses his attention on helping others learn about the benefits technology can provide education through

various professional development projects. His other research areas include, Formative Assessment, MALL, Lesson Study and Intercultural Communication.



**Takehiro Wakimoto**  
**Associate Professor, Yokohama National University, Japan**

Dr. Takehiro Wakimoto is an associate professor in Graduate School of Education, Yokohama National University. His research is teacher education and educational technology. With regard to the development of young novice teacher, he is engaged in research on team-based mentoring with the Yokohama City Board of Education.



**Kiyotaka Sakai**  
**Associate Professor /Ph.D, University of Teacher Education Fukuoka, Japan**

He was an elementary school teacher until six years ago. Currently, He is teaching a straight master's course at Fukuoka University of Education's Graduate School of Teaching. In addition, he is involved in in-school research at various schools and supervises teachers.

# SYMPOSIUM 6

## How Do Teachers Involve Students in Lesson Studies and What Do They Learn from Their Students' Voices?



**Tomoko Tamura**  
Professor of  
The United  
Graduate School  
of Professional  
Teacher Education,  
Osaka Kyoiku  
University



**Daisuke Suzuki**  
Director of Gifu City  
Board of Education



**Yasuhiro Shibata**  
Teacher at Kokura  
Junior High  
School Attached  
to University of  
Teacher Education  
Fukuoka



**Yuko Uesugi**  
Professor of  
Hiroshima  
Corporation for  
Higher Education,  
Eikei University of  
Hiroshima



**Peter Dudley**  
Associate Professor, University of Cambridge

An education leader, writer and researcher, Pete taught primary and secondary in London and abroad and has held education leadership posts locally, nationally and internationally. He was President of the World Association of Lesson Studies from 2016-21 and is now Immediate Past President. Pete introduced Lesson Study into the UK and has led its development through Research Lesson Study (RLS). His research on teacher learning in RLS was shortlisted for BERA's 2013 Doctoral Research award.



**Seitaro Tominaga**  
Science teacher,  
Junior High School  
Attached to Faculty  
of Education,  
Kumamoto  
University

# SYMPOSIUM 7

## Japanese EdTech App Leads Teachers to Student-Centered Classrooms



**Mika Yoshikawa**  
Public Relationship Coordinator, LoiLo Inc.

Mika Yoshikawa joined LoiLo in 2018 after working as a Japanese language teacher for over 4 years. She is highly interested in language, career education, and videography. With her background in education, she strives to build and improve teacher networks while advocating for stimulating lessons in the modern era that build upon traditional methods in a fun way.

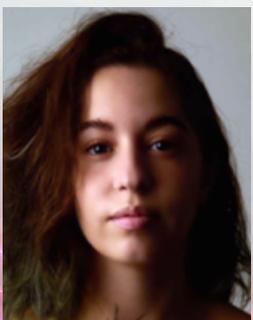
As the Public Relations Department Manager at LoiLo, she wishes to contribute to sustainable development in the facilitation of future learning in and out of classrooms.



**Ryutaro Sugiyama**  
President, LoiLo Inc.

Founder and President of LoiLo Inc. After working as a game designer, Ryutaro Sugiyama founded LoiLo Inc. with his brother, Koji Sugiyama, a programmer. He developed a video editing application using game technology, which attracted worldwide attention. This project was selected by the Ministry of Economy, Trade, and Industry in Japan for the 2008 Exploratory Software Project and he was certified as a Super Creator in the same year. Currently, he

is working to promote student-centered classes. While leading the development of LoiLoNote School, a class support application, he manages sales teams in Japan and overseas.



**Yamisle Roca**  
Global Sales Specialist, LoiLo Inc.

Yamisle Roca is an American-born Cuban and a graduate student currently working to achieve her Ph.D. in International Relations at Ritsumeikan University in Kyoto, Japan. Her research focuses on Japanese Soft Power and Public Diplomacy, though her background experience stems across Political Science and Pre-Law, Conflict studies, Security and Diplomacy, Philosophy, Spanish, Theory studies, and so on. She joined LoiLo as a Global Sales and

Customer Success Specialist in 2022 and aims to eagerly apply her specialties to helping students all over the world become lifelong learners.

# SYMPOSIUM 8

Learning Studies as Teacher Professional Development and Enhancing Students' Learning Amongst Kelas Al-Quran and Fardhu Ain (KAFA) Teachers in the state of Negeri Sembilan, Malaysia



**Dr. Hasnah Abdullah**

Senior Lecturer, IPGK Raja Melewar, Malaysia. Major in Educational Studies. Teaching professional courses for more than 20 years at Teacher Education Institute Raja Melewar Campus Negeri Sembilan Malaysia. Highly involve with research related to Professional Learning Community (Lesson Study) and doing continuous coaching for PhD candidates as a Certified Coach.



**Dato Mohd Zaidi Ramli**

Director, Negeri Sembilan Islamic Religious Department. Major in Communication Management. Currently the Director for Negeri Sembilan State Religious Department. Has been in position for more than four years. Being very active in delivering talks in management and leadership Islamic way.



**Nurulhidayah Alias**

Head Of Service Management, IPGK Raja Melewar, Malaysia. Experienced in management for 10 years at Teachers Education Institute Raja Melewar Campus Negeri Sembilan, Malaysia. Actively involve in KAFA teachers's training.



**Lelawati Mazeli**  
**JHEAINS Officer.**

Currently act as an officer at State Religious Department in Negeri Sembilan. Have rich experiences in teaching English at religious school in Negeri Sembilan.



**Siti Nur Fikrah Binti Mohd Jasri**  
**Teacher, IPGK Raja Melewar, Malaysia**  
**Religious Study**

Actively involved in teaching fundamental Islamic study for primary students, also known as 'Kelas al-Quran dan Fardhu Ain' (KAFA) in Sekolah Kebangsaan Dato' Ahmad Manaf, Negeri Sembilan under the supervision of Jabatan Hal Ehwal Agama Islam Negeri Sembilan.

# SYMPOSIUM 9

## Conditions that provide sustaining change of teachers' instructional practices in educational organizations



**Peter Dudley**  
**Associate Professor, University of Cambridge**

An education leader, writer and researcher, Pete taught primary and secondary in London and abroad and has held education leadership posts locally, nationally and internationally. He was President of the World Association of Lesson Studies from 2016-21 and is now Immediate Past President. Pete introduced Lesson Study into the

UK and has led its development through Research Lesson Study (RLS). His research on teacher learning in RLS was shortlisted for BERA's 2013 Doctoral Research award. The RLS Handbook, first published in 2003, (now in its fifth edition), is freely downloadable in six languages from [www.lessonstudy.co.uk](http://www.lessonstudy.co.uk).



**Elvira Rakhmail**  
**Senior Manager Center of Excellence Kazakhstan**

Elvira has started her career as a teacher at school and a debate trainer in 2003. For some period, she lived in Prague, Czech Republic and worked in a company "Languages at Work" as a teacher of English and Russian languages for grown-ups.

In 2012 Elvira changed her field and continued her career in professional development for teachers where she worked with more than 1000 teachers from all over Kazakhstan. Part of her job is to train teachers in LS, facilitate this process, make regular school visits for observations, providing feedback and many more.



**Yuliya Melnikova**

Yuliya Melnikova is a certified trainer of modernized/level programs of Cambridge Examination Board held in Kazakhstan, certified coach of the International Erickson University. She is an expert in conducting and developing courses within the framework of the European Union project in promoting the support to the Education

Sector in Turkmenistan. She is also a regular participant of WALs conference.



**Toshiya Chichibu**  
Senior Researcher

Toshiya Chichibu is a senior researcher at National Institute for Educational Policy Research of Japan. His speciality is organizational development through lesson study. He has coached not only schools but also provincial and municipal boards of education in Japan. In

2013, he stayed in Kazakhstan and visited cities to coach lesson study. He visits the country almost every year.

# SYMPOSIUM 10

## Understanding Models of Observation in Bhutan, Mexico and Namibia, and Learning from Japan to Maximize Teacher Learning in Lesson Observation



**Pauline Anne Therese Mangulabnan**

Assistant Professor in General Education Department, National Institute of Technology, Fukui College



**Yoshiko Hanbara**

Associate Professor, United Graduate School of Professional Development of Teachers, University of Fukui, Japan



**Damcho Wangchuk**

He is a teacher in Bajothang Higher Secondary School, Bhutan. Majoring in Physics.

Currently enrolled as a student at the University of Fukui, Japan in Department of Professional Development of Teachers.

### Uzuvira Tjomita

English as a second language teacher, Ministry of Education, Arts and Culture, Namibia. M. H. Greeff Primary School.

Currently based in Japan, Fukui Prefecture at the University of Fukui, under the MEXT Teacher Training Program. My focus area of research is how teachers reflect and how they use reflection to improve classroom teaching practices. Teachers in Namibia can improve their teaching practices by coming together and sharing their teaching experiences through planning, executing what was planned and reflecting on how the lesson was.

# PARALLEL SESSION

173 paper presentations and 42 poster presentations for  
3 days (20-22 Sept 2022)



# SPONSORSHIPS

*Ministry of Tourism, Arts, and Culture*

*Teacher Professionalism Division, Ministry of Education*

*Faculty of Education, Universiti Kebangsaan Malaysia*

*Secondary Education Division, Majlis Amanah Rakyat*

*Jabatan Hal Ehwal Agama Islam Negeri Sembilan*

*Yayasan Pahang*

*Yayasan Islam Kelantan*

*Yayasan Hasanah*

*Majlis Agama Islam Wilayah Persekutuan*

*Institute of Teacher Education, Ministry of Education*

*Yayasan Sarawak International Secondary School*

## PARALLEL SESSION 1

20 September 2022 (15:15 – 17:00)

### VENUE: MAIN DECTAR

Section : Parallel Session 1

Time : 15:15 – 17:00

Sub Theme : Lesson or Learning Studies in Different Cultural, Subject, and Learning Contexts (Primary and Secondary Schools)

Chairperson : Kanako Kusanagi

No	ID	First Author	Title
1	171	Dancy Agan	Integration of History, Malay Language and Physical Education Subjects in Strengthening Higher Order Thinking Skills Through Lesson Study
2	195	Venissa Ugun	Improving ESL Primary School Learners' Speaking Skills Through Lesson Study
3	239	Wulan Tisahyuning Tyas	Effects of Group Discussion Towards Students' Conceptual Understanding - Data From Lesson Study
4	396	Kanako Kusanagi	Lesson Study and Tokkatsu for Building a Caring School Community
5	242	Angga Sri Prasetyo	Internalization of Di Zi Gui Values - Character Education Through Positive Discipline in The Learning Process
6	240	Wulan Tisahyuning Tyas	Effects of Group Discussion in Online Learning on Mathematical Problem-Solving Skills on Primary Students
7	203	Nadia Nazreen binti Mohd Nasir	Learning Study (LS) on Sirah Subject Amongst Year 4 pupils at a Selected Primary School in Port Dickson, Negeri Sembilan, Malaysia.

**VENUE: LOBBY A**

Section : Parallel Session 1

Time : 15:15 – 17:00

Sub-Theme : Lesson or Learning Studies in Different Cultural, Subject, and Learning Contexts (Primary and Secondary Schools)

Chairperson : Muhammad Sofwan Mahmud

NO	ID	FIRST AUTHOR	TITLE
1	280	Nur Liana binti Sahar	Lesson Study: Improving Students' Speaking Achievement Through Six Thinking Hats Strategy
2	296	Che Suriyati Binti Che Awang	Interventions of Teaching Linkers and Cohesive Devices for Part 2, English Writing Paper, School-Based Assessment
3	352	Sharon Dotger	Investigating The Relationship Between Science Content and Scientific Practices in Two Us Elementary Science Research Lessons
4	268	Armawati	The Effect of Confucius Moral Values Education at Pre-School Level on Character Building
5	406	Paula Castro	Lesson Study : A Dialogical Experience in Brazilian Public Schools
6	435	Siti Nur Haslinda	Lesson Study as an Approach in Improving Creative Thinking Skills : Insights from The International and Environmental Issues Course.

**VENUE: LOBBY B**

Section : Parallel Session 1

Time : 15:15 – 17:00

Sub Theme : Lesson and Learning Studies and Teacher Professional Development

Chairperson : Satinah binti Awang

NO	ID	FIRST AUTHOR	TITLE
1	189	Satinah binti Awang	Lesson Study in The International Baccalaureate Diploma Program (IBDP) for Chemistry Higher Level
2	117	Banhengchoy	Kyouzai Kenkyuu: A Key to Unlock New Comprehension Through Lesson Study
3	49	Kanatbek Saugabekov	Collaboration of History and Computer Science Teachers in Application of Concept-Based Learning
4	110	Daryl Michel, Phd	Engaging With Colleagues in Recurring Lesson Study Lesson Cycles : The Promise When Learning Together
5	149	Christofer Handoko Ltb Tobing	The Implementation of Blended Learning to Increase Grade Xi Science Students' Critical Thinking Skills in Learning Biology at SMA 'Tikva' Palembang
6	181	Andrea Vetter	Primary Mathematics Teachers' Collaborative Diagnostic Assessment / Analysis Practices: A Case of in-School Lesson Study
7	65	Nessibeli	Develop Students' Critical Thinking Skills Through Differentiation Tasks

**VENUE: PANGGUNG SENI**

Section : Parallel Session 1

Time : 15:15 – 17:00

Sub Theme : Lesson and Learning Studies and Teacher Professional Development

Chairperson : David Sekao

NO	ID	FIRST AUTHOR	TITLE
1	228	David Sekao	Considerations for Successful Introduction of Lesson Study in Schools
2	244	Irvin Irawan	Lesson Study as a Tool for Teacher Learning – Case Study of Lower Primary Mathematics Teachers
3	249	Ananthinithanabalan	A Visual Classroom – Using Visuals to Enhance Students’ Learning of Phonemic Awareness Skills in School-Based Dyslexia Remediation (SDR) Programme
4	262	Zulkifili Bin Saleh	Incorporating Learning Study Approach In Teachers’ Professional Learning Communities (PLC)
5	408	Ratu Ilma Indra Putri	Lesson and Learning Study for Primary School Teachers in Palembang
6	69	Alima Kurbangaliyeva	How to Develop Students’ Skill of Planning an Experiment (Explaining Variables and Formulating a Hypothesis) Through Visual Sources of Information?
7	206	Siti Nur Fikrah Mohd Jasri	Lesson Study (LS) in Arabic Language Lesson Amongst KAFA Year 5 Students at a Selected School in Seremban, Negeri Sembilan.

**VENUE: BILIK PRA TONTON**

Section : Parallel Session 1

Time : 15:15 – 17:00

Chairperson : Balasandran A. Ramiah

NO	ID	FIRST AUTHOR	TITLE
1	355	Balasandran A. Ramiah	Developing Leadership Training Modules through Lesson Study: The Experiences at Institut Aminuddin Baki Ministry of Education Malaysia
2	462	Rozaili Bin Mohd Ali	Improving the quality of teacher's skills using the 4C elements through Lesson Study
3	465	Norhayati Md Darus	Lesson Study Community: Improving Teacher Competence
4	320	Wan Norhasma Binti Wan Hassan	Professional Learning Network (PLN) and Digital Practices in Teacher Education
5	79	Akbota Mamadiyar	The influence of a six-step Cognitive Academic Language Learning Approach (CALLA) on the development of self-learning and personal practice of students.
6	59	Suriani Alland Rice Oxley	Developing the Competencies of Non-Optional Visual Arts Teachers Through Professional Learning Community
7	330	Serik Zhaiyrbayev	To develop students' research skills in identifying, validating and analysing secondary data by using CRAAPTtest, FiveWs and Boolean logic strategies.

**VENUE: BILIK MESYUARAT BITARA**

Section : Parallel Session 1

Time : 15:15 – 17:00

Sub Theme : Lesson and Learning Studies in Initial Teacher Training

Chairperson : Denise Koh

NO	ID	FIRST AUTHOR	TITLE
1	405	Denise Koh	Exploring Students' Participation in Content-Language Integrated Learning (CLIL) Conducted Online
2	302	Norlela Binti A Wahid	The Effectiveness of Professional Learning Community Practices through Teacher-Sharing Sessions and PdPR Round Learning to Increase Teachers' Competency and Confidence in Digital Learning Implementation
3	307	Er Kim Hoe	Deepening Learning on Covid Situation Using Inquiry-Based Learning Model for Primary Four Chinese Language Lesson in Singapore
4	231	Chin-Yi Huang	The Effects of Storytelling as a Remedial approach on English proficiency of Junior High School Students
5	359	Renimarlina	Introducing Reflective Teaching Practice in Remote School: Teacher-Student Interaction Patterns
6	360	Renimarlina	Science Teachers' Views of Feedback in Teaching Practice Collaboratively
7	394	Refsya Aulia Fikri	Developing The Critical and Creative Thinking Skills of Prospective Biology Teachers Utilizing The Problem-Based Learning Integrated with Lesson Study During Lectures at The Covid-19

**VENUE: DEWAN SARJANA**

Section : Parallel Session 1  
Time : 15:15 – 17:00  
Sub Theme : Lesson and Learning Studies in Initial Teacher Training  
Chairperson : Kamariah Abu Bakar

NO	ID	PRESENTER	TITLE
1	414	Elenchothy A/P Davrajoo	Lesson Study in Teachers Professional Development: The Issues and Challenges in Malaysian Education Context
2	91	Sabariah Ismail	Professional Learning Communities: Implementation Strategies and Professional Practices of Lecturers
3	69	Alimakurbangaliyeva	How to Develop Students' Skill of Planning an Experiment (Explaining Variables and Formulating a Hypothesis) Through Visual Sources of Information?
4	98	Jaliya Jaidakpayeva	Lesson Study as a Form of Follow-Up Support for Teacher Professional Development Courses
5	75	Akbota Mamadiyar	Contribution of Lesson Study to the Professional Development of Teacher and to Teachers' Perception of Learning in a Kazakhstani School
6	420	Michaela	Lesson Study for School Leaders: A Model to Develop a New Learning Culture in Schools
7	101	Olteanu Lucian	Tasks assemblage, sense-making, and reasoning in algebra

**VENUE: DEWAN SHEIKH OTHMAN SARAWAK**

Section : Parallel Session 1

Time : 15:15 – 17:00

Sub Theme : Lesson and Learning Studies in Initial Teacher Training

Chairperson : Low Bee Ling

NO	ID	FIRST AUTHOR	TITLE
1	182	Low Bee Ling	Innovation in Lewis Structure Learning Through Lesson Study: Teacher Learning/Collaboration and Student Engagement
2	116	Takayoshi Sasaya	Growth Process of The Skill of Understanding Children in Japanese Lesson Studies
3	119	Zhananur	Lesson Study: Using Backward Planning to Teach Story Writing
4	130	Annemettefkarlsen	Pupil Voice in Lesson Study - A Review
5	132	Tanaka Makiko	Challenge to Integrate Theory and Practice in the Graduate School Curriculum through the Practical Development of Global Competencies
6	292	Chea Soth	Influences of Reflective Conversation During Practicum. A Case Study of Mathematics Student Teachers at Phnom Penh Teacher Education College
7	387	Aisyah Insyirah	Exploring the Effectiveness of Grouping System by Combining Students with Different Multiple Intelligences in a Group to Enhance Learning Experience Through Lesson Study

**PARALLEL SESSION 2**  
21 Sept 2022 (15:45 – 17:30)

**VENUE: MAIN DECTAR**

Section : Parallel Session 2

Time : 15:45 – 17:30

Sub Theme : Lesson or Learning Studies In Different Cultural, Subject, and Learning Contexts (Primary and Secondary Schools)

Chairperson : Suziyani Mohamed

NO	ID	FIRST AUTHOR	TITLE
1	454	Zarina Abdullah	Impact of English Reading Proficiency on Academic Performance of Secondary School Students in East Coast States of Peninsular Malaysia
2	121	Joanna C. Weaver	The Impact of Cross-Cultural Lesson Study on Teacher Learning
3	126	Claudia Mewald	Developing Assessment Literacy in Vocational Education and Training Through Attending to Student Voice in Lesson Study
4	191	Baktygul	Using the Word – Sentence – Paragraph (WSP) approach to develop Year 8 students' summary writing through reading analysis
5	137	Tan Tong Hock	Using Learning Kit As A Concept Teaching Tool For Lesson Money At Year Two Primary Students
6	217	Hazila Abdul Aziz	Learning Study (LS) in Enhancing Spelling Skills and Mastery of English Adopted Words into 'Jawi'
7	353	Sharon Dotger	Outcomes of a Working Conference for Lesson Study Use in Mathematics and Science Teacher Education

**VENUE: LOBBY A**

Section : Parallel Session 2  
Time : 15:45 – 17:30  
Sub Theme : Lesson and Learning Studies and the Facilitator  
Chairperson : Nur Atiqah Jalaludin

NO	ID	FIRST AUTHOR	TITLE
1	247	Pia-Ingrid Hoznour	Forming In-School Lesson Study Facilitators in Switzerland
2	248	Pia-Ingrid Hoznour	How Drawing Can Be an Appropriate Tool to Equip Facilitators
3	258	Prita A. Karyadi	Analysis of Students' Learning Motivation Towards Online Learning at Pahoa High School
4	259	Serly Ayu Saputri	The Implementation of Anchor Task to Encourage Student Engagement in Mathematics Learning
5	260	Widhi Irjayanto	Online Learning Trajectory of Probability through Guided Discovery
6	267	Novenda Delianti Sidauruk	The Usage of Anchor Task : Zeno's Paradoxes in Limit Function
7	271	Kihachiro Sakai	Analyse Gatekeeping of Social Studies Teacher by Use of "Transcript-Based Lesson Analysis" Method

**VENUE: LOBBY B**

Section : Parallel Session 2

Time : 15:45 – 17:30

Sub Theme : Lesson and Learning Studies and Teacher Professional Development

Chairperson : Wan Ahmad Munsif Wan Pa

NO	ID	FIRST AUTHOR	TITLE
1	354	Balasandran A. Ramiah	Getting The Most Out of Lesson Study: The Role of School Leadership Team in Sustaining Professional Learning Community in Malaysian Context
2	380	Eny Winaryati	Teachers as Educators and Learning Researchers: Through Professionalism Development in The Lesson Study Community of The Muhammadiyah School of Central Java
3	411	Aini Haziah Amirullah	Enhancing Teachers Competence and Collaborative Practice Through The Implementation of Lesson Study in the Teaching of Mathematics
4	210	Nina Helgevold	“Less is More” – Facilitating Teachers’ Professional Development Using Lesson Study
5	343	Tetsuo Kuramoto	The Perspective of Curriculum Management with Lessons Study in Japan Schools
6	404	Takahashi Miyuki	Study of Japanese Elementary and Junior High School Textbooks for Foreign Language Education-From the Perspective of Global Children's International Issues
7	445	Nurul Ishak	Strategies and Practice of Professional Learning Community (PLC) : Teacher Competency and Students Engagement in TVET Education.

**VENUE: PANGGUNG SENI**

Section : Parallel Session 2

Time : 15:45 – 17:30

Sub Theme : Lesson and Learning Studies and Teacher Professional Development

Chairperson : Bitty Ansawi

NO	ID	FIRST AUTHOR	TITLE
1	473	Bitty Ansawi	WAKID: A Lesson Study Journey In The Land Below The Wind
2	456	Peh Li Foon	Coaching Project Based Learning in The New Norm Through 'Orpa' Teacher Professional Development
3	464	Ramlah Abdul Rahim	Empowerment Culture of Implementation of Lesson Study for Professional Learning Community (PLC) to Equity School, Sabah State Education Department
4	290	Yumikoonoo	International Cooperation in Professional Development of South African Mathematics Subject Advisers on Lesson Study
5	306	Shamsina Idayu Binti Mohd Yusof	The Effectiveness of Anisko in Verifying Student's Achievement in History Lesson
6	333	Haidee P. Rosete	Guarding Against Miscommunicating A Mathematical Concept
7	342	Jongsung Kim	Doing Lesson Study about Lesson Study: Four Teacher Educators' Collaboration to Improve Their Performance as Knowledgeable Others in A Japanese Setting

**VENUE: BILIK PRA TONTON**

Section : Parallel Session 2

Time : 15:45 – 17:30

Chairperson : Teh Kim Hong

NO	ID	FIRST AUTHOR	TITLE
1	455	Teh Kim Hong	Learning to Practice Teaching Mathematics through Problem Solving via Lesson Study
2	516	Punithavili Mariappan	Unique Of Vygotsky Theory - Enhancing Cognitive Development For Inclusive Education
3	291	Sara Presutti	Does Changing Initial Teacher Education Through LS Change LS Itself? Analysis of The Relevance and Adaptations of A Lesson Study Process with Swiss Preservice Teachers
4	395	Vishali Gandhi	Assessing Student Performance through Online Game-Based Learning
5	460	Khairul Anuar	Internalizing Values In Lesson And Learning Studies: An Overview Through Teacher Professional Development Policy In Malaysia
6	478	Khairul Izad Abd Rahman	The Input Level of The Implementation of Lesson Study
7	192	Yuko Uesugi	Creating an English Teaching Team for the Intensive English Program

**VENUE: BILIK MESYUARAT BITARA**

Section : Parallel Session 2

Time : 15:45 – 17:30

Theme : Developing Professional Learning Communities: Models and Practices

Chairperson : Aliza Alias

NO	ID	FIRST AUTHOR	TITLE
1	164	Vishnu	The Idea of using STEM Books in the Professional Learning Community through Book Club Strategies
2	233	Sunaidah Abdullah	The Influence of Professional Learning Community (PLC), Administrators Support and Motivation Towards Teachers' Commitment of Secondary Schools in Sandakan District.
3	257	Mei Rianto Chandra	Application of Semantic and Syntactic Approaches to Improve Mandarin Grammar Understanding of Middle School 8th Graders at Pahoa School
4	303	Liew Yen Yen	Developing and Sustaining Professional Learning Communities with Systems Thinking: An Insider's Story
5	370	Marie Joubert	Different approaches to lesson study observations: how do they affect the quality of observations?
6	399	Chichibu Toshiya	How Japanese Schools can Develop Professional Capital through Curriculum Management
7	165	Sarah Seleznyov	International Policy Borrowing And The Case Of Japanese Lesson Study

**VENUE: DEWAN SARJANA**

Section : Parallel Session 2

Time : 15:45- 17:30

Theme : Leadership, management and policy aspects of sustainable Lesson and Learning Studies

Chairperson : Suzalin Zaini Sooria

NO	ID	FIRST AUTHOR	TITLE
1	424	Suzalin Binti Zaini Sooria	Sustainability of PLC Implementation in School During the COVID-19 Pandemic: Experience in One Secondary School in Port Dickson
2	144	Julian Bucher	A Qualitative Interview Study About General Conditions for a Successful and Sustainable Implementation of Lesson Study in German Primary Schools
3	207	Cheng Chi Keung Eric	Enhancing School Intellectual Capital through Lesson Study
4	250	Pete Dudley	Development, Implementation and Publication of Oracy Curriculum through Research Lesson Studies (RLS) Made Public Across Schools, Systems and Countries: Potential for Teacher Research Informed Policy
5	332	Yukari Hashimoto	Educational Practices for Multicultural Conviviality and Teachers' Attitude Reform: What do School Administrators Consider as Sustainable Organizational Management?
6	441	Tiong, Ngee Derk	The Unseen Role of School Leadership, Management and Policy as Shapers of Teacher Learning: As Operative in Collaborative Discussions by Two Professional Learning Communities (PLCS) in Malaysian Schools
7	467	Salmiah Md Salleh	Inquiry-Based Teaching Of The Division Of Fractions Among Mathematics Primary Teachers

**VENUE: DEWAN SHEIKH OTHMAN SARAWAK**

Section : Parallel Session 2

Time : 15:45- 17:30

Sub Theme : Creating Knowledge in Practice: A Sustaining Effort at Creating a Life-Long Learning Experience

Chairperson : Ku Suhaila Ku Johari

NO	ID	FIRST AUTHOR	TITLE
1	94	Juliana Binti Shaharum	Boys Are Brilliant Writers!: The Effectiveness of Mobile Learning Technologies in Teaching Writing to Student Athletes
2	136	Alikulova Xeniya	Investigating the Development of Students Autonomous Learning Skills in the Context of Online Learning
3	223	Fauzan Ahdan Nusantara	Extinction Crisis of Students' Voices Superseded by Correct Answers in Science Lesson
4	284	Desmond Sandum	V.E.R.S.A.T.I.L.E Lesson Study in GPM: Voluminous Experience and Rounded Skills of Affective Teachers in the Learning Environment.
5	289	Nur Aimi Binti Alias	The Use of Doodle Sketch and Mnemonics to Improve Year Two Pupils' English Spelling: Is It Effective?
6	310	Hazrin Hanim Binti Rani	'Turning Data into Insights' – Unlocking and Identifying 'Champions' & 'Resistors' in Corporate training
7	216	Juliza Jalalludin	Learning Study in Teaching Jawi Writing Proficiency

## PARALLEL SESSION 3

22 Sept 2022 (8:30 – 10:00)

### VENUE: MAIN DECTAR

Section : Parallel Session 3

Time : 8:30 – 10:00

Theme : Creating knowledge in practice: Lesson and Learning Studies in STEM

Chairperson : Jeremy Nadler

NO	ID	FIRST AUTHOR	TITLE
1	67	Jeremy Nadler	Advancing the Connections of Essential Skills and Interdisciplinary Teaching with Teacher-Candidates
2	145	Jiajia Li	Developing Maker Mindsets Assessment using an Integrated Lesson Study Model
3	269	Tessie Anak Rijem	Gamified Card Game to Enhance The Mastery of Mathematics Basic Terms in Dual Language Programme among Year-2 Pupils in SK Sungai Buloh, Selangau.
4	298	Chia Chew Ping	Virtual and Blended Learning in Pre-Laboratory Chemical Equilibrium Class
5	305	Erwina Oktaviany	Collaborating in STEM: The Implementation of Lesson Study in the STEM Learning on Science Class
6	73	Wilfried Swoboda	Immergence and Variation: Two Learning Theories at The Intersection of Perspective and Whole.

**VENUE: LOBBY A**

Section : Parallel Session 3

Time : 8:30 – 10:00

Sub Theme : Research Methodology And Theoretical Underpinnings Of Lesson And Learning Studies

Chairperson : Nur Zarina Mohamad

NO	ID	FIRST AUTHOR	TITLE
1	515	Nur Zarina Mohamad	Tapping into pupil's Speaking Motivation in Classroom discussions: A question of topic selection
2	234	Gereltuya	Results of Transcript Based Lesson Analysis Used to Improve University Seminar Courses
3	184	Koki Kuratomi	Understanding of Electricity Concepts among Junior High School Students in Japan
4	133	Seiki Fujihara	Developing Decision-Making Skills in Junior High School Science in Japan
5	179	Klara Kager	A Shared Conceptual Model for Lesson Study: Capturing Inputs, Processes, and Outcomes
6	218	Yenni Rozimela	The Practice of Reflection in and on Action and its Impact on The Teachers' Lesson Design (Video)

**VENUE: LOBBY B**

Section : Parallel Session 3

Time : 8:30 – 10:00

Sub Theme : Creating Knowledge in Practice: Lesson and Learning Studies in Higher Education

Chairperson : Bity Salwana Alias

NO	ID	FIRST AUTHOR	TITLE
1	518	Bity Salwana Alias	Challenges and Strategies of Classroom Management by Special education Teachers for students with learning Problems.
2	432	Sri Umi Mintarti	Cone of Experience to Achieve Independent Learning in Economic Learning: Lesson Study Perspective
3	466	Faridah Binti Musa	Overcoming the Challenges in English Language Communication During Accountancy Undergraduate Internship
4	174	Kumuthinijagabalan	The Effects of Collaborative Blended Learning (CBR) Program on Students' Reading Comprehension
5	415	Herawati Susilo	Promoting Prospective Biology Teachers' Creativity, Communication, and Collaboration Skills Through Remad-Cocoper
6	122	Zamzagul Tuitina	Lesson Study Cluster: models and practices

**VENUE: PANGGUNG SENI**

Section : Parallel Session 3

Time : 8:30 – 10:00

Theme : Creating Knowledge in Practice: Lesson and Learning Studies in Special Education

Chairperson : Azlina Abdul Aziz

NO	ID	FIRST AUTHOR	TITLE
1	319	Melvina	A Review: Making sense of Indonesian lesson study features and its research trends
2	232	Azlina Abdul Aziz	Harnessing Dramatic Creativity: A Lesson Study on Enhancing Creativity in A Digital Puppetry Project
3	74	Wilfried Swoboda	Theory of Immersion and Phenomenography in Inclusive Settings.
4	389	Claudia Mewald	Lesson Study as Practitioner Research
5	457	Kala Daevi A/P Manikum	The Use of Economical Token Techniques in Modifying Hyperactive Behavior Problems for Autism Students in Secondary School
6	176	Kumuthinijagabalan	Improving Students' Collaborative Writing Skills Using Collaborate, Reflect and Report Technique (CRR Technique)

**VENUE: BILIK MESYUARAT BITARA**

Section : Symposium  
Time : 8:30 – 10:00  
Chairperson : Bity Salwana

<b>ID</b>	<b>Topic</b>	<b>Presenter</b>
202	<p>Learning Studies as Teacher Professional Development and Enhancing Students' Learning Amongst Kelas Al-Quran and Fardhu Ain (KAFA) Teachers in the state of Negeri Sembilan, Malaysia</p> <p>PIC: Nor Azwahanum Nor Shaid Rapporteur: Jong Oi Sen Suriani Alland Rice Oxley</p>	<ol style="list-style-type: none"><li>1. Hasnah Abdullah (IPGM Kampus Raja Melewar, Malaysia)</li><li>2. Fairuzzah Harun (IPGM Kampus Raja Melewar, Malaysia)</li><li>3. Nurul hidayah Alias (IPGM Kampus Raja Melewar, Malaysia)</li><li>4. Lelawati Mazeli (JHEAINS, Malaysia)</li><li>5. Mohd Zaidi Ramli (JHEAINS, Malaysia)</li><li>6. Siti Nur Fikrah Mohd Jasri, (JHEAINS, Malaysia)</li></ol>

**VENUE: DEWAN SARJANA**

Section : Symposium

Time : 8:30 – 10:00

Chairperson : Maslawati Mohamad

<b>ID</b>	<b>Topic</b>	<b>Presenter</b>
392	Conditions, that provide sustainable change of teachers' practices in educational organizations: The role of the Center of Excellence in this process  PIC: Syar Meeze Mohd Rashid Rapporteur: Harris Bin Suffian @ Bali Ramlah Binti Abdul Rahim	1. Elvira Rakhmail (Center of Excellence, Kazakhstan) 2. Yuliya Melnikova (Center of Excellence, Kazakhstan) 3. Toshiya Chichibu (National Institute for Educational Policy Research, Japan) 4. Pete Dudley (University of Cambridge, UK)

**VENUE: DEWAN SHEIKH OTHMAN SARAWAK**

Section : Symposium

Time : 8:30 – 10:00

Chairperson : Fathiyah Kamaruzaman

<b>ID</b>	<b>Topic</b>	<b>Presenter</b>
325	Understanding Models of Observation in Bhutan, Mexico and Namibia, and Learning from Japan to Maximize Teacher Learning in Lesson Observation  PIC: Nurul Atiqah Jalaluddin Rapporteur: Nancy Ng Yut Kuan Sylvia Miting Pakoi	1. Pauline Anne Therese Mangulabnan (National Institute of Technology, Fukui College, Japan) 2. Yoshiko Hambara (University of Fukui, Japan) 3. Damcho Wangchuk (University of Fukui, Japan)

## PARALLEL SESSION 4

22 Sept 2022 (10:30 – 11:45)

### VENUE: MAIN DECTAR

Section : Parallel Session 4

Time : 10:30 – 11:45

Sub Theme : Creating knowledge in practice: Lesson and Learning Studies in STEM

Chairperson : Azlina Abdul Aziz

NO	ID	FIRST AUTHOR	TITLE
1	412	Norazura Abdullah	Using Lesson Study to introduce STEM Lessons Emphasising Design Thinking Principle amongst Teacher Candidates in Brunei
2	422	Sachiko Tosa	Effectiveness of a professional development program for high-school science teachers using avatar role-playing
3	109	Arman Imansharipova	Professional Community of STEM Educators as a School Development Management
4	300	Bakyt	Developing students' skills to justify their decisions through the implementation of research tasks
5	60	Zhanarabdikerova	Development of reasoning skills using STEM educational methods

**VENUE: LOBBY A**

Section : Parallel Session 4

Time : 10:30 – 11:45

Theme : Research Methodology And Theoretical Underpinnings Of Lesson And Learning Studies

Chairperson : Faridah Hj Mydin Kutty

NO	ID	NAME	TITLE
1	187	Kazuki Tao	Students' Motivation to Learn in High School Science in Japan
2	243	Irvan Siswanto Lubis	The Effect of Independent Learning and Mathematical Disposition on Mathematical Problem-Solving Ability in Grade 7 Algebra
3	281	Klara Kager	A Systematic Review of Transparency in Lesson Study: How Do We Report How Teachers Observe and Reflect Together?
4	471	Nancy Ng Yut Kuan	The Effectiveness Of Lesson Study Implementation In Teaching And Learning Mathematics In Senior High School In The State Of Sabah
5	99	Jackline Mumbi Matu	Biology Interdisciplinary Teaching Contribution In Physics For Secondary School: Ionizing Radiation Cellular Effect; Lesson Experience And An Action Research.

**VENUE: LOBBY B**

Section : Parallel Session 4

Time : 10:30 – 11:45

Sub Theme : Creating Knowledge in Practice: A Sustaining Effort at Creating a Life-Long Learning Experience

Chairperson : Kamariah Abu Bakar

NO	ID	FIRST AUTHOR	TITLE
1	386	Son Sokun	Does Working in Collaboration Support Student Teachers' Remembering? A Comparison of Collaboration and Individual Learning.
2	431	Nagima Sarsenbayeva	Improving Writing Skills Through Project-Based Learning
3	447	Warabhorn Preechaporn	Malaysian Teacher's Perspective on Professional Learning Community (PLC)
4	481	Sylvia Miting Pakoi	Coaching On Air: Enhancing Teachers Practices Facing the Vuca World
5	497	JÄrgen Teichter	Information, learning and knowledge, pieced together as a practical approach in the context of Variation Theory.

**VENUE: PANGGUNG SENI**

Section : Parallel Session 4

Time : 10:30 – 11:45

Chairperson : Siti Nur Diyana Mahmud

NO	ID	FIRST AUTHOR	TITLE
1	521	Siti Nur Diyana Mahmud	Using Gibbs' Reflective Cycle to explore pre-service teachers challenges in conducting online macro teaching
2	188	Julien Buchard	Lesson Study and Self-Esteem
3	225	Nagimasarsenbaeva	Using Flipped Learning to Increase Learners' Motivation and Self-Regulation in The English Language Classes
4	236	Yuko Uesugi	Implementation of CLIL in SDG-Targeted Communicative English Class
5	252	Norlia Mat Nor	Professional Learning Community (PLC) Practices Among Teachers Can Improve Science Teachers 'Pedagogical Skills and Student Excellence in Secondary Schools of School Transformation Program 2025 (TS25)

**VENUE: BILIK MESYUARAT BITARA**

Section : Parallel Session 4

Time : 10:30- 11:45

Sub Theme : Lesson and Learning Studies and the Facilitator

Chairperson : Nor Azwahanum Nor Shaid

NO	ID	NAME	TITLE
1	381	Nina Sømme Kvarstein	How Can the Facilitator Contribute to The Teachers' Exploratory Conversation Related to the Curriculum in Physical Education (PE)?
2	384	Gao Huixin	Effect of "Student-Lecturing" Teaching Model on Eighth Students' Attitude Towards Mathematics in Mianyang, China
3	367	Haizan Zakaria	PLC as One of the Most Effective Coaching Tools for School Leaders
4	70	John Mynott	Analysing and Facilitating Collaboration
5	80	John Mynott	The Invisible Leader: Facilitation in Lesson Study

**VENUE: DEWAN SARJANA**

Section : Parallel Session 4

Time : 10:30 – 11:45

Theme : Lesson and Learning Studies in Initial Teacher Training

Chairperson : Syar Meeze Mohd Rashid

NO	ID	FIRST AUTHOR	TITLE
1	338	Da Bou	Teacher Educators' Conception and Difficulties in Doing Action Research : Case Study at Battambang Teacher Education College (BTEC)
2	363	Pauline Anne Therese Mangulabnan	Challenging Teacher Written Practice Records : Case of Saguday Teachers' Journey Towards Practice Records Writing
3	374	Fitriati	Improving Pre-Service Teachers' Lesson Planning Skill Through Lesson Study Within School University Partnership Program
4	486	Nagalaxmy A/P Markandan	Strengthen interdisciplinary approach by Lesson Study Cycle in STEM Education
5	378	Natalyakim	Facilitation as an effective technology for organizing student project activities

**VENUE: DEWAN SHEIKH OTHMAN SARAWAK**

Section : Parallel session 4

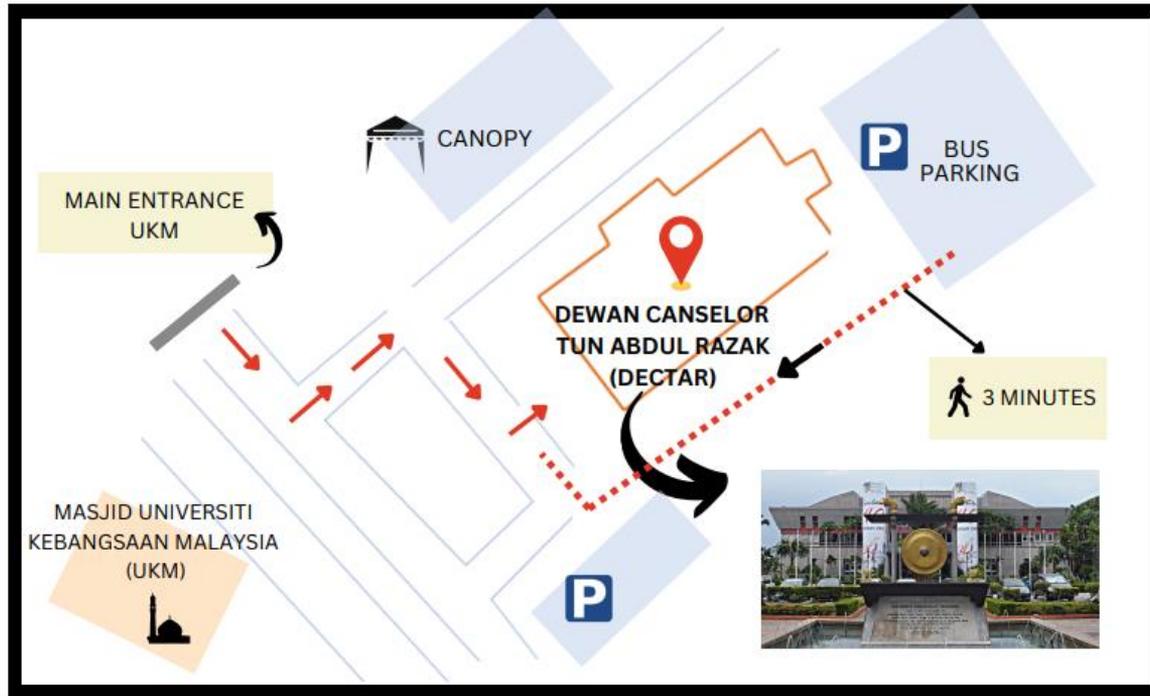
Time : 10:30– 11:45

Theme : Lesson and Learning Studies in initial teacher training

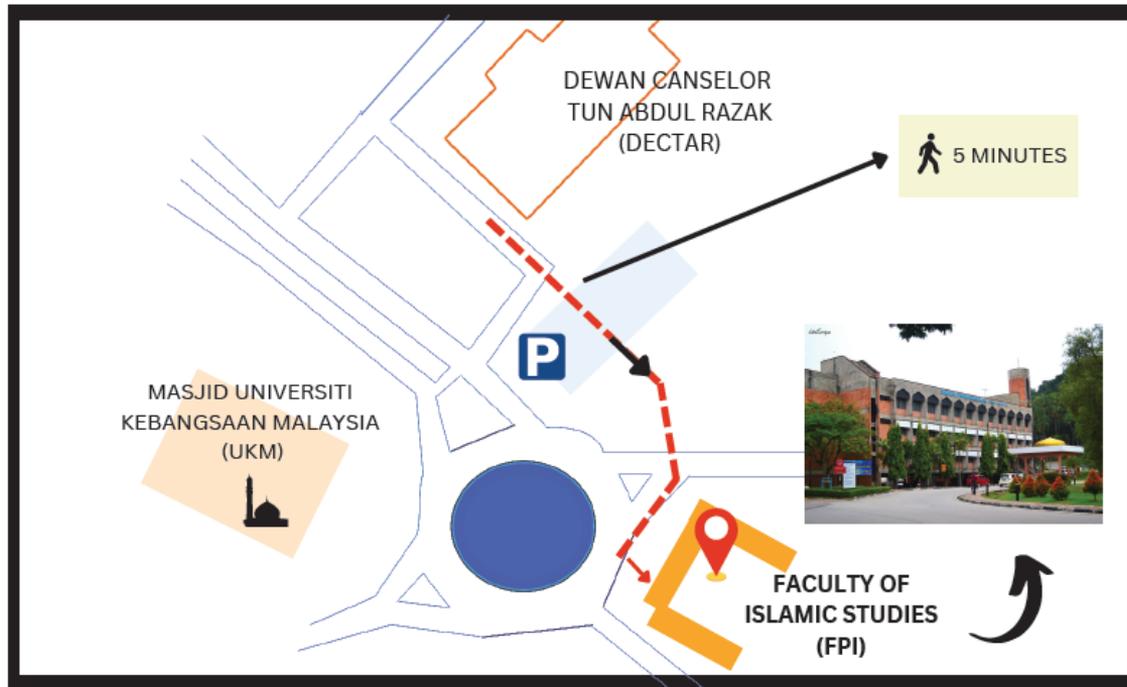
Chairperson : Mohamad Zuber Abd Majid

NO	ID	FIRST AUTHOR	TITLE
1	45	Shanty Sai'en	The Needs Analysis of Learning Inventive Problem-Solving Skill in Project Based Learning for RBT Students in IPGKPT
2	470	Farah Ilyani Zakaria	Lesson Study Approach During Practicum in Developing Pre-Service Teachers' Pck: A Preliminary Study
3	203	Nadia Nazreen Mohd Nasir	Learning Study (LS) on Sirah Subject Amongst Year 4 pupils at a Selected Primary School in Port Dickson, Negeri Sembilan, Malaysia
4	220	Nurul Hidayah Entan	Learning Study (LS) a Tool to Enhance Ability and Participation in an Adab Subject: A case at a Selected Sekolah Agama Rakyat in Seremban, Negeri Sembilan.
5	230	Manoriza Abdul Malek	Learning Study: A Tool for Professional Development and Innovation in Extra Curriculum Course at a Selected Teacher Training Institute in Malaysia

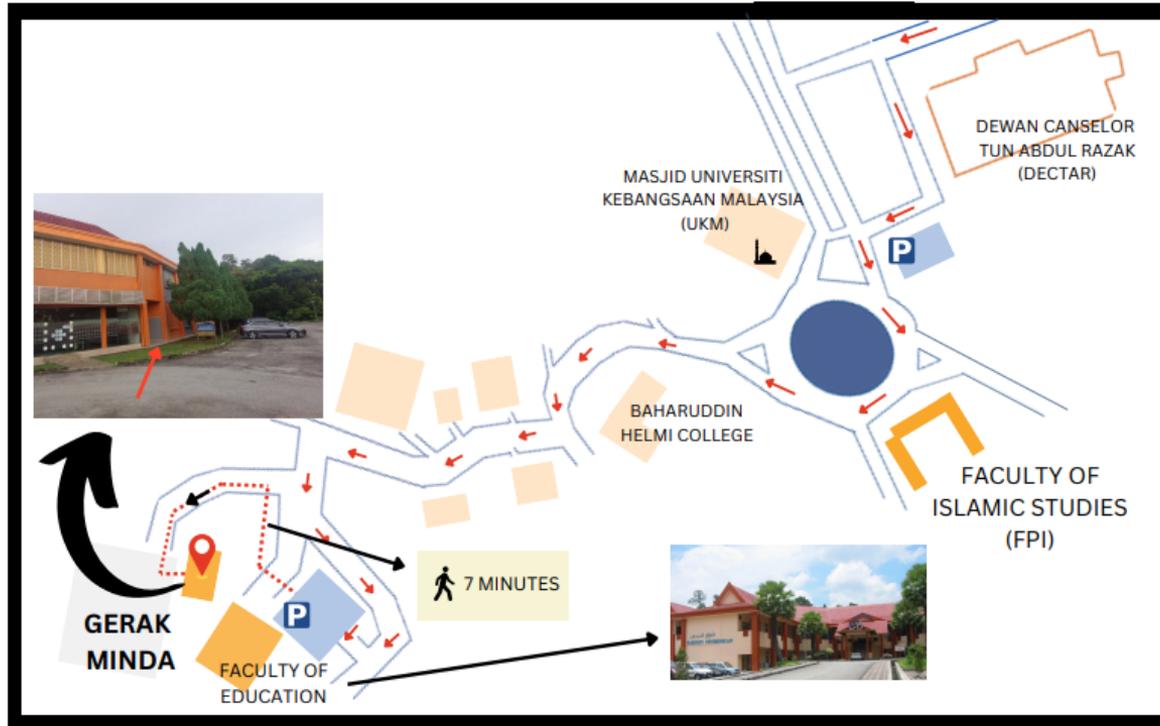
## LOCATION (DECTAR)



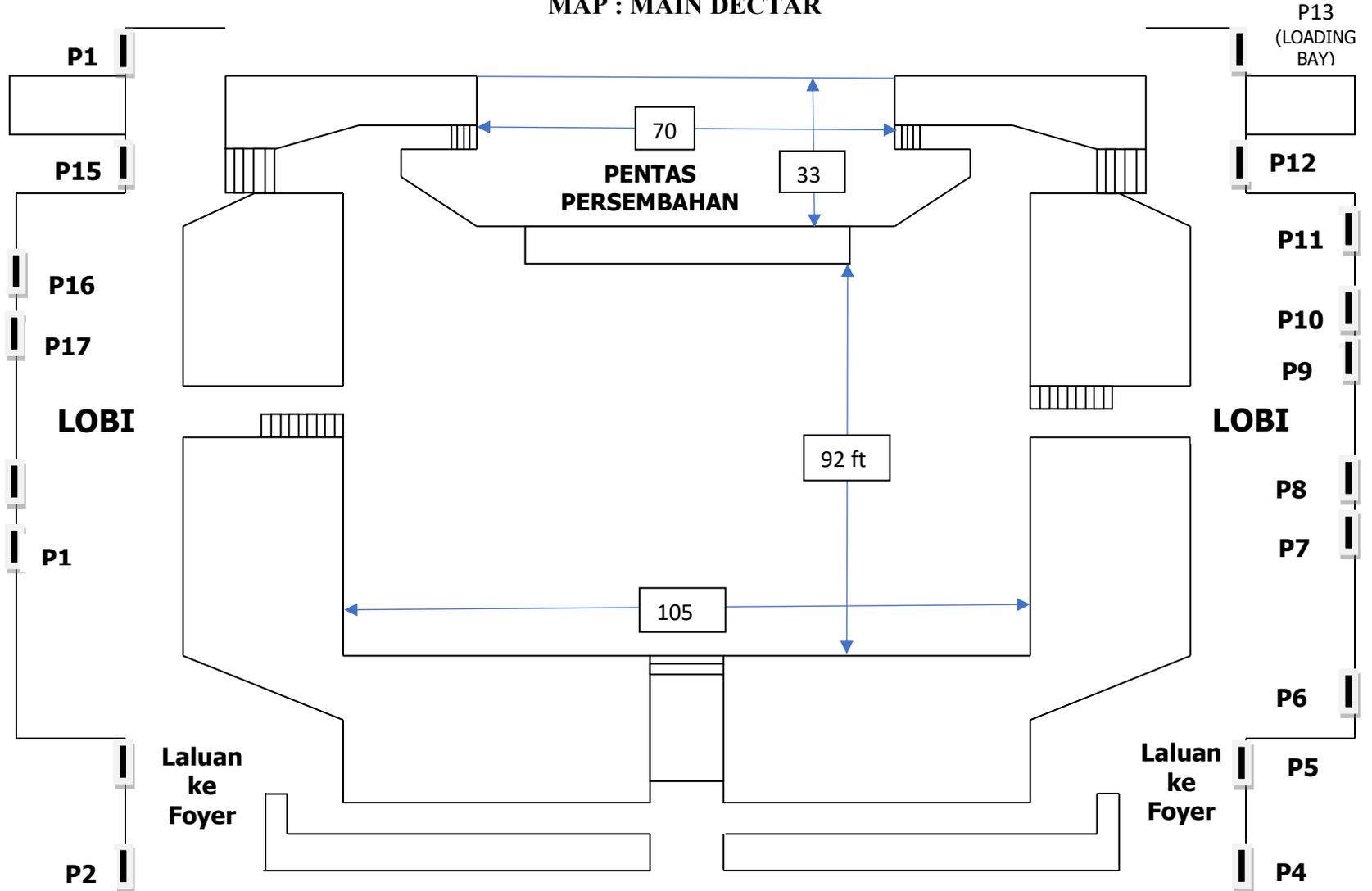
## LOCATION (DECTAR TO FACULTY OF ISLAMIC STUDIES)



# LOCATION (DECTAR TO FACULTY OF EDUCATION)



# MAP : MAIN DECTAR



**ABSTRACTS:  
PAPER  
PRESENTATIONS**

### The Needs Analysis of Learning Inventive Problem-Solving Skill in Project Based Learning for RBT students in IPGKPT

Shanty Sai'en,  
Romy Abd Kadir,

Malaysia

#### **Keywords**

STEM, Theory of Inventive Problem Solving, Project based learning, RBT

The Malaysian Ministry of Education has made it a priority to integrate the STEM body of knowledge into the mainstream education curriculum, however one of the obstacles is to develop student problem-solving skills. Hence, MOE introducing Theory of Inventive Problem Solving (TRIZ) in form two syllabus for Reka Bentuk dan Teknologi student started in 2018 to aid and complement the student's development of a technological project and design skills. Undeniably, project-based learning which is the foundation of modern educational technology in teaching is well-suited with TRIZ. This study was undertaken to measure the level of inventive problem solving skills, identify the needs of learning inventive problem solving skills and the needs of developing an Inventive problem solving module. Using a questionnaire, the study sampled 135 students from Jabatan Pendidikan Teknik dan Vokasional, Institut Pendidikan Guru Kampus Pendidikan Teknik, Negeri Sembilan. The majority of students failed to define an imaginative problem or the core cause of a problem, according to the findings. They are also unable to state the aims and goals, and as a result, they are unable to address the problem. As a result, the students decided to enlist the help of the Inventive Problem Solving Module, which is now in development.

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### **Collaboration of History and Computer Science teachers in application of concept-based learning**

Kanatbek  
Saugabekov,

Kazakhstan

#### **Keywords**

Concept,  
collaboration,  
integration

The research suggests that the teacher professional development and student learning in terms of History knowledge and Computer Science skills is related to the use of concept-based learning. This study claims that use of concept-based strategies well-formed in History subject should be included among those factors that lead to an effective teaching of Computer Science. Results from a year-long collaboration between History teacher and Computer science teachers indicate that the concepts can serve as a positive factor for the students' motivation in programming, in the most complex task of Computer Science teaching mostly incoherent for middle school students. Although Computer science teachers have had quite different attitudes towards the selection of appropriate concepts to apply while joint planning, the results suggest that the integration with History in terms of concept-based teaching may have considerable impact on teacher professional development and student performance.

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### **Developing the Competencies of Non-Optional Visual Arts Teachers Through Professional Learning Community**

Suriani Oxley,

Malaysia

#### **Keywords**

Competencies,  
Visual arts,  
Teachers,  
Learning  
community

The findings of a questionnaire showed that 37 teachers out of 66 teachers who taught visual arts subjects in Labuan were not Visual Arts option teachers. This finding is in line with the findings of the Board of Inspectors, who said that 76% of Visual Arts teachers in Malaysia are non-optionist. There is no denying that the effectiveness of teaching and learning sessions is greatly influenced by the background of teachers who are optionist or non-optionist. In relation to that, the Social Science Unit has implemented a special programme to improve the knowledge and skills of visual arts teachers who are not an option through Professional Learning Community (PLC). For this program, a total of six PLC strategies have been implemented, namely: Reflective

Dialogue, De-Privatization Of Practice, Collective Focus On Student Learning, Collaboration, and Shared Norms & Values strategies. The focus of PLC activities is to help improve the knowledge and skills of the teachers so that they can implement the teaching and learning of visual arts subjects more effectively and confidently. Among the activities carried out were dialogue sessions, curriculum dissection, skills workshops, action research, best practises sharing, and bench marking. Analysis of interview findings, classroom observations, and assessment record documents indicate that the PLC strategy has helped non-visual arts option teachers be able to implement the teaching and learning of these subjects effectively.

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### **Development of reasoning skills using STEM educational methods**

Zhanarabdikerova  
,Gulnur  
Kenenbayeva,  
Tleubekova  
Lenura  
Kazakhstan

The study examines the extent to which senior teachers influence the STEM approach to the learning process, as well as the development of reasoning skills. Connections of physics, mathematics and English are defined. There are several ways to develop effective reasoning skills. Common to the object of study The results were taken from 10 classes. As a result of the study, it was decided to develop joint research tasks that combine disciplines.

**Keywords**  
Reasoning skills,  
STEM

Nessibeli,  
Almagul

Kazakhstan

**Keywords**

Critical thinking  
skills,  
Differentiation,  
Mathematics  
teachers

This research is based on classroom research with a group of science and mathematics teachers from the NIS IB in Nur-Sultan. The study arose from the analysis of the summative assessment on criterion A received from students. The results of the analysis showed that students have difficulties in solving problems and interpreting information in unfamiliar situations. It is important to use students' critical thinking skills in performing these tasks. The use of critical thinking skills to solve problems in chemistry, interpreting information, evaluating and improving the experiment, as well as reflecting on scientific solutions and the impact of science in society. It is important to take into account the individual needs of students in the development of critical thinking skills, so the use of differentiation in the learning process is carried out by creating a positive learning environment for their personal development. The methodology used was case study, seating map, time line methods. Students were interviewed about the strengths and weaknesses of classroom learning after each lesson. The next lesson was planned considering both teachers and students' inputs and opinions. The study consisted of 3 cycles, which comprised training materials on stoichiometric calculations and separation methods as part of the unit quantitative chemistry. The results evidence an academic progress reflected in the average grade of the class in chemistry from 4.54 to 5.27. The differentiation methods used contributed to develop students' critical thinking skills and increased the professional competence of the young teacher conducting the research.

## Advancing the Connections of Essential Skills and Interdisciplinary Teaching with Teacher-Candidates

Jeremy Nadler,  
Gabriel Matney,  
Joanna Weaver,  
Nancy Patterson,  
Kati Solymosi,  
Bree  
Rosenburger

Bowling Green  
State University,  
United States

### Keywords

Teacher  
Candidate LS,  
Generative  
Dialogue,  
Essential  
Skillset, Young  
Adulthood

An interdisciplinary Lesson Study (LS) team of teacher educators from Bowling Green State University recently engaged third-year teacher-candidates (TCs) in a LS cycle focused on the high leverage practice of leading a discussion. Two sessions were conducted, allowing TCs to participate in a generative dialogue within interdisciplinary small groups. Two Lesson Study research questions included: 1. How does generative dialogue among teacher-candidates provide an opportunity to share ideas about preparing high school graduates entering the world of young adulthood? 2. How do teacher-candidates perceive their impact as teachers in preparing their students to enter young adulthood? The methodology consisted of co-creating a lesson plan, facilitating interdisciplinary small groups, recording and producing transcripts of small group sessions, and analyzing and coding data for emerging themes. An inductive analysis approach was used, and the following themes emerged pertaining to the essential skills and knowledge base TCs perceived as important in preparing students for young adulthood: (a) civic competence, (b) problem solving, and (c) interdisciplinary connections. These themes helped determine whether TCs produced generative dialogue within the small group sessions. The sub-theme of Creating knowledge and Practice in Higher Ed connects directly to the significance of practice and relevance. Therefore, the presentation will highlight the planning, implementation, and results of a lesson study cycle. In addition, the TCs engagement in interdisciplinary generative dialogue in small groups will be discussed because it allowed for rich conversation regarding how disciplines interact and connect in preparing high school graduates for young adulthood.

### **How To Develop Students' Skill Of Planning An Experiment (Explaining Variables And Formulating A Hypothesis) Through Visual Sources Of Information?**

Alimakurbangali  
yeva

Kazakhstan

**Keywords**  
Planning,  
Experiment,  
Visual

This study is based on a classroom study with a group of science, mathematics and language teachers from NIS IB in Nur-Sultan. The study began with a discussion of some questions related to students' experimental planning skills, a development of teaching materials to improve this skill, some classroom activities, and reflections about discussions in Google Meet and Google Classroom. The purpose of this study was: "How to develop students' skills in planning experiments using various visual data?". The relevance of the study lies in the use of various visual data for the development of critical thinking, experimental planning skills and research skills of students. Therefore, reverse thinking strategies are used for online learning and traditional learning (offline) to determine the importance and effectiveness of research. Since development work is carried out in experimental disciplines such as physics, biology, chemistry, it requires research of problems, hypotheses, determination of variables, development of methods, data collection, analysis and analysis of results. Accordingly, this work explored strategies for developing experiment planning skills using virtual labs, experiments, worksheets, or videos. In conclusion, it should be noted that the study used the strategy of "recollection", analysis of the students' assimilation of knowledge through level tasks, checklists with different instructions.

### **Analysing and Facilitating Collaboration**

John Mynott,  
Stephanie  
O'Reilly

University of

Aim A growing amount of Lesson Study research is considering facilitation and the role of facilitators in Lesson Study cycles (Lee Bae et al, 2016; Mynott, 2019; Mynott and Zimatore, 2021; Schipper et al, 2021). By looking specifically at facilitation of collaboration it is

Aberdeen,  
United Kingdom

**Keywords**  
Facilitation,  
Collaboration,  
Improving  
Lesson Study

possible to explore how the existing knowledge of collaboration can aid facilitators to explore and consider their actions as they work with participants in Lesson Study cycles. Methodology Mynott and O'Reilly (2022) responded to Robutti et al (2016) question and compiled a collaboration matrix drawing on the small-scale research from Lesson Study publications. During a digital Lesson Study undertaken in Scotland in 2021, two facilitators utilised this matrix to review meetings throughout the Lesson Study cycle. Findings Through analysis of recordings of meetings, their transcripts and field notes by the facilitators, key themes emerged that further our understanding of facilitation. These themes were: individual boundaries, managing inequities, utilising shared tools, employing clear summaries and being a versatile facilitator. Significance Each of these key themes builds on both the theoretical knowledge of collaboration and facilitation through showing that the ideas contained in Lesson Study research can provide theoretical underpinnings which can be utilised in practice to further advance our shared understanding. Relevance to conference strand This research is relevant to the facilitation strand as it focuses on developing the theoretical and practical knowledge of facilitation in Lesson Study

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### **Immergence and Variation: two learning theories at the intersection of perspective and whole.**

Wilfried  
Swoboda

Board of  
Education  
Vienna, Austria

**Keywords**  
Theory of  
Immergence,  
Variation  
Theory,

The paper analyses two theories of learning, the Theory of Immergence and the Variation Theory, in the context of perspective and whole, and aims to outline pathways for teaching practice. The author defined the term immergence in his basic pedagogical research as the immersion movement in a state of conscious thought. This kind of focused awareness is the precondition for the experience of mental immersion, of involved thinking. The Theory of Immergence as a didactic model relinquishes the differing, whilst not letting it become unified; it enters into Equivalent equilibrium without objectifying or forming a totality. Immergent

pedagogical  
basic research

learning emphasises the Between: the non-measurable parts of the cognitive, the contingency of the subjective as ambiguity and plurality, and the engagement with the present. The Variation Theory takes an object of learning as a starting point and identifies necessary conditions for the process of learning. In this process, those aspects of the object that are perceived simultaneously are organised in a strong focal awareness in relation to a particular critical property. Variation in learning emphasises in the part-whole relationship: the object of learning refers to the properties and parts as well as their relationships to each other and to the whole. In pedagogical action, immergence requires an opportunity within space and time de-limitations - the creation of zones of immergence in everyday school life. For variation, learning situations must be created in which the learners subsequently recognise differences and similarities of an object of learning

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### **Theory of Immergence and Phenomenography in Inclusive Settings**

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**Keywords**  
Theory of  
Immergence,  
Variation  
Theory,  
Inclusion,  
Special  
Education,  
Aesthetic  
education

The article consists of a combination of three components: the presentation of the Theory of Immergence developed by the author and an ensuing example of pedagogical aesthetic practice are contrasted with the Variation Theory. The Theory of Immergence takes a position between maieutics and outcome focused learning, it covers a learning in the movement of mental immersion. Through turning to the other learning moves into a contingent relationship, into a pedagogy of needing one another. The Variation Theory has its basis in phenomenography, which deals with the different ways in which people experience the same object. It is important to have a focussed structure of consciousness that includes the learners' previous experiences in order to adopt a different way of viewing. In the school project Resonance Spaces, learners from three Vienna schools completed six workshops at the Museum of Modern Art Vienna (mumok) and were accompanied in their

activities by an art photographer. The three classes all had special settings: an inclusive regular class from the primary level, an inclusive learning group with an alternative curriculum and a secondary class with pupils from socially vulnerable backgrounds. The aim was to capture moments of thought-structural immersive absorption opened up within an aesthetic experience. The research consists of a triangulation of (1) the teachers' memory logs, (2) image analysis of the photographs and (3) notes from the reflection interviews. Aspects of the Theory of Immersion were marked and related to the significances, the resulting contexts are contrasted with issues of Variation Theory.

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### **Contribution of Lesson Study to the professional development of teacher and to teachers' perception of learning in a Kazakhstani school**

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Kazakhstan

#### **Keywords**

Lesson study,  
Professional  
development,  
Teacher,  
Perception  
learning

This research will investigate the teachers' attitude towards lesson study as a process and the teachers' perspectives about the influence of lesson study on their professional development and on their perceptions about student learning. A mixed method approach including the Likert scale questionnaire, semi-structured interviews and the written reflective reports of the teachers were used to elicit the data from the 37 teachers, participated in the lesson study project in one secondary school in Kazakhstan. The information retrieved from the teachers' reflective reports was used to compare and confirm the data elicited from the other two data collection tools. Teachers were questioned to identify any improvement in their teaching practice and whether they had changed their perception about the student learning process. The outcome revealed that all the teachers agreed that lesson study had an impact on their development of teaching practice. Teachers built an interpersonal and professional connection with each other which had a positive impact on collaborative work. Lesson study allowed to speak out about the educational issues that teachers are encountering during the lessons and jointly investigate them and to find the

possible solutions within the classroom framework. Moreover, teachers changed their perceptions about student learning by realising the complex notion of the learning process. However, there were several obstacles in implementation the whole process of lesson study which require time to further resolve. All the teachers suggested lesson study as an approach which can yield a positive result but which demands specific allocated time to implement.

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**The influence of a six-step Cognitive Academic Language Learning Approach (CALLA) on the development of self-learning and personal practice of students.**

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Gulmira  
Bekenova

Kazakhstan

**Keywords**  
Cognitive,  
Academic  
language  
learning  
approach, self-  
learning,  
Personal  
practice, Student

The primary plan of Lesson Study was to measure the influence of instruction of strategies on students who are acquiring English as a second language of learning. It aims to determine the effectiveness of applying Cognitive Academic language learning approach (CALLA) in enhancing language learning proficiency through the cycles of teachers' planning together, conducting lessons, observing and reflecting. To test the hypothesis that students' performance in the lessons will improve the study used 2 cycles of Lesson Study approach and interviewed the research students. The interviews were conducted at the beginning of the research to explain students the process and answer the questions of participants while the final interview aimed to identify the participants' experiences and feelings about the work done. The results showed the improvement in all four skills and increase of students' responsibility and motivation in learning. Our findings indicate that productive learning process takes place not only with different strategies, but also through the implementation of strategy instruction and promotion of learners' learning awareness. However, despite students demonstrated the improvement in their final term performances, there were students who were unwilling to carry out the assignments because of their personal reasons. This fact might become a topic for further

investigation of separate students' behaviour in different instructional methods.

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### **The Invisible Leader: Facilitation in Lesson Study**

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#### **Keywords**

Leadership,  
Relationship,  
facilitation,  
communication,  
authentic

Developing the body of knowledge about how facilitators act and engage with participants is essential to developing Lesson Study (LS) facilitation. This research reveals how two LS facilitators from the United Kingdom and the United States support and lead cycles. We used the Standards, Assessment, Instruction & Intervention, Leadership, and Sustainability (SAILS) framework (Hasbrouck & Denton, 2005; Hasbrouck & Michel, 2022) to explore and thematically code reflective semi-structured interviews between two LS facilitators. We coded and organized themes to explore the actions, processes, tools, and behaviours facilitators use. Standards and Assessment formed key boundary features of LS facilitation. Leadership, how the facilitator intervened and supported participants to sustain LS, was a salient theme. Skills, tools, and processes that the facilitator used came through and build on existing knowledge of LS facilitators (de Vries & Uffen, 2021; Morango & Grigioni Baur, 2021; Mynott, 2018). A fundamental finding is that the facilitator is a leader who needs to be present enough to navigate discussions, yet invisible enough to not get in the way of participant learning. Deepening our knowledge of what the facilitator can do to increase the sustainability of participant learning can help support future LS teams. How a facilitator thinks about aspects of their work in advance, which tools can be used during conversations, and how they summarise learning are all important aspects of their work. This research shares practical knowledge about how facilitators work and lead within LS cycles.

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**How important is the role of Lesson study in solving the problems of improving the activities of young professionals in the learning and learning process?**

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ayeve

Kazakhstan

**Keywords**

Lesson study,  
Activities,  
Young  
professionals

The NIS program requires leadership skills from a teacher who must take the initiative to improve practice: make strategic decisions together with colleagues to make changes, contribute to the creation and dissemination of knowledge, take the initiative to improve their own practice. Analyzing the work of school teachers in research activities in previous years, we saw that teachers began to be involved in this work from year to year, but most of the teachers did not show interest in such a pedagogical approach. And we were faced with the question "How to interest teachers in improving their teaching activities to improve practice and develop leadership skills?" Our research will focus on the participation of teachers in the research activities of the creative team with the prospect of each young teacher creating his own group in the future to train other teachers, which will be an indicator of the development of teacher leadership qualities. Therefore, our task as researchers within the framework of this study is to study the activities of individual teachers of our schools on the initiative of improving their own practice by participating in the work of creative groups. The conducted interview made it possible to trace the change in the position of the teacher on the research issue. Working in creative groups has taught teachers to cooperate with colleagues not only in the taught subject, but also in other academic subjects within the network professional community, which is an indicator of leadership.

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**Professional Learning Communities:  
Implementation Strategies and Professional  
Practices of Lecturers**

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Sabariah Ismail,  
Romai Noor

The development of the country to fulfill the desires of the future human capital of today's people through education is very much demanded. Education

Rabbu  
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**Keywords**  
Professional  
learning  
communities,  
Implementation  
strategies,  
Practices,  
Lecturers

development programs are implemented in the current paradigm shift based on the policy of education liberalization with priority towards the formation of a culture of knowledge among educators. The importance of the formation of a culture of knowledge with the networking of the professional learning communities (PLC) through the practice of lifelong learning with collaboration among the institute's staff in the construction of thinking capacity, mastery of knowledge and sharing of expertise. The findings of the study show that the implementation strategies through PLC are able to manage for mindset change and knowledge sharing among lecturers and staff. The findings also show that lecturers and staff should constantly improve the methods of sharing best practices among lecturers and staff. Thus, PLC is seen to be able to improve professional skills and practices in the pursuit of quality results.

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**Boys Are Brilliant Writers!/: The Effectiveness of Mobile Learning Technologies in Teaching Writing to Student Athletes**

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**Keywords**  
Mobile  
Learning,  
Boys, Student  
Athletes,  
Engagement

This study is to test the effectiveness of using mobile technologies along with active learning strategies in the teaching and learning of writing to the student athletes of SMK Anderson, Ipoh, Perak. It examines the use of a similar strategy which was adopted in teaching writing to the non-athletes of Sekolah Tuanku Abdul Rahman, Ipoh, Perak, from the perception of the student athletes and the teacher. The case study method was used and mixed methods were applied to collect both quantitative and qualitative data. The results of the analysis revealed the following finding: 1) From the students' perspective, the results strongly confirm that using a mobile phone in writing lessons is very effective in engaging the student athletes. It is a great assistive tool for creativity as its mobile feature enables students to explore ideas beyond the boundaries of their classroom. It incentivizes students to be more productive to complete their tasks and collaborate with their peers. 2) The teachers have

positive attitudes towards mobile learning adoption as students' are found to be more engaged in their writing lessons. The teachers acknowledged that there are several hindrances to the use of a mobile device in learning the English language, and these barriers could negatively affect the effective use of a mobile device as a learning tool. The implication of this study is that the mobile device is indeed a great assistive tool for language learning and it needs to be employed in designing writing lessons and material development.

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### **Lesson study as a form of follow-up support for teacher professional development courses**

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#### **Keywords**

Lesson study,  
Follow up  
Support,  
Teacher,  
Professional  
development

Kazakhstan's Law "On the status of a teacher" requires organizations offering professional development (PD) for teachers to provide them with methodological follow-up support. However, Kazakhstan's PD system lacks clear approaches to follow-up support: it is provided sporadically, through a variety of activities that are often unrelated to the content, aims or the learning outcomes of the PD programs, having no measurable impact on students (Mullis, 2015). Kazakhstan's National Center for Professional Development Orleu is currently working on strengthening its follow-up support for teachers who take Orleu's PD courses. In 2022, Orleu launched a pilot project on follow-up support based on the Lesson Study (LS) methodology. LS creates better conditions for professional collaboration, focus on students' learning, and teachers' inquiry (Van Veen et al., 2012). This paper presents the findings from a qualitative study of the effectiveness of the pilot project. Focus group discussions with teachers (n = 8), school administration (n = 12), and students (n = 12) were conducted to investigate the effect of LS on teachers' classroom practices and student learning outcomes, as well as the feasibility of LS as a form of follow-up support for teachers' PD. Preliminary findings indicate that using LS as a form of follow-up support improves students' learning, stimulates collaboration among teachers, and

allows teachers to develop the competencies they learned during the PD courses. The findings also suggest that LS can be implemented on a large scale as the main form of follow-up support in all Orleu's PD programs.

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**Biology Interdisciplinary Teaching Contribution In Physics For Secondary School: Ionizing Radiation Cellular Effect; Lesson Experience And An Action Research.**

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**Keywords**

Biology, Ionizing radiation cellular, Effect, Lesson experience, Action research

The aim of this research paper is to study the impact of teaching biological aspect of effects of ionizing radiation on human cells, on the quality of Physics students' knowledge. This was carried out on two groups of grade 12 Physics students. One group studied through the interdisciplinary approach and the other did not. Two biology teachers and two physics teachers began planning an action research with the following methodology: A lesson plan; Teaching materials–PowerPoint slides; group work worksheets, videos; In-class evaluation; A questionnaire; Corrective measures taken; A seminar presentation delivered to the other science teachers. For the group that went through the interdisciplinary lesson, the results showed that 77% attained 70% and above marks on their evaluation task. For the group that did not go through the interdisciplinary lesson, the results showed 38% attained 70% and above marks on their evaluation task. This study links to the lesson, learning studies and the teacher professional development theme because it showed there is need for different subject teachers to work collaboratively to ensure students link the concepts taught to help build confidence in their secondary learning and influence their choices on university studies. The conference is connected to this research study as it aims to increase educators' collaboration worldwide while addressing the future challenges across different levels of education. This is mirrored in the research study as Biology and Physics departments have interlinked to address current and future challenges of the learners.

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**Keywords**

Professional  
community,  
STEM  
educators,  
School  
development  
management

The role of professional communities in school development is growing significantly, as there is a need to update the content and achieve the quality of education in the context of modernization in the Republic of Kazakhstan. According to the International Organization OECD the Kazakh educational system is the basis for the country's economic diversification. The paper reflects the results of the professional community of STEM teachers and their roles in developing STEM education at Nazarbayev Intellectual School . The study's relevance is due to society's need for technically competent specialists in the field of engineering and technical sciences, as well as the need to increase the motivation of students to choose engineering professions. Moreover, needed to create a system for the continuous training of future qualified engineering personnel with academic knowledge and professional competencies to develop priority areas of domestic science and technology. After analyzing scientific papers of stated problem and pedagogical experience, there is a lack of scientific research studies on school development management issues with the involvement of the pedagogical community. It also revealed the existence of contradictions in the need for school development management. The aim of the research to theoretically substantiate and experimentally verify the role of the professional community of STEM teachers and give practical recommendations for other schools. STEM Education develop students Research Skills according to the 4C model. Lesson study methods are used to organize the professional community. Expected results - creation of a professional community of STEM teachers who develop STEM education

## **Engaging with Colleagues in Recurring Lesson Study Lesson Cycles: The Promise When Learning Together**

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### **Keywords**

Reflective  
practice,  
professional  
learning, lesson  
design, lesson  
study

This project aimed to understand how, if at all, grade 10-12 teachers, representing six departments in one high school along the United States and Mexico border, planned lessons to increase student experiences in reading, writing, and relationship-building (i.e., school goals). Methodology Teacher lesson planning sessions, classroom observations, post-lesson debriefs, and teacher- and student-focus groups were used to learn about student experiences in Advanced European History, Agricultural Sciences, Algebra II, English III, French, Physics, and Practical Writing. Data collection and analysis provided insight into how teacher's approached lesson planning, including how they embedded the school goals, as well as how students responded to each lesson. Preliminary Findings 1) Teachers need dedicated time supported by colleagues when planning lessons. 2) Teachers benefitted when knowledgeable others shared observations or alternative instructional practices to enhance student learning. 3) Students responded positively to the change in lesson delivery. Significance 1) Deepening our knowledge of how six department teachers can engage in writing/observing scripted lessons using the same lesson planning template can help administrators and educators support Lesson Study teams. 2) How educators and administrators approach lesson planning with school goals and student interest in mind can positively affect student outcomes. 3) Social interaction and dedicated time for teachers to talk can result in new knowledge and perspectives. Relevance This project is relevant to the Lesson and Learning Studies and Teacher Professional Development strand as it highlights the need for educators to have differentiated, sustained opportunities to study, demonstrate, and practice Lesson Study cycles.

### **Growth Process of the Skill of Understanding Children in Japanese Lesson Studies**

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**Keywords**  
Understanding  
Children,  
Elementary  
School  
Teachers,  
Empathy,  
Students'  
Backgrounds

In Japan, it has been understood that teachers should acquire two skills for training to conduct lessons. One skill is to be able to interpret students' cognitive processes in class, and the other skill is to be able to understand the intersubjective existence between students and a teacher. The latter skill is defined as "kodomo-rikai" (understanding children). It has been pointed out that teachers acquire this skill in order to understand children over a long period of time, mainly in student guidance and counseling. This study was undertaken to examine how teachers acquire the skill of understanding students. The method used was interviews with three university instructors who had been elementary school teachers. The results of the interviews were coded per sentence, and the codes were rearranged chronologically to analyze the life history of each teacher. The results revealed three points in the teachers' acquirement of these skills: (1) When teachers face intense difficulties in classroom management and reflect on their own teaching methods, (2) when teachers are oriented to continue building relationships with students and observe students' lives in and out of school, including their family background, especially when they directly observe the students' difficulties, and (3) when teachers interpret the students' backgrounds and their lives with their personal experiences of difficulties and empathize this with the students. Through this understanding of the students, the teachers conduct lessons that explore better practices suitable for individual students.

### **Kyouzai Kenkyuu: A key to unlock new comprehension through lesson study**

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National  
Institute of

Kyouzai kenkyuu or the "study of materials for teaching" is a critical yet often neglected phase in Lesson Study, especially in countries beyond Japan. One reason why teachers often fail to learn from their

Education,  
Nanyang  
Technological  
University,  
Singapore

**Keywords**

Kyouzai  
Kenkyuu,  
Pedagogical  
Reasoning and  
Action, Teacher  
Noticing, Lesson  
Study

experiences in lesson study is the failure to engage productively in kyouzai kenkyuu (Watanabe, Takahashi, and Yoshida, 2008; Yoshida & Jackson, 2011). In this paper, I will describe how a team of lower secondary mathematics teachers in Singapore examined their existing teaching materials to discuss new possibilities for teaching the sum of interior angles of a polygon. The findings were generated from audio recordings of lesson study discussions, lesson materials, and video recordings of lessons conducted. The transcripts of the lesson study discussions were parsed into episodes that discussed the mathematics, students' learning, and teaching approaches. The analysis of video recordings was focused on student-generated responses to the tasks and how the research teacher responded to students. By tracing the teachers' pedagogical reasoning (Shulman, 1987) through the processes of lesson study, I argue that Kyouzai Kenkyuu, when carried out effectively, can potentially unlock teachers' new comprehension of the content they are teaching. The findings not only reaffirmed the critical role of and challenges associated with Kyouzai Kenkyuu but also highlighted the importance of teacher noticing in harnessing the affordances of conducting Kyouzai Kenkyuu. Some implications for teacher professional development and future research will be discussed.

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**Lesson study: Using backward planning to teach story writing**

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Kazakhstan

**Keywords**

Lesson study,  
Backward  
planning, Story  
writing

The goal of this study was to analyze students' interpretation of assessment rubrics for story writing. It also aimed at examining the effect of using the Understanding by Design approach for lesson planning. The problem of the research was the low quality of 7th-grade students' writing. These students with mixed abilities often find it challenging to develop and organize their ideas. Therefore, teachers decided to engage students in developing assessment rubrics for writing. The use of UBD enabled teachers to develop a series of lessons that have helped to build students'

understanding of high-quality writing. The lesson under observation focused on the planning process of story writing. The planning stage included engaging students' in developing assessment rubrics and writing a plan of a story. The research subjects were 13 students in 7th grade and students' papers. For data collection, observation, interview, and documentation were used. The implementation of this research was conducted in six stages: identifying desired goals, determining acceptable evidence, planning lessons and activities, observing one research lesson, and reflecting on the observed lesson. The result of the study demonstrated that students were able to interpret the difference between an A and B grade stories. For A grade story, students suggested including at least 5 rising actions to make a story more engaging and the use of literary devices. The comparative analysis of students' formative and summative papers of the second and third terms demonstrated a significant improvement in students writing in the last term.

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### **The Impact of Cross-cultural lesson study on Teacher Learning**

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#### **Keywords**

Teacher  
professional  
development,  
teacher  
educators,  
teacher  
knowledge

Lesson study (LS), a teacher-centered and student-focused professional development approach, has been adopted around the world (Huang et al., 2019). Research has documented the positive effects of LS on teacher professional learning (Cheung & Wong, 2014; Willems & Bossche, 2019). Recently, cross-cultural lesson study has been utilized to expand teacher collaborative learning (Huang et al., 2021; Isoda et al., 2021). However, the effect of teacher learning through lesson study cross-culturally is still largely unknown (Huang et al., 2021). This presentation examines participating teachers' learning through a cross-cultural lesson study. A LS team in Shanghai, China that included six mathematics teachers from a private middle school (i.e., Shanghai LS system) collaborated with a LS team in Ohio, USA that included six interdisciplinary teachers from an arts school, (two of whom focus on teaching

mathematics). Each team was facilitated by a researcher from a local university and cross-cultural meetings were mediated by a third researcher. The cross-cultural LS took place over six months. The activities included two meetings devoted to identifying learning goals and content commonly taught across cultures; one meeting for sharing lesson plans; developing a public lesson of the identified topic by each team; reviewing the shared videos of research lessons by each individual team; and one meeting for discussing the videos of research lessons cross-culturally. The data collected were lesson plans, meeting notes, videos of research lessons and cross-culture sharing meetings, and final teacher interviews. The discussion will focus on teacher learning through cross-cultural LS.

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### Lesson Study Cluster: models and practices

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**Keywords**  
professional  
learning  
communities,  
diagnostic,  
observation,  
approach

At the forthcoming conference to your attention will be presented model and practice of developing professional learning communities in Kazakhstan, Nur-Sultan city. Today we live in a society with increasing dynamism, with profound changes in various areas of life, with various socio-economic transformations, with passing through new levels of knowledge. To meet the requirements of the time, it is necessary to achieve a new quality in the professional activity of the teacher. The teacher needs to generate new knowledge on the basis of rethinking the design and implementation of the pedagogical process on a scientific basis, which is associated with research processes. The aim of the research: Formation of an innovative system of work by increasing the creativity of teachers, identifying talented and creative teachers within the network community and building leadership in professional community. Introduction Lesson Study (LS) is a highly specified form of classroom action research focusing on the development of teacher practice knowledge. LS involve groups of teachers collaboratively planning, teaching, observing and analyzing “research lessons”. 2. Methodology Theoretical: analysis of the literature,

modeling of general and particular research hypotheses and designing the results and processes of their achievement at various stages of the search work; Empirical: observation, survey and diagnostic methods (questionnaires, interviews), study of pedagogical documentation, generalization of pedagogical experience, analysis of creative works, diagnostic and formative experiments; In our practice we are holding Lesson Study among Leading and Partner schools. Our school in Lesson Study cluster becomes the Leading school since 2015 and we have divided our research work into academic years. Activities are such as joint planning, observation, discussion and sharing experience. The content of the research is - within the cluster work with the model of Lesson Study through collaborative learning with partnerschools, experience of research is discussed and shared on WALs conference.

3. Findings/Results and Discussion  
Implementation of the Lesson Study approach among partner schools, distribution of best practices. We have created the model of Lesson Study. First we formed Lesson Study research groups among partner schools and formulated the research problem. Next we planned lessons and while conducting Lesson Study observed students' activities and then discussed and analyzed the results of students' achievements and made changes. Then the cycle of lessons continued.

4. Conclusion  
We can conclude that Lesson study contributes to the professional development of teachers. And in our case, forming of cooperation and exchange of experience between the leading and partner school teachers.

5. Acknowledgement  
Our school was the member of WALs-2019 and 2021; we are grateful to the WALs conference committee for our becoming the participants of these awesome conferences, we had a chance to deliver our experience in Lesson Study researches. Also we want to mention the administration of our school that granted financial support and acknowledge the help we got from our partner school colleagues during the research work.

### **Developing assessment literacy in vocational education and training through attending to student voice in Lesson Study**

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College of  
Teacher  
Education  
Lower Austria

**Keywords**

student voice,  
vocational  
education and  
training,  
assessment  
literacy

This presentation discusses the role of pupil voice in Lesson Study in vocational education and training. It concentrates on how student participation in Lesson Study can contribute to teacher learning and create increased awareness for the role of feedback and formative assessment. In this Lesson Study, student voice was initially only incorporated into teachers' collaborative reflections on lessons. During the third Lesson Study cycle, however, students were also involved in the planning process of the research lesson and in the process of providing feedback on learning. Data were collected in two Lesson Study groups in an English as a foreign language project. Student interviews and teacher discussions were video recorded, transcribed, and analysed using the constant comparative method. Collaborative discussions about results from data analysis followed a phenomenographic approach in attempting to develop conceptual understanding of the nature of feedback and formative assessment. Results suggest that LS is a powerful tool for attending to student voice and fostering student participation in the development of Lesson Study research lessons, their implementation, and the evaluation of student learning. As the concept of student participation was new in the vocational education and training institution, teachers benefitted from the additional collaboration in their interpretations of student learning, planning, implementation, and evaluation of research lessons, as well as in their own development of assessment literacy.

### **Pupil voice in Lesson Study-a review**

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To improve student learning in schools, it is seen as a precondition that teachers participate in collaborate activities that promote teacher learning, such as Lesson Study processes. This study focuses on a specific aspect

**Keywords**  
Lesson Study,  
pupil voice,  
teachers'  
professional  
learning

of Lesson Study, namely including the perspectives of students as a part of the Lesson Study process (Dudley, 2013, 2016; Messiou & Ainscow, 2015; Norwich et al., 2014; Warwick et al., 2019). The aim of the study is to explore the connection between pupil voice and teacher learning. The paper provides a review of articles that examine the importance of pupil voice for teacher learning in LS and presents suggestions for the further development of pupil voice in LS. Articles for the review have been collected through a digital search in May 2022. The selection of articles contains articles from the field of in-service and pre-service teachers, including teachers working with children with special needs. Preliminary findings suggest that teachers' insight into students' perspectives can give teachers new ideas about students' situations in school as well as contributing to the improvement of teaching. Possible implications include further development of Lesson Study processes that include the recognition of students' perspectives. The results have significance both for theory and practice, contributing to the understanding of the potential of students' perspectives for teacher learning. The paper relates to teachers' professional learning and development, exploring whether pupils' perspectives can contribute to teachers' perspectives.

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**Challenge to integrate theory and practice in the  
graduate school curriculum through the practical  
development of global competencies**

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**Keywords**  
global  
competencies,  
graduate school,  
teacher

This presentation is to report practical research on the challenge to integrate theory and practice during a graduate program of a Graduate School of Professional Teacher Education in Osaka, Japan. The purpose of the research is to integrate theory and practice required for teachers who lead global education (21st century type education). We have worked on practical research for two years to achieve this goal. In 2021, the competencies for teachers to acquire were generated through a graduate curriculum, which is called Competencies required for Naniwa's global teachers. In

education

2022, the members have given training based on those competencies at the university and schools to which we belong to for further practice and verification. The keyword for development is "Chuku: Words connecting abstract ideas and concrete action instructions". We also received a third-party evaluation from university researchers. Analysis, results, and issues will be clarified in the presentation.

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### **Developing Decision-Making Skills in Junior High School Science in Japan**

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and Social  
Sciences,  
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University,  
Japan

#### **Keywords**

Decision-  
making, Science  
education,  
Teaching  
methods

The purpose of this study is to clarify the reality of decision-making skills of junior high school students in Japanese science classes and to derive suggestions for developing teaching methods based on the results of the survey. Therefore, this study was conducted using a Likert scale questionnaire on 121 second and third graders at a public junior high school in Hiroshima Prefecture, Japan. In addition, 72 second-year students were surveyed using open-ended assessment questions that were designed to simulate science-related decision-making situations. The results revealed that although students are trying to make decisions on one's own initiative, they have issues with attitudes towards improving the quality of their decisions and with confidence in their decision-making. While many students were able to make decisions based on scientific evidence, some students simply agreed with the decisions of other people, others made decisions based on vague and ambiguous grounds. Furthermore, it was also found that stereotypes have a strong influence on decision-making. From these results, the following suggestions for teaching methods to develop decision-making skills were derived: Teachers should guide students to (1) intentionally set up situations in class where students can improve the quality of their decision-making, (2) create an atmosphere where students are receptive to the decision-making of others, and (3) show students the decision-making process.

## Investigating the Development of Students Autonomous Learning Skills in the Context of Online Learning

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### **Keywords**

Autonomous  
learning,  
independent  
learning skills,  
online learning

The study aimed to investigate the autonomous learning practices among students: what they know about autonomous learning, and what strategies and activities can be undertaken to improve their autonomous learning skills. The study shed light on how students perceive the role of teacher in their learning and what factors influence their autonomous learning practices. The justification of the research is the need for teachers to develop students' independent learning skills that would enable them to plan, reflect on and evaluate their learning as they are vitally important in the context of online learning. Research instruments included pre-/post- questionnaires, weekly surveys, and online interviews. Weekly surveys were used to measure two key predictor variables: hours of studying and what strategies students use. Overall, pre-questionnaire revealed that students were unfamiliar with autonomous learning strategies and not able to take responsibility for their learning, relying too much on a teacher's support. However, changes in students' perceptions and autonomous learning skills were reported over a period of time investigated. The results showed that students made various progress in their autonomous learning abilities with the most developed self-regulation and self-assessment skills. The development of these skills had a positive impact on students' academic performance. Further, students' attitudes became more positive towards independent learnings compared to the pre-questionnaire results. Motivation, environment, tasks and materials have an influence on students' willingness to learn independently. This study provides information relevant to teachers and students, and make suggestions for improving autonomous learning skills which contribute to a life-learning experience.

### Using Learning Kit As A Concept Teaching Tool For Lesson Money At Year Two Primary Students

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Wahab, Romai  
Noor Rabbu

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#### Keywords

Learning kit,  
Concept  
teaching tool,  
Lesson money,  
Primary student

This study aims to determine the use of learning kits in teaching concepts for lesson study on the topic of Money up to RM100 among Year Two students. The study respondents were a total of 30 students gone through the lesson study using concrete and digital learning kit. The procedure of learning process of the concept of money included the introduction of money, operation in using money, exchange of money and solving daily money problems. Data collection using test instruments was then analysed using rubric making scheme. Data analysis used to test the study hypotheses was paired T-test for the performance before and after the lesson study. The study's findings showed that the lesson study conducted successfully improved the achievement of second-year students in learning the concept of money. The study found that 57.82% increase in the mean for the study. This study shows that the use of concrete and digital learning kits can help students' conceptual understanding and promote meaningful mathematical learning. The implication to students is that students can improve their achievement in Mathematics on the topic of money, especially in this era of e-money. These kits can be improved to the practice of teaching and learning process for more effective ways to the new era challenges.

## **A Qualitative Interview Study About General Conditions for a Successful and Sustainable Implementation of Lesson Study in German Primary Schools**

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**Keywords**  
Interviews,  
conditions for  
success,  
school  
principals,  
Germany

Implementing Lesson Study sustainably in schools is not an easy task, but a process that depends on a multitude of preconditions. Research suggests that the school principal acts as a key figure in this process (Lee & Madden, 2019). In 2019, we introduced Lesson Study to 19 primary schools in Germany. The schools are located in various urban and rural areas across multiple German states and differed in their prior experience with cooperative lesson planning, but also in the available resources. Four years into the project, we conducted semi-structured interviews with both teachers and principals and asked them about their perception concerning the success of Lesson Study at their school, as well as about their personal experience. We used maximum variation selection strategy (Patton, 1990) to choose six schools that differ in their preconditions, the principals' involvement, but also in how well they were able to integrate Lesson Study into their schools. For example, while some schools are still struggling to complete their second Lesson Study cycle, others are working on their sixth. The overarching research question that guided this paper was therefore „What are critical conditions for the success of Lesson Study?“. Following the qualitative content analysis approach (Mayring, 2000), we systematically coded, categorized and analyzed the interview transcripts. In our presentation, we describe salient findings and discuss differences in the Lesson Study outcomes as perceived by teachers and principals. We further derive implications regarding the introduction of Lesson Study in (German) primary schools.

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**Keywords**  
Elementary  
STEM  
education,  
Maker Mindsets  
assessment,  
Integrated  
Lesson Study  
Model, Design  
Thinking  
process

This project aims to invite Chinese elementary school teachers across STEM for attending Lesson Study (LS) to develop lessons based on the core ideas of Maker Education. Maker education is based on the idea that the process of creating meaningful artefacts leads to an improved maker mindset (MM), which can be summarized as the cognitive, affective and behavioral aspects of an open and constructive stance towards problems-solution. The LS model used will combine Chinese Lesson Study (CLS) with UK Research Lesson (UKRL), selecting three cases pupils to inform teachers. The LS team employs a pedagogy based on a Design Thinking (DT) process, (Emphasize-Ideate-Define-Prototype-Test), as part of a Making Pedagogy. Firstly, teachers are informed about MM in terms of constructs, indicators, and descriptions based on systematic literature review results. MM constructs include STEM knowledge and skills, thinking skills, self-efficacy, self-identity and self-concepts, intrinsic motivation, self-regulating learning, and learning by sharing and collaborating. Secondly, teachers share their views about task-related indicators of MM based on their teaching experience. Finally, teachers collaborate to set two- or three-MM constructs and STEM-related concepts as teaching and learning goals for RLS. As part of the process, the LS team develops rubrics and standards to evaluate MM. They can set weights to the various components of the MM measure, reflecting their views on their importance in the different DT stages. This study adopted integrated model, both emphasizing teachers' teaching and students' learning. Secondly, it extends LS application fields to STEM curriculum design and MM assessments.

**The Implementation Of Blended Learning To  
Increase Grade Xi Science Students' Critical  
Thinking Skills In Learning Biology At Sma  
'TIKVA' Palembang**

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Handoko LTB  
Tobing

Tangerang  
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Indonesia

**Keywords**

Blended  
Learning,  
Critical  
Thinking Skill,  
Teachers  
Development,  
Classroom  
Action Research

As we are moving forward to an era after the word pandemic, many educators had been wondering whether they should continue the Blended Learning approach or should they move right back to face-to-face teaching. Besides that, teachers have also bombarded the needs of growing the 21st-century sets of skills through their teaching. In this study, I investigated how a Blended Learning approach would impact students in the context of learning Biology. Based on the observation of the grade XI Science students at a Senior High School in Palembang, the researcher found that the students were lacking critical thinking skills. The researcher then decided to implement Blended Learning to overcome the issue. The research methodology used was Classroom Action Research (CAR), adapting the model by Kemmis and McTaggart and it lasted for two cycles. The research began on August 11th until November 21st, 2014, with 23 students as the research subjects. The instruments used to obtain the data are student questionnaire sheets, mentor observation sheets, student worksheets, lesson plans, and reflective journals. Based on the results, the implementation of Blended Learning was able to increase the students' critical thinking skills. Proved by more than 75% of students achieve each indicator of critical thinking skills in every research instrument. Thus, it can be concluded that Blended Learning is the right solution to increase students' critical thinking skills. This study proves Blended Learning is the right approach for the era after the world pandemic.

Vishnu

IPGKRM,  
Malaysia

**Keywords**

Book Club,  
STEM, PLC,  
Science

Book Club is one of the collaborative tools contained in the Professional Learning Community (PLC). With the use of the Book Club, a group of teachers are able to hold discussions and knowledge sharing on a monthly basis based on books and articles read. Therefore, this study was conducted to examine the use of STEM books in book club strategy and its implementation procedure in teaching Science and Mathematics subjects. This study is qualitative in nature that uses document analysis to collect research data. Various books and journals have been used for the purpose of reviewing and analyzing the study data. The Book Club needs to hold a meeting session in order to review a particular book or fact by mutual agreement as assigned. After the reflective session and question and answer a summary will be generated from the views of the club members. Finally, the results of the summary are disseminated to all members through various means. The findings of the study conclude that the use of appropriate STEM books can purify a more informative and rational teaching atmosphere. Pupils can understand the content of the lesson in more depth and breadth. Therefore, Science and Mathematics teachers need to familiarize themselves with the use of STEM books to enhance the quality of Science and Mathematics teaching. The Book Club is a collaborative tool of the Professional Learning Community where relevant books are read by all teachers involved and parsed to get ideas and suggestions towards improving student.

## International Policy Borrowing And The Case Of Japanese Lesson Study

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### Keywords

Implementation,  
sustainability,  
translation,  
teacher  
professional  
development,  
impac

This presentation explores translation of Lesson Study (LS) internationally, seeking to understand how and why it is adapted and how an understanding of national culture and implementation paradigms might support translation. The theoretical paper explores two bodies of literature which may support an understanding of how and why local LS adaptations occur and the likely effect on desired impact and sustainability in international contexts: - Implementation science (Durlak, 1998) - National cultural dimensions (Hofstede, Hofstede, & Minkov, 2010) The paper begins by examining evidence on adaptation and challenges of LS implementation internationally, finding both deviation from the seven components of LS (Seleznyov, 2018), and qualitative evidence of perceived challenges to successful implementation. Implementation science (Durlak, 1998) reveals that full fidelity appears not to be amenable to the complexity of education innovations like LS, but that adaptation is fraught with challenges, with no linear pathway. Furthermore, Hofstede, Hofstede and Minkov's (2010) dimensions of culture enable us to hypothesise about how Japan's culture might have framed development of LS, and to predict possible challenges when translated into a host nation. This theoretical framework suggests that a consideration both of national cultural differences and of the chosen implementation paradigm, may prove useful for practitioners seeking to introduce LS into their own nation's schools. This approach enables practitioners to weigh up the feasibility of implementing LS with fidelity, and to be cautious about expectations of impact and sustainability.

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**Integration of History, Malay Language and Physical Education subjects in strengthening Higher Order Thinking Skills Through Lesson Study**

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Anak Balang

Universiti  
Kebangsaan  
Malaysia,  
Malaysia

**Keywords**  
HOTS, CCE,  
Lesson Study,  
AS3KNP  
Technique

One of the problems of Form 5 Brilliant students is that they cannot master the correct techniques in answering Higher Order Thinking Skills (HOTS) questions. This situation has an impact on their scores in the assessment. Therefore, Lesson Study was conducted to resolve the issue by combining subject of History, Physical Education and Health Education and Malay Language through the application of Cross Curricular Elements (CCE) in teacher teaching. The integration between these three subjects can improve the problems faced by the students for the topic of 'Malaysia's involvement in the Commonwealth. A total of two Lesson Study cycles were implemented to help resolve the issues encountered. Findings based on reflections in cycle 1 on 27 April 2022 show that students feel happy when several teachers teach this teaching topic at the same time. However, in Cycle 1 this issue is still not successfully resolved. Cycle 2 was implemented on 13 May 2022 by making improvements to the teachers' Daily Teaching Plan (RPH). Findings from Cycle 2 found that the use of Formula AS3KNP and URT Technique has helped Form 5 Brilliant students in writing answers HOTS questions using grammatical sentences. A focused follow-up study related to Lesson Study is proposed to be implemented in order to solve the learning problems of other students for History and Malay Language subjects.

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**Copying or note-taking? An analysis of the relationship between board writing (bansho) and notebook writing**

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Nagoya  
University,

The term 'new normal' is one of the most used phrases amid the COVID-19 pandemic. This term has also been used extensively in the OECD Future of Education and Skills 2030 project to refer to something which was

Japan  
**Keywords**  
Japanese lesson  
study, active  
learning,  
bansho,  
notebook

previously uncommon and has become commonplace. One of the shifts envisioned in the education system embodying the new normal is the role of students; students will be active participants who assume responsibility for their own learning instead of learning by listening to directions of teachers. As one of the constantly discussed elements in lesson study, bansho is central to Japanese classrooms due to its effectiveness as a pedagogical approach particularly in promoting students' critical participation and thinking. Bansho is almost always associated with students' notebook because of their intertwined functions. It is said that a good notebook comes from a good bansho. However, notetaking has received criticism because students often copy notes from the board passively without any learning taking place. Drawing data from a Grade 6 Social Studies lesson in Japan, this presentation will examine the relationship between bansho and notebook writing. Particularly, the study aims to identify if students are merely copying from the board or taking notes that illustrate their thinking and learning processes. The effects of bansho on notebook writing will also be discussed to fully leverage pupils' learning in an everyday lesson.

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### **The Effects of Collaborative Blended Learning (CBR) Program on students' Reading Comprehension**

Kumuthinijagab  
alan, Rodiah  
Dali, Cheah  
Hwei Chiet,  
Malar a/p  
Muthiah  
  
Malaysia  
  
**Keywords**  
Reading skill,  
text-book

The present study investigated the impact of the CBR program designed based on the ADDIE Model to help pre-university students acquire reading skills right in the early academic session 2021/2022. Paper 3 of the Malaysian University English Test (MUET) comprises a test on reading comprehension that aims to assess students' ability to comprehend various types of texts of varied lengths and levels of complexity (content and language). Thus, in relation to this, the current study analyzed the reading performance of the pre-university students' reading ability of (i) understanding the main idea and supporting details, (ii) understanding text

instruction,  
blended-learning

organization features, (iii) distinguishing facts from opinions, (iv) identifying the author's purpose, attitude and style, (v) making evaluations and, (vi) deducing meaning from CEFR-aligned context. The current study uses a quantitative data collection method. The study subjects were a group of pre-university Engineering majors from Kolej Matrikulasi Kejuruteraan Kedah who were selected employing the purposeful sampling method. The study was conducted particularly for 16 students who scored poorly in reading tasks. There were two intervention options: option A was for the control group with 8 members that aimed exclusively at promoting text-book instruction; option B was for the research group, which consisted of 8 members too. Option B seeks to promote the CBR program that evolves to developing collaborative skills and visual information presentation. The effectiveness of the CBR program has been measured to compare the results of both groups. The research group showed statically significant on students' performance in the posttest with a mean score of 75.0 versus 45.8 for the control group. Therefore, it is recommended that educators use integrated collaborative CBR with blended learning to cope with students' needs to fill a real gap in language learning to improve reading skills. The implication of this study could help pre-university educators to design effective reading programs to enhance students' reading skills.

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### **Improving Students' Collaborative Writing Skills Using Collaborate, Reflect And Report Technique (CRR Technique)**

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**Keywords**  
collaborative  
writing,

This research is conducted to find out whether or not the use of Collaborate, Reflect and Report (CRR) Technique encourages the students to participate effectively in the collaborative writing tasks and the instructors can evaluate effectively the students' collaborative writing tasks. The data of study were obtained from 9 students from Kolej Matrikulasi Kejuruteraan Kedah. These students were targeted

Infographics,  
collaboration

because through my observations and their peers, they were ineffective in a previously conducted collaborative writing task. CRR Technique was used as the strategy as the students were not collaborated effectively in their collaborative writing task but shared good remarks from the instructors for their end product thus it made the other students showed their dissatisfaction towards collaborative writing tasks. This is an action research and three data gathering methods such as collaboration reports at Google Docs, compiled information onto infographics template and self-evaluation checklist that made a frequency count of the students' contribution in the collaboration writing task. The findings of the study proved that the use of CRR Technique helped to improve the students' collaboration as the students were participated effectively in the collaboration activities that outlined for the collaborative writing task. It also encouraged the students to use technology applications such as Google Docs and Piktochart Infographics effectively to improve their reading and writing skills. This study proposes the suggestion of incorporating collaboration and end product as an ongoing process in collaborative writing tasks instead giving more priority to the marks of the end product.

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### **A shared conceptual model for lesson study: Capturing inputs, processes, and outcomes**

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Germany

**Keywords**  
teacher learning,  
outcomes, lesson  
study,  
professional  
development,  
conceptual

Global interest in Lesson Study (LS), an iterative professional development model, is growing rapidly and has resulted in a rich body of findings that report mixed outcomes and impacts on teacher learning. In this conceptual paper, we argue that the field of Lesson Study currently lacks a conceptual model that can help tie these findings more closely to a shared schematic framework and lend explanatory power. Reviewing research on professional development, we derive the purpose of such a model and criteria that it should fulfil. We then examine current LS models, showing that several aspects, such as inputs, learning processes, LS' iterative character, and outcomes over time, are not

model sufficiently addressed. To fill these gaps, we draw on wider perspectives on teacher learning and organizational psychology and propose an updated model of LS. Lastly, we discuss concrete ways in which this model can be used in researcher and practice.

**181** **Primary mathematics teachers' collaborative diagnostic assessment/analysis practices: a case of in-school Lesson Study**

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Pretoria, South  
Africa

**Keywords**  
Lesson Study,  
diagnostic  
assessment,  
diagnostic  
analysis, teacher  
professional  
development,  
mathematics  
misconceptions

Lesson Study (LS) is a teacher-led and practice-situated professional development model. Through LS teachers explore and improve their teaching skills by collaboratively planning the lesson and one teacher is observed while teaching and the LS team reflect on the lesson taught. Teacher learning and elicitation of learners' (mathematical) thinking are the main foci of LS. Since attracting global interest through TIMSS video study, LS evolved into different variations informed by the unique teacher development needs of the specific institution or country. The LS variant broadly used by many public schools in South Africa is characterised by diagnostic assessment/analysis stage as its unique feature. Through diagnostic assessment/analysis practice, teachers gain an in-depth understanding of learners' difficulties about a particular topic/concept in mathematics. The purpose of this study, therefore, is to examine mathematics teachers' diagnostic assessment practices when implementing LS and how they use it to determine the goal of the research lesson. Situated learning theory in which LS is rooted and the taxonomy of diagnostic competences proposed by Fischer et al. (2014) are two theoretical lenses used to frame this interpretive case study. Qualitative data was collected from mathematics teachers participating in in-school LS through observation, interviews and document analysis. The preliminary findings revealed that teachers use self-developed diagnostic assessment test and/or diagnostically analysed summative assessment test to determine primary school learners' difficulties in mathematics, and to inform the goal of the

research lesson.

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### **Innovation in Lewis Structure Learning through Lesson Study: Teacher Learning/Collaboration and Student Engagement**

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Institution,  
Malaysia

#### **Keywords**

Lesson study,  
Chemistry,  
Lewis Structure,  
STPM, Victoria  
Institution

There are twenty-two STPM Chemistry students in Pusat Tingkatan 6 Victoria Institution, Kuala Lumpur. In their first chemistry test on 22 September 2021, these students only achieved an average grade of 2.47, which is lower than the targeted grade 3.00. It is found that these students could not apply the chemistry concepts in answering the test questions, especially questions related to Lewis Structure in chemical bonding. Lewis structure is a representation showing the sharing of valence shell electrons between atoms in a molecule or ion. This study was carried out to increase students' ability to draw Lewis structure by making the invisible electrons visible to them. A total of twenty students from S1BM, S1BFM and S1FM and three chemistry teachers were involved. The students were divided in groups of 2 to 3 students per group. Each group was given 100 pieces of 10¢ coins and cards with symbol of elements in Periodic Table. In the group activity, each 10¢ coin representing an electron. Students arranged the 10¢ coins around the symbol of elements to build "Duit Structure" of selected molecules/ions. Preliminary survey was done through pre-test before the intervention. The students were exposed to the "Duit Structure" for a week and the results showed that 90% students have improved significantly in their ability to draw Lewis Structure. By collaborating in this study, teachers found that they have created new knowledge in teaching practice and an increase in students' engagement.

### Understanding of Electricity Concepts among Junior High School Students in Japan

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**Keywords**  
Augmented  
Reality, Junior  
high school  
science,  
Electricity  
concepts

The purpose of this study is to develop teaching materials utilizing Augmented Reality (AR) to promote understanding of the concept of batteries in Japanese junior high schools. Furthermore, this study also aims to devise an instructional method using the developed teaching materials and to verify its effectiveness. Therefore, this study devised a teaching material and an instructional method using a tablet computer to superimpose CG images of ions and electrons on the experimental instruments. The lessons were given to 146 students in the third grade of a public junior high school in Hiroshima, Japan. After the lessons, this research analyzed the results by assessment questions. The results revealed that the devised teaching materials and instructional methods were effective in helping students understand the concept of electricity. On the other hand, although the teaching materials were effective in helping students visualize the behavior of particles, a problem of poor visibility became apparent. These results suggest the need for further improvement of the teaching materials and better instruction that clearly relates the teaching materials to what has already been learned.

### Students' Motivation to Learn in High School Science in Japan

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Hiroshima  
University,  
Japan

Lessons in Japanese High schools tend to emphasize memorization, reproduction of knowledge and application of memorized solution patterns against the background of university entrance examinations. However, many researchers have noted that this memorization-oriented teaching has led to a decline in students' interest in learning science. The purpose of this research is to clarify the reality of high school students' motivation to learn in a science lesson and to derive suggestions for developing teaching methods to increase students' motivation based on the survey results. A

**Keywords**  
Motivation to  
learn, Students'  
independent  
activities, High  
school Science

Likert scale questionnaire was used to survey 199 second-year public high school students in Hiroshima prefecture, Japan. 71 students who have taken the chemistry course were also surveyed using an open-ended questionnaire. The results revealed that students are highly motivated to learn in lessons where they are involved in activities and thinking by themselves, such as observation, experiment, and discussion. On the other hand, analysis of the open-ended questionnaire revealed that students felt less motivated to learn in lecture-style lessons. These results suggest that devising a lesson development that intentionally incorporates students' independent activities is effective as a teaching method to increase students' motivation to learn.

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### **Lesson Study and Self-Esteem**

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3LS,  
Switzerland

**Keywords**  
Self-esteem,  
Multilevel  
analysis, Initial  
training

This research aims to measure links between self-esteem and Lesson study. Methodology : It was conducted in 2019 with more than 250 pre-service teachers during one semester. These students took part in a teaching module named BP43ENS, that implemented a kind of LS adapted to the initial training context. They answered 7 surveys, including the Self-Esteem Scale elaborated by Rosenberg (1969). The other surveys consisted of individual surveys (individual information like gender or age, self-evaluation of the competences developed through the module BP43ENS and questions about the LS they went through) and group surveys (information about how the LS group works). The collected data was analyzed in a quantitative perspective with a statistic model including MCO regressions, path analysis and multilevel analysis. Findings/Results : The results show that the participants increased their global self-esteem, despite the short investigation period (about 4 months). Some of this gain may be related to certain dimensions of the LS. In particular, the clinical approach of this form of research-training was valued by the students.

### **Lesson Study in the International Baccalaureate Diploma Program (IBDP) For Chemistry Higher Level**

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Mara College  
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**Keywords**

Lesson Study,  
Focus Subject  
Teacher, 5E  
learning Model,  
IBDP

International Baccalaureate Diploma Program (IBDP) known worldwide as a high-standard Diploma program that aims to promote students with the attitudes, knowledge, and skills of the 21st-century education. In the education management aspect, this programme requires extensive forecasting in teaching & learning, organising and monitoring of the schools' systems to meet the standards set up by the International Baccalaureate Organisation (IBO). Therefore, the purpose of this study is to explore the teaching and learning in class based on lesson study. The practices of lesson study involve in this research are investigation, planning, research lesson in class and reflection that involve one focus chemistry subject teacher, five chemistry subject's teachers as observer and 25 students in class. Findings based on the 5E learning model are summarised into themes and subthemes. Data analysis through open-coding, axial coding, and selective coding revealed the student's inquiry-based learning according 5E learning model which are engaging, exploring, explaining, elaborating, and evaluating.

### **Using the Word – Sentence – Paragraph (WSP) approach to develop Year 8 students' summary writing through reading analysis**

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Manabayeva

Kazakhstan

**Keywords**

WSP, Summary  
writing, Reading  
analysis

The study aimed at developing students' summary writing through reading analysis. Based on previously developed summary writing strategies, the WSP approach has been developed as the most suitable tool to reach the research aims. 24 Year 8 students were selected as research participants. The research data collected through document analysis, observations and focus group discussion was analyzed after each cycle. The findings such as improvements in students' analytical reading skills, lexical competence and reading and writing confidence were revealed and

further discussions have been made.

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### Creating an English Teaching Team for the Intensive English Program

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Japan

#### Keywords

global  
education,  
English  
education,  
collaboration,  
communication,  
Globalization

Eikei University of Hiroshima, a new prefectural university established in the central part of Hiroshima City in 2021, aims to foster a cadre of young people who have high aspirations to contribute to local communities and the world. One of the main characteristics of this globalized university is the Intensive English Program (IEP). This paper focuses on how the IEP teachers collaborate in a team. The IEP is provided in the initial half of the first year to develop English proficiency to the level which enables students to take any course in English in the following quarters. The IEP has three characteristics: small classes, level-divided classes (basic, intermediate, advanced) based on TOEFL ITP scores, and professional lecturers with diverse nationalities. In principle, we employ active learning, ensuring plenty of time for dialogue between students, group discussions, and Q&A, to make communication and learning effective. We are not only developing their English proficiency but nurturing their global mindset. We value teachers' communication as a team, including part-time lecturers, using MS teams as a means of communication, observing our classes with each other, and setting up a monthly meeting where we discuss our educational development and share our goals, concerns and updated information. Analyzing the questionnaires by both the students and lecturers also gives us a future perspective to improve this program.

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### **Improving ESL Primary School Learners' Speaking Skills Through Lesson Study**

Noel Jimbai

Pejabat  
Pendidikan  
Daerah  
Selangau,  
Malaysia

#### **Keywords**

ESL Learners,  
Speaking Skills,  
Multimodalities,  
Lesson Study,  
English  
Language

Among the four linguistic skills, speaking skill allows both speaker and listener to interact as the fulfillment of communication. Globally, English Language is of high demand across the continents and age groups and this implies the significant of mastering this skill. A study conducted in a rural school in Borneo Island is aiming to develop ESL learners' speaking skills through the implementation of lesson study. Initial observation on the Year 5 students revealed that majority of the students in the class had difficulty in speaking due to inadequate proficiency in the language which in turn impacted them to portray low confidence in speaking. Henceforth, Lesson Study was carried out by focusing on improving students' ability to interact in short exchanges through the application of multi modality in the teaching and learning. This research has involved two cycles of Lesson Study which involves 7 mixed abilities students in a low enrolment rural school. The data were taken from the results of the pre-test to post-test and classroom observation. Findings in the first cycle showed that the students were able to interact but most of them were not able to use the suitable statements as well as the grammar rules. Thus, the second cycle was conducted by improvising the lesson plan in the first cycle by adding another technique to solidify students' understanding on the usage of the correct statements and grammar rules in their speaking. The research showed that the students have improved their speaking skills and gained confidence too.

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### **Learning Study (LS) on Sirah Subject Amongst Year 4 pupils at a Selected Primary School in Port Dickson, Negeri Sembilan, Malaysia.**

Nadia Nazreen  
Mohd Nasir, Siti  
Fauziah Jaafar,  
Norliza Abd

Sirah is one of main subject in Kelas Al-Quran dan Fardhu Ain (KAFA) which is related to Prophet Muhammad (PBUH) history. Learning study (LS) process is employed as a method and strategy for

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Mohammad,  
Hasnah  
Abdullah,  
Faizah A. Karim  
Malaysia

**Keywords**

Learning study,  
Sirah, Primary  
school

educators to set up the aim to improve student's mastery and performance in the process of learning as suggested by DuFour, Eaker, and DuFour in 2006 . This study is conducted by applying a collaborative process embedded in LS where collaborative discussions among teachers teaching Sirah Year 4 in the respective school. The teachers planned, discussed and developed the respective lesson plan as well as the teaching and learning activities. Thus, during the execution of LS, teachers, an expert, and facilitators were present to observe the learning processes. After the learning observation, a reflection session was conducted. The reflection session was the most beneficial part of the LS process where teachers and participants provided feedback focusing on the pupils learning. Upon completing the reflection, teachers decided to enhance the teaching and learning process again taking into considerations of the constructive ideas and suggestions. The outcomes of this reflection were shared and collaborated among educators through reflective discussion and modification of lesson plan. LS needs to be practiced and cultivated amongst teachers in order to improve pupils learning processes. This LS with related to the teaching of Sirah has proven the pupils learning has had improved and the idea of teachers' collaboration has been implemented. Teachers were no longer working in silo.

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**Lesson Study (LS) in Arabic Language Lesson  
Amongst KAFA Year 5 Students at a Selected  
School in Seremban, Negeri Sembilan.**

Siti Nur Fikrah  
Mohd Jasri,  
Rabihah Abdul  
Wahab, Ma  
Nurul Shafiqah  
Muhamad  
Fadzli, Nurul  
Nadhira Jasmin,

Lesson Study (LS) has the impression of being complex despite being one of the tools in the Professional Learning Community. The truth is, it gives teachers the opportunity to be collaborative in conducting teaching sessions to improve students' learning experience through a more well-planned teaching and learning session. Furthermore, LS stimulates awareness for teachers to normalize LS in teaching and learning sessions. Taking into account that Arabic is considered

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Malaysia

**Keywords**

Lesson study,  
Arabic language,  
KAFA, School

a second language option in religious schools as well as other schools in Malaysia, Arabic is merged into KAFA syllabus for elementary education. Hence, this research aimed to focus on the students' ability to understand the concept of 'jumlah ismiyyah' and distinguish the signs of 'isim' through the LS process. This process was progressed collaboratively among teachers to accomplish the objectives of the lesson. A lesson plan was created to match the particular lesson's objectives. The lesson was observed by a group of teachers involved along with a knowledgeable individual and a few facilitators before reflecting on the lesson to evaluate its effectiveness. The lesson plan was improvised in need to enhance the lesson's efficacy to ensure all students were learning at a better rate. Through the approach of LS, students will be able to master Arabic effectively while also escalating teachers' productivity. Thus, LS is absolutely helpful in maintaining good practices in teaching and learning sessions. It also should be made a culture in the educational field to promote constructive teaching and learning.

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**Enhancing School Intellectual Capital through  
Lesson Study**

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China

**Keywords**

Lesson Study,  
School  
Intellectual  
Capital,  
Accountability,  
Teacher  
Development,

This presentation will discuss the potential of using Lesson Study to create school intellectual capital (SIC) for addressing curriculum development and implementation. Lesson Study is a form of teacher-led collaborative action research developed in Japan and advocated internationally to improve students' learning outcomes. SIC refers to the intangible assets that come from the teacher's tacit knowledge, the school's explicit knowledge document in policy, teacher plans, procedures and culture, and external relational networks supporting the school and teacher development (Cheng 2022). Lesson Study enhances teachers' tacit knowledge by retrieving, applying, and sharing pedagogical content knowledge (PCK) to enhance student learning outcomes. It can also strengthen the explicit knowledge

School  
Development

of school structural capital by codifying and storing the PCK in teaching plans and institutionalising a teacher's collaborative routine and practice to improve their teaching. Schools worldwide increasingly operate in a competitive environment as directed by the principles of accountability and efficiency. Yet, the school's intellectual capital has not been fully exploited and utilised for school development. Developing a school's intellectual capital has the potential as an innovative approach to improve the process of teaching quality of schools, including student learning outcomes. By drawing on a few case studies conducted by international scholars' on Lesson Study with SIC as an analytical framework, this presentation will provide insights into bringing Lesson Study into the area of school management for a new research dimension and determine the utility of intellectual capital for addressing the accountability issues.

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**“Less is more” – facilitating teachers’ professional development using Lesson Study**

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**Keywords**  
Malawi,  
mathematics,  
Lesson Study,  
facilitators' roles

This study aims at improving primary mathematics teaching in Malawi through professional development (PD) of teachers using a lesson study (LS) model. The project is a three-year collaboration between facilitators from two countries. Leading three teacher groups’ LS work and analysing various data material have transformed our role as LS facilitators. Grade 1 and 2 teachers (n=116) in one region of Malawi joined a PD including a seven-month-long process starting and ending with a three-day workshop. In between the workshops, teachers collaborated in LS cycles. They wrote research lesson plan drafts and PD facilitators gave written feedback. Facilitators visited each school to discuss the feedback. The participants revised the plan, taught the lesson and reflections on the research lesson were shared and discussed at the second workshop. Data analysed for this study includes video recordings of the two workshops, written notebook-reflections during the workshops and lesson plans. With

transformational learning as a theoretical framework, content analysis was used as an analytical approach. Analyses of written reflections, draft and revised research lesson plans made us aware of contextual factors related to teachers' views on mathematics teaching and learning. Additionally, analyses and discussions of video recordings highlighted awareness of core elements and the necessity of giving more space to participants in transforming our role as facilitators. We conclude that one LS cycle is far from enough to learn to be a LS facilitator. Being a group of facilitators and researching our own work are important parts of our transformation as facilitators.

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### **Learning Study in Teaching Jawi Writing Proficiency**

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Hasnah  
Abdullah, Siti  
Nur Salbi  
Mohamad,  
Norsiah Mohd  
Zan, Iffah 'Izzati  
Abdul Rahim,  
Abdul Rahim  
Ma'amor,  
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Malaysia

#### **Keywords**

Learning study,  
Jawi, Writing,  
Proficiency

'Jawi' writing is derived from Arabic writing which uses Arabic alphabets that are included in the Malay writing system too. In addition, 'Jawi' is equally important subject in 'Kelas Al-Quran dan Fardhu Ain' (KAFA) because all the subjects taught in KAFA using 'Jawi' writing completely. Therefore, it is very important for teachers to ensure the pupils to be competent in this subject. The ability of the pupils in this subject will reflect their performance in other subjects. This paper is designed to share how LS was employed in the teaching of 'Jawi' in developing basic words amongst Year 3 pupils. Four teachers discussed and planned the lesson plan as well suitable teaching and learning activities for this particular topic. Teachers have discovered the pupils' learning problem for this topic and had agreed to conduct LS. LS was chosen as it is a cyclical processes and provides opportunity for teachers to identify and rectify pupils' learning problems. In addition, LS also allowed teachers to discuss and gain constructive feedback from other people for example an expert and facilitators. The feedback obtained from them guided the teachers to improve the teaching and learning processes in future. The reflection session also allowed teachers to give ideas and suggestions critically. Not

only the learning of the pupils enhanced but the idea of working together were realized. This is a very positive environment for teachers to realize that they are not alone and teaching is a public property.

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### **Learning Study (LS) in Enhancing Spelling Skills and Mastery of English Adopted Words into 'Jawi'**

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Tumiran,  
Lelawati Mazeli,  
Hasnah  
Abdullah,  
Manoriza Abdul  
Malek

Malaysia

#### **Keywords**

Learning study,  
Spelling skills,  
Mastery, English

'Jawi' is one of the compulsory subject in the 'Kelas Al-Quran dan Fardhu Ain' (KAFA) at all levels. KAFA is an extra education provision for all Muslims pupils age seven until eleven years old. Jawi is not only a subject but also applies to all other subjects in writing as it is derived from Arabic alphabets. All pupils are expected to be able to read and write in 'Jawi' to enable them to learn with understanding KAFA. This paper is designed to reveal the findings of teaching and learning 'Jawi' with respect to LS in action. The specific topic was chosen due to pupils' low performance in the topic. There were two teachers involved teaching this subject. The LS processes began with the planning and identifying the issue related to the topic. Upon agreement with the issue, teachers started to design the lesson plan and appropriate learning activities for the topic. It was a pleasure for the teachers to practice LS for the very first time. The LS was conducted with the present of teachers, an expert and also facilitators. The most meaningful session was the reflection whereby teachers and all participations involve in giving ideas, comments and suggestions to ensure pupils' learning process in place. The teaching session was video recorded. Teachers experienced the working collaboration and constructive discussion. The pupils were observed as having high interest and engaged in the learning process. LS has brought lights and new momentum for teachers in KAFA teaching and learning.

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### **The Practice of Reflection in and on Action and its Impact on the Teachers' Lesson Design**

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**Keywords**  
Reflection,  
interaction,  
lesson design,  
improvement

An important component of Lesson Study is reflection. This article is aimed to present the result of a descriptive study looking at the nature and the result of reflection by a group of a junior high school teachers in West Sumatera, Indonesia. Nine teachers involved taught 3 different subjects (English, Social Science, and natural Science). The data was collected through observation, interview, and documentation. Prior to the commencement of the study, the teachers were introduced to the concept of reflection in action and reflection on action. The instructional stages followed 'plan', 'do', 'see' of Lesson Study. The data was analyzed qualitatively. The emerging themes were: 1) the most focus of the teachers' reflection in action, 2) the nature of the teacher interaction in the reflection on action, and 3) the lesson design improvement. The result of the analysis shows that the focus of reflection in action was on class-disturbing incidents. The interaction pattern in the process of reflection was rather monotonous. A promising result of the practice of reflection was the improvement of the teachers' lesson design. The result is expected to enrich the theory of reflection in Lesson Study and provides teachers with insights how reflection should be done.

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### **Learning Study (LS) a Tool to Enhance Ability and Participation in an Adab Subject: A case at a Selected Sekolah Agama Rakyat in Seremban, Negeri Sembilan.**

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Entan, Mas Ayu  
Binti Abdul  
Rahman, Noor  
Ayuni Binti Abd  
Wahab,  
Nurciana Binti  
Nasaruddin,  
Mohd Ashraf

Adab is a subject that must be studied by all students who follow the Kelas Al-Quran dan Fardhu Ain (KAFA) Class. This subject aims to ensure that students can understand and appreciate matters related to ethics, personality and adherence to the Islamic teachings. Pupils are also expected to be able to translate learning into their daily lives. A LS related to the subject of Adab, namely Adab with Allah SWT was selected because the teacher detected that there were problems in

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Amir Intizam  
Bin Othman,  
Assurya 'El Lilya  
Binti Mohamad

Malaysia

**Keywords**

Learning study,  
Tool, Ability,  
Participation,  
Adab

students' learning on the topic. Thus, four teachers have collaborated to implement LS. Discussions among teachers include producing a Daily Teaching Plan (RPH) as well as identifying appropriate Teaching and Learning (PdP) activities. LS is implemented in the presence of teachers, an expert teacher and two mentors. A reflection session was held as soon as the LS ended where teachers, expert teachers and mentors gave feedback on the LS. It was observed that teachers collaboratively prepare relevant materials and receive constructive suggestions, remarks and opinions to ensure students' learning is at a good pace. LS also found that students learn better when teachers use a contextual approach with appropriate examples. Pupils also participate actively during the learning process. This proves that the LS approach has been successful in ensuring that students' learning takes place. In this regard, LS should be used as a collaborative tool that needs to be practiced and cultivated among teachers.

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**Extinction Crisis of Students' Voices Superseded by Correct Answers in Science Lesson**

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Human  
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Japan

**Keywords**

students' voices,  
equitable  
learning,  
knowledge  
creation

SDG's goal number 4 raises a critical issue of achieving inclusive and equitable education for all children, which requires more than just transferring information. Lesson study communities keep working on social-constructivist-based collaborative lessons to encourage students to collaborate with their peers and proactively participate in lessons. However, in many cases, students' participation could not arrive at creating or reconstructing knowledge. In response to this matter, rather than proposing a way of teaching, this research will enrich lesson study perspectives by eliciting fundamental factors in classroom settings to unfold students' authentic voices. This research conducted a case-based study from two middle-school science lessons. Qualitative method using transcript-based lesson analysis is employed to describe and analyze students' and teacher's utterances. This study identified some critical issues of students' voices in terms of authentic learning. Collaborative work in problem-

solving enables students to share ideas. In one case, students exchange voices during group work. When the other group explained correct answers, students stopped working and started overwriting their original ideas with the correct answers. Correct answer transmission oppressed students' voices and knowledge creation. In other cases, even though a student presented correct answers to the whole classroom, a group of other students continued inquiring for better possible solutions. Students' original voices could be an inquiry foundation to empower their knowledge reconstruction. Based on our findings, enhancing our sensibility and insights into students' voices, making them float during participation, and providing students opportunities to construct knowledge are necessary to realize equitable learning for each student.

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**Using flipped learning to increase learners' motivation and self-regulation in the English language classes**

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School,  
Kazakhstan

**Keywords**  
Flipped learning,  
writing skills,  
English

This research contributes to improving the students' (aged 14-15) English language writing skills in an elite school in Kazakhstan. Observations of students during the classes related to studying writing skills demonstrated that learners were less motivated and less interested. They did not show a willingness to complete tasks during the lessons. Consequently, this study set out to resolve the mentioned problem. It adapted instruments to improve writing skills in and outside of the classroom. Thirty-seven students in groups of 12-13 learners received support. It was decided to use blended learning (flipped) as a form of active learning. The flipped approach is considered beneficial in four ways: tasks are differentiated by students' needs, students feel responsible for their learning since they should prepare materials to teach their peers, and it increases their self-confidence since they come to the class knowing about the subject in advance, and the class is not teacher-centered. Instead, it becomes learner-centered because students are actively engaged. According to Bergmann

and Sams (2012), blended learning can be described as a flip of locations. In other words, whatever learners have been doing in the classroom gets performed at home and vice versa. Results increased by 1-3 points on a six-point scale for 89% of the students. Thus, the use of flipped learning enhanced learners' motivation and responsibility for their learning as well as they became engaged in the regulation of their knowledge. Consequently, the results of most students improved, whereas few learners showed minimal development in their writing.

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### **Considerations for successful introduction of Lesson Study in schools**

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#### **Keywords**

Activity theory, lesson study, activity system

The benefits of Lesson Study in teacher development are well documented, however, its introduction is often not a smooth process. The aim of this paper is to share our experiences on the introduction of Lesson Study in one education district in South Africa. We used Activity Theory to examine Lesson Study as an activity system. According to AT, activity system is characterised by tools, subject, rules, community, division of labour, and object which exist as an amalgam. In the context of this paper human interactions refer to the involvement of different stakeholders in LS as an activity system. AT is generally used to understand and interpret human interactions. Preliminary findings seem to be pointing more to weaknesses about rules and division of labour. For instance, misunderstanding of procedures (rules) and roles (division of labour) by different stakeholders. Drawing from the notion of activity system as an amalgam, if one of the components are not effectively executed, the expected outcome is unlikely to be achieved. This study alerts us to critical considerations in introducing Lesson Study as a teacher development approach.

**Learning Study: A Tool for Professional Development and Innovation in Extra Curriculum Course at a Selected Teacher Training Institute in Malaysia**

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Malaysia

**Keywords**

Learning study, Tool, Professional development, Innovation, Extra curriculum, Teacher training

Extra curriculum is a compulsory components for all teacher trainees to attend at all Teacher Education Institute in Malaysia. It is a value added activities for teacher trainees to experience the reality of school context. Therefore this paper is designed to focus students' learning on the topic of bandage or sling cloth. Learning study is determined to be a suitable tool to employ. The nature of this topic is very much depending on the practical aspects or hands on where teacher educators and teacher trainees need to collaborate in order to ensure all teacher trainees be able to produce the bandage accordingly. LS requires educators to work collaboratively in planning the lesson, activities and choosing the best way of delivering the topic. It was discovered that there was a problem related to students' learning for this topic especially in terms of tying the knot for the bandage tightly. Upon completion the LS a reflection session was conducted and this is where educators, the expert and observers discussed and provide feedback related to the learning processes. Teacher educators learnt best collaboratively and realized that teaching is fun and the constructive ideas and suggestions allowed them to better perform in future. LS is strongly suggested to be the cultivation amongst all educators. as it also a means to teaching innovation in the simplest method in carrying out this topic - tying bandage.

**The Effects of Storytelling as a remedial approach on English proficiency of Junior High School Students**

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This study is to investigate the effects of storytelling approach on English proficiency of 40 Junior high school students in a short-term remedial course. The participants (24 males and 16 females) received English

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**Keywords**

Storytelling,  
English  
proficiency,  
remedial course,  
Junior High  
School Students

storytelling approach for four months. The instructor taught students vocabulary were taught in order to equip subjects for participation in reading activity while English storytelling. Students were encouraged to share their feelings toward stories with classmates. The mixed-methods were adopted in this study to collect both quantitative and qualitative data. The pretest and post-test were administrated and oral interviews were conducted at the end of the study. Qualitative data analyses are based on the interview and their expressions related to those English picture books. Data were calculated through SPSS v 27. Wilcoxon Sign Rank test was used to the differences between pre-tests and post-tests and found that 36 participants improved their English abilities. Results from both the quantitative and qualitative data revealed that some participants quite engaged really enjoyed English storytelling which increased their English proficiency and confidence. Research limitations: The limitation of this study is only 40 participants who are from Taiwan. It should be noted, however, that the result in this study could not represent the total population of Taiwan students. Therefore, the result of this study simply serves as a starting point, and in the future a larger project should be conducted. Furthermore, the results of the interview showed that storytelling to certain extent can influence students' attitude towards English learning and enable them to thrive when facing adversity.

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**Harnessing Dramatic Creativity: A Lesson Study  
on Enhancing Creativity in a Digital Puppetry  
Project**

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Iksan

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Kebangsaan

Digital puppetry is the manipulation and performance of an integration of digitally animated two-dimensional or three-dimensional characters and objects, text, audio recording and music that are produced and presented in a virtual environment. While it is utilized most frequently in the production of movies and television shows, it has also been utilized in education such as in language teaching. This study was conducted to

Malaysia

**Keywords**

Digital  
Puppetry, Pre-  
service teachers,  
Creativity,  
Drama, ESL

examine the instructional strategies to harness dramatic creativity through digital puppetry production among 91 TESL pre-service teachers in the course 'Drama in Action'. A group of teacher educators including the researchers collaboratively observed and evaluated the teaching and learning processes which involve these participants to work collaboratively to write and edit drama scripts, develop storyboard, selecting and creating images of characters and backgrounds, doing voiceover, and choosing suitable music to create a tone and mood suited to the plot of the story. The findings of this study revealed while the pre-service teachers were able to produce creative and dramatic digital puppetry shows, further instructions could have helped them to improve on their English language accuracy and pronunciation and digital techniques to make them more effective. This lesson study would help improve the instructional strategies of the 'Drama in Action' course so it may harness on dramatic creativity when producing digital puppetry as a pedagogical tool in an ESL classroom.

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**The Influence of Professional Learning Community (PLC), Administrators Support and Motivation Towards Teachers' Commitment of Secondary Schools in Sandakan District.**

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**Keywords**

Professional  
Learning  
Community,  
Administrators  
support,  
Motivation,

The purpose of this research is to identify the influence of professional learning community (PLC), administrators support and motivation towards teachers' commitment of secondary schools in Sandakan District. This research is specifically to identify whether there is a significant correlation between PLC, administrators support and motivation with teachers' commitment. Observation survey was carried out to 118 teachers from two secondary schools in Sandakan district as the pilot study. The selection of the respondents were best on random sampling. A set of an adapted questionnaire was used as the instruments. There were 25 PLC items used in the questionnaire which was adapted from Learning Community Questionnaire Revised. While 16 items

Commitment used for administrators support and motivation and 23 items for teachers' commitment. Data obtained were processed by using SPSS. Descriptive analysis showed that all variables was at a high value. While inference analysis showed different significant levels for all variables. Based on this statistic data, it can be interpreted that the practice of PLC among teachers in Sandakan is influenced by the support given by the administrators and also their intrinsic and extrinsic motivation which lead to their commitment. Since PLC is still considered new among teachers in Sandakan district, lots of efforts and intervention taken to ensure the practice of PLC among teachers is prioritised. Same goes to administrators support and motivation. It is hoped that this research can provide an invaluable information for the purpose of improving the practice of PLC, administrators support, motivation and also teachers' commitment.

## 234 **Results of Transcript Based Lesson Analysis Used to Improve University Seminar Courses**

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**Keywords**  
Transcript Based  
Lesson Analysis,  
Lesson  
transcript,  
Teacher's  
question

Improving the quality of education today is directly related to improving the quality of regular education. Since in Mongolia, there is almost no experience of conducting case studies at the university level, we used a note-based course analysis methodology to analyze teacher training university seminars and conducted research to improve teacher methodology. In the study, the first grade students' science study seminar of the school was selected and the lesson notes were taken. The notes were analyzed in collaboration with the teacher, consulted on how to improve the teacher's questioning and discussion methodology, and planned for the next lesson. This article will re-record the second lesson, translate it into notes, and present the results compared to the previous lesson. The comparative analysis of the first and second lessons showed positive results, such as a decrease in the number of teacher speeches, an improvement in the quality of questions, and an increase in the frequency of keywords of

students. This analysis is of research and practical significance as it provides an opportunity to analyze teacher-student interactions in teacher training seminars and to improve teacher methodology, using the note-based lesson analysis method as a form of subject research in teacher training.

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### Implementation of CLIL in SDG-targeted Communicative English Class

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#### **Keywords**

CLIL, SDGs,  
communication,  
English  
education,  
globalization

How can we effectively conduct “communicative English” classes with their target to familiarize students with SDGs through the CLIL method? This paper focuses on how effectively these classes were conducted through an active learning method known as CLIL by showing the authentic class materials. The “Communicative English” course is an elective subject that 16 first-year students took in the 2021 academic year at Eikei University of Hiroshima, a new prefectural university established in Hiroshima City in April 2021, primarily focusing on learning about SDGs. The students collaboratively learned about SDGs through the active learning strategy, all in English. CLIL doesn’t feature learning English per se but learning some “contents in English.” Realizing SDGs through its 4Cs: Content, Cognition, Communication, and Culture, the students aim are expected to work in the international arena as global citizens in the future. The textbook “CLIL SDGs—Sustainable Development Goals” we used has a variety of exercises to enhance the students’ interest and motivation for learning SDGs. It consists of the following exercises: 1. Background (facts & figures), 2. Topic-related vocabulary check, 3. Knowledge check (quiz), 4. Understanding SDGs, 5. Reading, 6. Basic grammar exercises, 7. Reading graphs and charts, and 8. Research To better understand SDGs with their historical background from an expert’s point of view, we invited a guest lecturer to our class. Thanks to this special lecture, the students had an excellent opportunity to listen to the expert working globally and deepen their understanding of SDGs as the issues which are closely related to their lives.

This paper also shows how effectively the lecture was given with many informative slides. Learning about SDGs through the CLIL method efficiently increased the students' interest in global issues and enhanced their motivation to study harder.

### **Effects of Group Discussion Towards Students' Conceptual Understanding - Data from Lesson Study**

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**Keywords**  
conceptual  
understanding,  
group  
discussion,  
lesson study

This research investigated how group discussion affects primary students' conceptual understanding of the concept of area. Research lessons were a component of this research. In this paper, the focus is on the observations collected by lesson-study participants. Methodology - Students in this school are expected to be able to participate independently in group discussions where they share their ideas freely during problem solving. This study involved students who solved problems in groups and those who solved problems individually during lessons. The data collected included pre-test and post-test scores, observations by lesson-study participants and reflections by the researcher. Findings - The post-test results suggest positive outcomes of group discussion on conceptual understanding. In this paper, we emphasise on the qualitative data gleaned from lesson-study participants' observation notes. Originality - This research was conducted during the COVID-19 pandemic when students were using digital platforms in remote learning. Students used Roundtable, a feature of Noosphere - the digit platform used, to create their own small groups, invite group members and conduct discussions to solve mathematical problems. Theory - Based on the theory of Jaques (2004) argues that the purposes and benefits of group learning coincide closely with the goals of higher education in general. Keywords - Lesson study of group discussion.

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### **Effects of Group Discussion in Online Learning on Mathematical Problem-Solving Skills on Primary Students**

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Tyas, Indonesia

#### **Keywords**

group discussion, online learning, mathematical problem-solving skill, primary students

The aim of this study is to see how digitalized group discussion affects students' problem-solving skills in Mathematics. Improving students' problem-solving skills has always been a challenging topic in Mathematics education. The purpose of the study is to investigate the effects on group discussion using online platform on Mathematical problem solving. Design/methodology/approach - This study investigated students who did group discussion and answered mathematical problems. The students solved problems collaboratively and the others solved problems individually. Students received the same treatment otherwise. The data collected includes solutions to problems in the pre- and post- tests, observation of the students using lesson study approach and students' interview. Findings - Digitalized group discussion seems to have positive impacts towards the students' ability in problem solving, such as defining problem, planning for solution, implementing best solution, and checking the solution. This study focuses on the lesson study aspects of the study. Originality/value - This study addresses the process of students' discussion in small groups using digital platform (Roundtable feature on Noosphere) and its impacts on the way they solve problems individually during pre- and post- tests.

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### **Internalization of Di Zi Gui Values - Character Education through Positive Discipline in the Learning Process**

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Indonesia

#### **Keywords**

Di Zi Gui Values,

The decline in moral values, character and social values in society is worrying. Hence, character education is the main focus in Indonesian education. Pahoa School integrates Di Zi Gui values to strengthen its character education program. In brief, Di Zi Gui focuses on three areas - love, truth and intelligence. The internalization of these values can be achieved using various strategies.

Character Education, Positive Discipline, Learning Process

One of them is through positive discipline. Positive discipline is a strategy to discipline students without the use of punishment. They learn through realization, consequences, responsibility, and mutual respect so that values are internalized and become the students' character. In this study, the following research questions were investigated through a lesson-study process: (1) how educators apply a positive discipline approach in the process of internalizing Di Zi Gui values in the learning process in the classroom?; (2) how the school environment supports the process of internalizing Di Zi Gui's values using a positive discipline approaches? (3) how the application of positive discipline approaches impacts the internalization of Di Zi Gui's values of children? This study uses Peter Berger's theory of internalization and the theory of positive discipline in the learning process. This research uses a qualitative method with a descriptive approach.

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### **The Effect of Independent Learning and Mathematical Disposition on Mathematical Problem-Solving Ability in Grade 7 Algebra**

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Indonesia

**Keywords**  
Independent Learning, Mathematical Disposition, Mathematical Problem-Solving Ability, algebra

Lesson or Learning Studies in different cultural, subject, and learning contexts (primary and secondary schools)  
Abstract Purpose - The purpose of this study was to determine: 1) the direct effect of learning independence on mathematical disposition, 2) the direct effect of learning independence on mathematical problem-solving abilities, 3) the direct effect of mathematical disposition on mathematical problem-solving abilities, 4) the indirect effect of learning independence through mathematics disposition on mathematical problem-solving abilities. Design/methodology/approach - The method used in this study is a correlational survey method with a sample of 56 grade 7 students. Data was collected using achievement test and questionnaire. The achievement test comprised eight algebra problem-solving tasks which have been tested for validity and reliability. The questionnaire comprised 24 questions about independent learning and 31 questions about

mathematical disposition which have also been tested for validity and reliability. Data analysis to answer the research hypothesis was conducted using path analysis with the help of SPSS version 25. Findings - The results of the study showed that: 1) there was a significant direct effect of learning independence on mathematical disposition, as evidenced by the sign value. = 0.000 < 0.05 and  $t_{count} = 14.963$ , 2) there was a significant direct effect of learning independence on mathematical problem-solving abilities, as evidenced by the sign value. = 0.000 < 0.05 and  $t_{count} = 3.987$ , 3) there was a significant direct influence of mathematical disposition on mathematical problem-solving ability, as evidenced by the sign value. = 0.000 < 0.05 and  $t_{count} = 7.128$ , 4) there was a significant indirect effect of learning independence through mathematical disposition on mathematical problem-solving abilities, as evidenced by the value of  $t_{count} = 7.397 > t_{table} = 2.006$ . Significance for theory/practice - This study is useful to determine whether there is an influence of learning independence and mathematical disposition on students' mathematical problem-solving abilities and how much contribution of learning independence and mathematical disposition variables to students' mathematical problem-solving ability variables. This research is useful for educators to find out the most influential variables on students' mathematical problem solving skills so that educators can improve students' mathematical problem solving skills. Keywords independent learning, mathematical disposition, mathematical problem-solving abilities.

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### **Lesson Study as a Tool for Teacher Learning – Case Study of Lower Primary Mathematics Teachers**

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Indonesia

**Keywords**  
lesson study,

This research aims to investigate how to lesson study support teachers in conducting engaging Mathematics lessons. Design/methodology/approach - A qualitative study was carried out on a sample of ten teachers teaching lower primary mathematics to understand how

teacher learning,  
lower primary

lesson study contributes towards their lesson planning skills. Data was collected using individual interview and observation. Students were surveyed using a questionnaire to determine students' emotional engagement. Findings - This research provides insights on the way lesson study reinforced lower primary teacher's teaching practice. Analysis suggest that teacher's lesson planning skills improved through lesson study. Students also found the lessons engaging. This paper focuses on the mechanism of teacher learning in the lesson-study process. Research limitation - Further research could be more focus on the effectiveness of the lesson to promote students' cognitive engagement. Originality/value - The studies explore lesson study as a tool to systematically develop teachers' ability in building up a repertoire of ideas for engaging lesson..

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### **Forming In-School Lesson Study Facilitators in Switzerland**

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Switzerland

**Keywords**  
Facilitator  
Training,  
Secondary  
School, In-  
Service  
Teachers

During the 2021-2022 school year, a group of five teachers of Renens Secondary School (Switzerland) expressed the wish to be formed as facilitators, as several disciplinary LS groups were to start in their institution (French as first language, German as second language, and Music). The 3LS at HEP VD (Lausanne Lesson Study Laboratory, Switzerland) organised an adapted facilitator training for these teachers, which is the core of this presentation. This formation took place simultaneously with the participants' own facilitation in the LS groups at school (as an apprenticeship): we could prepare the teachers for key-moments in the process of facilitation, and in between training sessions, the future facilitators could practice with their LS groups, and then debrief with us. We prepared guidelines in the form of a compendium of practices (a real pro memoria), and this handbook was used by the teachers throughout the training. The handbook is culturally relevant regarding Western Switzerland needs, i.e. place-based. During the training, we met regularly, as if we were in an LS

process ourselves, to prepare the following meetings. Through audio- and video recordings, as well as through the teachers' feedbacks, we were able to constantly adapt the training to the teachers' needs. This experience allowed us to clarify what are the sine qua non factors thanks to which a facilitator training within a school can be successful. Our presentation is going to focus on these aspects.

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### **How Drawing Can Be An Appropriate Tool to Equip Facilitators**

Pia-Ingrid  
HOZNOUR,  
Switzerland

**Keywords**  
Analysis Tool,  
Drawing,  
Professional  
Skills,  
Facilitators

It is always difficult for the researchers and facilitators to assess not only the impact of an LS process on the teachers, but the way the process makes conceptual change happen, without recording, transcribing, and analysing an often enormous amount of data. We adapted a tool designed by Thomas et al. (2001), in order to gain fine-grained information about the changes happening in teachers' conceptions. It is a unique tool, that allows to scrutinise the data at different levels: the individual, the group, the teaching paradigms, the conception of teaching and learning, and the environment of teaching. This allows to make relevant choices in the analysis to carry on. The non-used data is not eliminated; it is only set aside, ready to use if necessary. This tool allows the researcher to select relevant focus groups and therefore minimise the transcriptions. The aim of this presentation is to present this tool and give an example of use in a LS.

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### **A Visual Classroom – Using Visuals to Enhance Students' Learning of Phonemic Awareness Skills in School-based Dyslexia Remediation (SDR) Programme**

Ananthini  
Thanabalan  
  
Corporation

Despite SDR being an intensive and regular intervention, our students continued to show difficulties with blending of words. Hence, our lesson study aimed to use two types of visual supports namely, the Blending

Primary School,  
Singapore

**Keywords**

Lesson study,  
Visual aids,  
Phonics

Slide and Picture Cards on student engagement during SDR lessons. Not only should the resulting lesson activities require little teacher's preparation, but they should also be implemented repeatedly in a variety of lessons, thereby increasing the sustainability of its application. Our findings revealed that students who struggled with holding individual speech sounds with their phonological memory benefited from the instruction used for the Blending Slide. The student who was tasked to match picture cards also improved in word memory, spelling and recalling. It also implied that the SDR instructor had to be innovative to implement different strategies to help them learn during the lesson. This strategy would work for the visual-kinesthetics learner as they could see and move the phonograms to help them blend the words. Students with dyslexia needed the stimulus to be touchable and user-friendly. SDR instructors had to guide them to grasp the concept of word blending creatively and focus their attention to learn this important skill and eventually mastering it. Moving forward, our students can practise the skill on their own independently. As they practice the word blending skill, this will help in their reading fluency which will ignite their joy of reading in the future.

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**Development, Implementation and Publication of Oracy Curriculum through Research Lesson Studies (RLS) Made Public Across Schools, Systems and Countries: Potential for Teacher Research Informed Policy**

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Cambridge,  
United Kingdom

**Keywords**

Teacher  
Research  
Exchange,

While literacy and numeracy are core school subjects globally, oracy (the effective use of spoken language in communication and learning) is rarely overtly taught in most countries. Barnes (1971), Mercer (1995, 2010) and others have revealed that teaching oracy can strongly enhance students' abilities to think and learn and can help prevent underachievement in disadvantaged or oppressed groups. RLS, a lesson study variant harnessing oracy learning theory, is proving a successful means of integrating oracy across the curriculum

Research Lesson Study, Oracy, Policy development, platform

(Dudley, Lang and Bannon, 2020) especially when schools collaborate in this process (Dudley and Mercer, 2017). This paper presents findings from research lesson studies conducted and shared between 2021 and 2022 in Norwegian and English collaborative school partnerships both using the Cambridge Teacher Research Exchange – Camtree - to share ideas, tools and outcomes from lesson studies developing oracy in different curriculum subjects. Video excerpts from the lesson studies illustrate the process and benefits for students, teachers and curriculum; school leaders outline the benefits of working collaboratively in this way - in their own partnerships and when sharing their lesson studies across the two countries. The paper concludes by examining the potential for such a platform to provide a rich online workshop community connecting practitioners and publishing their lesson studies worldwide. It will discuss policy and system leadership benefits arising from regular systematic review of lesson studies and practitioner research published on Camtree with the potential this holds for establishing teacher research informed policy as a new norm.

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**Professional Learning Community (PLC) Practices Among Teachers can Improve Science Teachers' Pedagogical Skills and Student Excellence in Secondary Schools of School Transformation Program 2025 (TS25)**

Norlia Mat Nor,  
Malaysia

**Keywords**  
Professional Learning Community (PLC), Pedagogical Skills, STEM,

Penekanan kepada kemahiran guru sains dalam pengajaran dan pembelajaran (PdP) amat dititikberatkan dewasa ini. Dasar Revolusi Perindustrian Keempat (4IR) Negara telah diwujudkan dan diujarkannya dengan Dasar Sains, Teknologi dan Inovasi Negara (DSTIN) 2021-2030 yang bertujuan untuk membangunkan Malaysia sebagai sebuah negara berteknologi tinggi menjelang tahun 2030. Sebagai asas kepada melahirkan modal insan yang mendalami ilmu Sains, Teknologi, Kejuruteraan dan Matematik (STEM), guru sains di sekolah perlulah lebih peka terhadap ilmu pengetahuan

Science Teacher,  
Collaborative  
Culture

dan berkemahiran dalam pedagogi bagi menarik minat murid seterusnya dapat menyahut dasar kerajaan untuk mewujudkan daya saing negara melalui peningkatan produktiviti dan pembangunan negara melalui aplikasi teknologi. Kajian ini bertujuan untuk mengenalpasti pembangunan professional guru melalui amalan komuniti pembelajaran profesional atau professional learning community (PLC) di kalangan guru dapat meningkatkan kemahiran pedagogi guru sains dan kecemerlangan murid di Sekolah Menengah Program Transformasi Sekolah 2025 (TS25). Seramai enam orang guru sains dan 192 orang murid tingkatan tiga di Sekolah Menengah Kebangsaan Alam Damai telah terlibat secara langsung dalam kajian yang dijalankan. Dokumentasi sekolah, pemerhatian, soal selidik dan temubual adalah kaedah penyelidikan yang digunakan dalam kajian ini. Dapatan menunjukkan bahawa PLC dapat membantu guru untuk memberi tumpuan kepada proses PdP bersama murid, ilmu dan kemahiran guru juga semakin berkembang kerana terlibat dalam budaya kolaboratif, dan bekerja berorientasikan tindakan seterusnya dapat melahirkan murid yang cemerlang dan mengamalkan serta membudayakan ilmu terutamanya berkaitan STEM. Kata Kunci: - Komuniti Pembelajaran Profesional (PLC) - Kemahiran Pedagogi - Guru Sains - STEM - Budaya Kolaboratif

Abstract Emphasis on the skills of science teachers in teaching and learning is very much emphasized today. The National Fourth Industrial Revolution (IR4.0) Policy has been established and aligned with the National Science, Technology and Innovation Policy (DSTIN) 2021-2030 which aims to develop Malaysia as a high-tech country by 2030. As a basis for producing human capital with deep knowledge of Science, Technology, Engineering and Mathematics (STEM), science teachers in schools need to be more sensitive to knowledge and skills in pedagogy to attract students and then be able to respond to government policies to create national competitiveness through increased productivity and national development through technology applications. This study aims to identify the professional development of teachers through the practice of professional learning community

(PLC) among teachers can improve the pedagogical skills of science teachers and student excellence in Secondary School Of Transformation Program 2025 (TS25). A total of six science teachers and 192 form three students at Sekolah Menengah Kebangsaan Alam Damai were directly involved in the study. School documentation, observations, questionnaires and interviews were the research methods used in this study. Findings show that PLC can help teachers to focus on the PdP process with students, teachers' knowledge and skills are also growing because they are involved in a collaborative culture, and action -oriented work can produce excellent students and practice and cultivate knowledge especially related to STEM.

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### **Application of Semantic and Syntactic Approaches to Improve Mandarin Grammar Understanding of Middle School 8th Graders at Pahoa School**

Mei Rianto  
Chandra,

Indonesia

**Keywords**  
lesson study,  
semantic  
approach,  
syntactic  
approach,  
grammatical

Understanding in semantic and syntactic studies provides a more detailed and comprehensive picture of a language, especially grammar. This study examines the application of semantic and syntactic approaches to the grammar understanding of Pahoa Junior High School students. Using a qualitative to analyze the ability of 26 students' in understanding of the chinese grammar of "yi ... .. jiu". This paper highlights key professional learning in each of the three stages. It also discusses the implications of the impact of lesson study on improving classroom practices in the area of language teaching by focussing on teachers examining their own practice and the practice of others.

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### **Analysis Of Students' Learning Motivation Towards Online Learning At Pahoa High School**

Prita A. Karyadi,

Indonesia

This study aims to find out the motivation of learning learners during online learning on buffer solution materials with discovery learning models at Pahoa High School. Online learning is a teaching and learning

**Keywords**  
Learning  
Motivation,  
Online Learning,  
High School

process that is carried out remotely through the use of various communication media. The method used in this study is the qualitative descriptive method. This research was conducted at Pahoa High School in 2022 with 53 students of XI MIPA as research subjects. This study's data collection techniques were carried out by questionnaires, observations, interviews, and reflective journals. The instruments used were adapted from several study motivation research journals. Data analysis techniques in this study were carried out by grouping data into several categories, namely (1) Student learning concentration during online learning, (2) Student constraints during online learning, (3) Advantages of learning during online learning, and (4) Learning weaknesses during online learning. This research is reinforced by data showing that 90.3% of learners have a good concentration of learning, 46% of learners have high curiosity, 41% of learners have a high spirit in expressing opinions and ideas, 92% of learners have high learning independence, 54% of learners have good learning readiness, 93% of learners have good enthusiasm and learning drive, 78% of learners are serious about doing tasks, and 60% of learners have high self-confidence. From the results of the data analysis, it can be concluded that students have good learning motivation in online learning at Pahoa High School.

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### **The Implementation of Anchor Task to Encourage Student Engagement in Mathematics Learning**

Serly Ayu  
Saputri,

Indonesia

**Keywords**  
anchor task,  
online learning,  
student  
engagement

One main issue in the implementation of online learning during the pandemic was student engagement. Teachers needed to re-think about how to engage students in learning. In this paper, we use lesson-study data to examine the implementation of anchor tasks to engage students during online lessons. Anchor tasks are rich problems that involve students actively in the learning process. Lesson-study notes and other qualitative data on nine grade seven students were used to provide a glimpse into the mechanism of student engagement during mathematics learning. The results suggests that

the implementation of anchor tasks contributes positively to students' engagement in mathematics learning.

**260 Online Learning Trajectory of Probability through Guided Discovery**

Widhi Irjayanto,  
Indonesia

**Keywords**  
design research,  
guided  
discovery, online  
learning

This research aimed to develop an online learning trajectory of probability material through guided discovery. The trajectory was carried out to provide an online learning activity in probability (experimental probability and theoretical probability). Students used Geogebra, a digital tool and Noosphere, an online collaborative platform for discussion. This research used a modified lesson study of three stages, namely preparation and design, teaching experiments, and retrospective analysis. The instruments used in this study include the Hypothetical Learning Trajectory (HLT), student activity sheets, field notes sheets, interview sheets, videos and photos documentations, and conceptual understanding tests. This research results Learning Trajectory (LT) which contains a series of learning processes in 3 activities, that is find the experimental probability of tossing a coin, find the experimental probability of throwing a dice, and understand the concept of experimental probability and theoretical probability. Finally, a test was conducted to measure students' conceptual understanding of probability. The results of the learning experiment show that online learning with guided discovery can facilitate students in understanding the concept of probability.

**262 Incorporating Learning Study Approach In Teachers' Professional Learning Communities (PLC)**

Zulkifili Saleh  
Kota Setar  
District

A highly structured process of teachers' professional learning communities (PLC) through collaboration, observation, reflection and practice has been implemented in supporting teachers' professional

Education  
Office, Malaysia

**Keywords**  
Professional  
Learning  
Communities,  
Learning Study,  
The Variation  
Theory, Object  
of Learning

development. This study explored the method of PLC through learning study approach which is originated from Hong Kong that would encourage and support mathematics teachers to adopt and apply strategies to enhance students understanding. Teachers completed cycles of researching, planning, teaching, evaluating and reflecting the lesson to help students to learn specific objects of learning. Interviews were conducted with the teachers involved, transcribed and interpretively analysed. The findings of the study reveal that teachers were motivated as they developed knowledge of mathematical learning in their setting. More importantly, the teachers are able to form a professional learning community among themselves. Evidence from the study suggests the importance of incorporating learning study approach to enhance teachers' pedagogical practices.

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### **The Usage of Anchor Task : Zeno's Paradoxes in Limit Function**

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Delianti  
Sidauruk,  
Indonesia

**Keywords**  
anchor task, limit  
function,  
motivation

The purpose of this research is to observe the student's response and understanding about Anchor Task of Zeno's Paradoxes in limit function. An anchor task is a problem given to students at the beginning of a math lesson that provides an opportunity to activate prior knowledge, requires students to collaborate and ask questions of each other, and promotes an environment for students to productively struggle and persevere in problem-solving. Design/methodology/approach – A descriptive qualitative research is used by observing the student's group result of discussion and interviewing students. Findings – The researcher found out that students predicted Achilles can catch up to the tortoise based on the relationship between speed, distance and time. Then, they can realize that Achilles can't catch up with the tortoise after connecting the problem into infinite geometric series. Research limitations/implications – This research is limited to limit function on 11 grade students PAHOA Senior High School Originality/value – The study of anchor

tasks and lesson study at high school level and for the topic of limit function is not yet common and the study hopes to add to existing understanding on these areas. The researcher wants to carry out this issue, so it will help the teacher to develop an anchor task about limit function.

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### **The Effect of Confucius Moral Values Education at Pre-School Level on Character Building**

Armawati,  
Indonesia

#### **Keywords**

Confucius Moral  
Value,  
Character,  
Education,  
Behaviour

Instilling moral values for character building is a key pillar in Pahoa School. In this school, Confucius eight moral values are adapted for pre-school (Playgroup and Kindergarten) levels. These are filial piety, respect for elders, ethics and manners, honesty, sense of shame, trustworthiness, truth and justice, and loyalty. The school includes two additional values - compassion and wisdom. Sudaryanti's research on character building in early childhood suggests that character education is derived from instilling good habits. The purpose of this study is to confirm that teaching Confucius' moral values have a positive impact on the formation of character and behaviour in the future. Using questionnaires and interviews, five students (ages 13 to 17 years) who were exposed on Confucius' moral values in preschool and their parents form the sample for the study. It was found that Confucius moral values have a positive impact on character building of the teenagers. The focus of this paper is using lesson study to document the Confucius moral values programme that is implanted at preschool levels.

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### **Gamified Card Game To Enhance The Mastery Of Mathematics Basic Terms In Dual Language Programme Among Year 2 Pupils In Sk Sungai Buloh, Selangau**

Tessie Anak  
Rijem, Malaysia

English is a major language commonly used in the world. This language is taught as the second language in all primary and secondary school in Malaysia because

**Keywords**  
gamified  
activities, rural  
school,  
Mathematics,  
card game

of its significance in culture, politics, economics and technology. In Sarawak, Mathematics has been is taught in English since 2020 to prepare young Sarawakian in facing industrial revolution 4.0 in future. Therefore, is critical for students to master basic terms of Mathematics in English in order to master the subject itself. For students in rural areas, however, English is still a foreign language. Thus, it can be hard for the teachers to teach Mathematics skills especially among young children in the rural school who are not exposed to English outside of the classroom. The aim of this lesson study is to study the effectiveness of Gamified Card Game in helping 20 Year 2 pupils to master 20 basic terms in Mathematics the form of card game. Gamification of lessons is the used of game element in non-game situation to solve the task given. The data was gathered from the students' before and after the intervention, as well as an observation checklist during Mathematics lessons. The findings showed that the percentage of the pupils who understand basic terms in of Mathematics in English increases from 10% to 60% after the intervention. They also show positive attitudes toward Mathematics lessons. This study suggests that gamified activities should be used by teachers especially in the rural to enhance pupils' mastery in Mathematics terms.

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### Analyse Gatekeeping of social studies teacher

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Minamikyushu  
University,  
Japan

**Keywords**  
Gatekeeping,  
protocol  
analysis, social  
studies teacher,  
argumentation,

The purpose of this study is to clarify how social studies teachers as facilitator make sense of children's utterances, make judgments on the spot, and use their own utterances to educe deeper social awareness. This study uses the following research methods. (1) Clarification of social studies teachers' scaffolding through quantitative and qualitative analysis of the protocol (verbatim class records) of argumentation classes in social studies (the fourth-grade) at Chicago Laboratory School in the US. (2) Actual observation of Lab School classes followed by semi-structured classroom interviews and clarification of social studies

Chicago  
Laboratory  
school

teachers' gatekeeping. (3) Consideration of the mechanism of argumentation classes and its enabling factors. This study clarified teacher scaffolding and its relation to deepened social awareness through protocol analysis. The conclusions are as follows. While this argumentation class was conducted as a position debate, the soda tax issue was discussed less as a for/against opposition than it was through listening to and supplementing each side's points. The students' utterances included opinions based on evidence. The argumentation lesson, conducted as a form of flipped learning, extracted and reconstructed students' experiences with taxes and health, taxes and the economy, and taxes and social class. Teachers' scaffolding ability as facilitator is an essential key to social studies argumentation classes. The teacher was shown to shift the students' class discussion from one context to the next through scaffolding consisting not only of recitation but also of accepting student utterances on the spot, praising, reciting, and sharing them with the class.

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### **Lesson Study : Improving Students' Speaking Achievement Through Six Thinking Hats Strategy**

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Malaysia

#### **Keywords**

Lesson Study,  
Thinking Hats,  
Speaking Skills

This study aimed to investigate how Lesson Study can help proving whether Six Thinking Hats (STH) strategy significantly can improved student's speaking achievement. Action research was used in the study. The majority of Year 5 students struggle with speaking skills because they are lacking of confidence level, as they feel inferior to speak English Language in the classroom. The purpose of this research is to boost up the students' confidence level and improve their speaking skill. A new method called Six Thinking Hats had been introduced to the students. The STH is an interesting strategy, which requires students to think and discuss an issue from different points of view. A qualitative research design was administered. The sample of this study covered 40 students from 2 different classes that were equally divided into experimental and control

groups. Spoken test was used as data collection technique. To verify the hypotheses, the data from the pre-test and post-test from the two classes were analysed by independent sample of spoken tests. It was revealed that STH strategy could improve speaking achievement among the students in giving opinion after the intervention has been carried out. The result showed that the experimental group has better improvement in speaking achievement than the control group. Besides assisting students to gain confidence in public speaking, this technique also increases the teachers' creativity and inventiveness in the classroom. The results of this study are expected to provide an overview of the application of lesson studies in increasing student confidence level.

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### **A Systematic Review of Transparency in Lesson Study: How Do We Report How Teachers Observe and Reflect Together?**

Klara Kager,  
Eva Kalinowski,  
Miriam Vock

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Potsdam,  
Germany

#### **Keywords**

Lesson Study,  
Research  
Transparency,  
Observation,  
Reflection,  
Systematic  
Review

Lesson Study is currently undertheorized (Cheung & Wong, 2014) and articles on LS in initial teacher education have been found to routinely underdescribe how LS groups observe student learning (Larssen et al., 2018). This lack of a shared conceptual framework and transparent descriptions of LS implementations challenges the meaningful synthesis and replicability of research findings. Examining 129 articles on LS with in-service teachers published between 2015-2020, we conducted a systematic review on how transparent these articles were in reporting the stages of observation and reflection, and whether these stages were theorized. The coding protocol was based on Moravcsik's (2020) dimensions of transparency and has been pre-registered on OSF (<https://doi.org/10.17605/OSF.IO/5NXGY>). The findings confirm a lack of transparency in LS publications with in-service teachers and are consistent with previous assessments that frequently used concepts, such as reflection, often remain undertheorized (DeLuca et al., 2015). Only a small minority of the 129 articles explicitly defined observation and reflection, or provided sufficient

information on how these stages were carried out. Some implementation details, such as how teachers documented their LS process or whom teachers observed, were more consistently neglected than others. We observed four practices that contributed to this low transparency: presuming shared understanding, omitting information, scattering information, and undertheorizing concepts. We further pinpoint practices used in the reviewed articles that can significantly enhance transparency. Lastly, we propose a framing structure of specific details that empirical papers on LS should give critical attention to in order to ensure the research's usability and transferability.

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**V.E.R.S.A.T.I.L.E Lesson Study in GPM:  
Voluminous Experience and Rounded Skills of  
Affective Teachers in the Learning Environment.**

Desmond  
Sandum

KPM, SMK  
Tebobon KK,  
Sabah, Malaysia

**Keywords**

Lesson Study,  
GPM, I.Q and  
E.Q

Lesson study acts as a tool for improving a subject matter among the professional learning community (PLC). It helps to gather vast information and experiences to be implemented to see the impact of the interventions or tools applied to harness the outcome of it. Through lesson study, it does affect the growth of intellectual and experiences not only in the field of academics, but also impacted on the management of an organization too. For this sharing, I have implemented a reflective approach in sharing my belief of becoming a GPM (Guru Perpustakaan & Media) or known as the Library Teacher on how, by practicing lesson study in vast subject matters, does help improve the circle of teachers at my school and managing the library until been awarded as one of the astounding school libraries in Kota Kinabalu, Sabah. By applying reflective practice throughout my years as GPM (6 years), lesson study has helped not only me but also my surroundings, where it changes teachers' dispositions either on the academic side or management of the library. Through my observation and progress reports, by reflecting on Krashen's theory of affective filter and the study conducted by Trapeno and Gomez (2016), the

relationship of an I.Q and E.Q should be balanced in conducting lesson studies to help in lowering teachers' affective filter. Overall, a lesson study can act as a powerful tool, either, in motivating or demotivating teachers' I.Q and E.Q if it is executed accordingly.

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### **The Use Of Doodle Sketch And Mnemonics To Improve Year Two Pupils' English Spelling: Is It Effective?**

Nur Aimi Alias

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Kebangsaan  
Taman Melati,  
Kuala Lumpur,  
Malaysia

#### **Keywords**

Doodle Skecth,  
Mnemonics,  
Engglish  
Spelling,  
Effectiveness,  
ESL Classroom

This action research attempts to improve English spelling among Year 2 Primary ESL Pupils. English spelling has always been a problem for the researchers' Year 2 respondents in the process of teaching and learning of English language. This research has been conducted on a total of 80 Year 2 respondents from the two classes to investigate the effectiveness of using Doodle Sketch and mnemonics to improve English spelling. The research question was "To what extent is the use of doodle sketch and mnemonics effective to improve Year 2 pupils' English spelling". Doodle Sketch and mnemonics was introduced to improve pupils' spelling. Test 1 and Test 2 were administered to the groups to investigate the effectiveness of the treatment. The basic outline of this research involved the use of doodle sketch and mnemonics as the teaching methods to improve pupils' spelling. Based on our reflection, pupils had difficulties in spelling especially new vocabulary words due to the approach used by teacher in the classroom, lack of exposure to the target language and mother tongue interference. Respondents were asked to build sentences during the Test 1 and Test 2 and an inferential statistic was conducted to give insights on the improvement of English spelling among respondents. The research instruments consisted of Test 1 and Test 2, a questionnaire, an interview schedule and observation. The findings indicated that respondents improved in spelling. Thus, the study concluded that the treatment used was effective to improve English spelling among Year 2 Primary ESL pupils.

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**International cooperation in professional development of South African Mathematics Subject Advisers on Lesson Study**

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Waseda  
University,  
Japan

**Keywords**

South Africa,  
Subject  
Advisors,  
Reflective,  
Training  
evaluation

In 2017, the Government of South Africa requested Japan International Cooperation Agency (JICA) technical assistance to facilitate a training programme aimed at enhancing the capacity of subject advisers (SAs) to conduct lesson study focused professional support to teachers. In response to this request, JICA organized a four-week training course for SAs entitled "Improving Teaching Skills in Arithmetic in Primary Schools", which was held in Japan. The training was content-focused and put much effort to strengthen content knowledge and pedagogical content knowledge using Kyozaikenkyu (study of teaching materials) of fractions. The participants observed Japanese mathematics lessons and a school-based LS meetings. This study analyses the training outcomes using revised four level evaluation framework by Kirkpatrick (Kirkpatrick & Kirkpatrick, 2016). Results showed that SAs were satisfied and were committed to applying what they had learnt. Qualitative analysis of their reflective comments obtained at the start and end of the training suggested that their level of reflection improved. It seemed that observing a Japanese mathematics lesson reflecting a different set of cultural beliefs triggered their reflection on South African classrooms and their roles. However the results also show that the SAs realised that for LS to take root in South Africa, support structures will have to be put in place based on research on the organisational processes that enable effective implementation.

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**Does Changing Initial Teacher Education Through LS Change LS Itself? Analysis Of The Relevance And Adaptations Of A Lesson Study Process With Swiss Preservice Teachers**

Sara Presutti

Over the past decade, a large amount of experimentation has been made about lesson study (LS) in initial teacher

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Switzerland

**Keywords**  
Mathematics  
education, Initial  
Teacher  
Training, Theory  
Of Didactical  
Situations,  
Secondary  
School, Milieu

education. Research on this topic shows a wide variety of accommodations that can be made, as well as some promising results. Nevertheless, some issues have been highlighted, such as the risk of simplification of the process, and the subsequent changes in key features of LS itself. In this paper I present some aspects of my ongoing doctoral research, which aims to pursue the following double-folded objective. On the one hand, it seeks to investigate the relevance of introducing LS within the context of initial teacher education in Switzerland. On the other hand, it intends to explore the adaptations and changes needed for LS to fit in with this new setting. To provide some insights on this topic, a pre-service training program based on LS was designed, implemented and analysed using theoretical tools from Brousseau's Theory of Didactical Situation. The course was addressed to prospective mathematics teachers at secondary level. Qualitative analysis was carried on by comparing video recordings of each session with the lesson plan and prospective teachers' reflective observations. Preliminary results show that LS provides a dynamic and retroactive milieu for prospective teachers' learning, and it enhances their perspective-taking competence. However, the adaptations due to the context of initial teacher education led to a more complex role for the teacher trainer, who also served as a facilitator and a knowledgeable other, and to some tensions in the didactical contract.

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### **Influences of Reflective Conversation during Practicum. A Case Study of Mathematics Student Teachers at Phnom Penh Teacher Education College**

Chea Soth, Ek  
Lim, Sin  
Sokunthea,  
Chum Veasna  
Cambodia

In the pre-service training program, student teachers receive the subject matter knowledge and pedagogical content knowledge. Moreover, to practice what they have learned, the student teachers have to conduct teaching practicum in the real classroom. During the practicum, the student teachers were also involved in reflective conversations with their supervisors to discuss

**Keywords**  
Reflective  
conversation,  
Practicum,  
Mathematics,  
Teachers

their challenges and how to improve the lesson plan and the instructional method. This study aims to explore the influences of reflective conversation on lesson preparation and teaching implementation. This study employed a qualitative case study design where the data was collected based on reviewing lesson plans and teaching videos of two year-4 mathematics student teachers during the 10-week practicum. As the result, student teachers understand well about the learning objective, content knowledge, and the consistency of learning objectives, students' activities, and learning assessment. However, the choices of instructional methods and enhancing students' interaction are still a major challenge for them. This study suggests further research by investigating more details on student teachers' difficulties and mentors' feedback to find out more factors that influence the student teachers in preparing the lesson plan and implementing the lessons.

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**Interventions of Teaching Linkers and Cohesive  
Devices for Part 2, English Writing Paper, School-  
Based Assessment**

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Binti Che  
Awang

Smk Setapak  
Indah Kuala  
Lumpur,  
Malaysia

**Keywords**  
Writing strategy,  
School-Based  
Assessment,  
Intervention,  
Sentences,  
Cohesive  
Devices

This research is aimed to help 11 pupils from 5 Genius class of Setapak Indah Secondary School, Kuala Lumpur, to construct compound and complex sentences effectively and relevantly in writing using demonstrative strategy based on 'I do, we do, you do' method. The study involves these 11 pupils who are from various background and early education. Less exposure to English Language at home causes them to face difficulties in producing quality sentences when completing written assignments. The baseline data is taken from their own essays written during English lessons. This research examines the development of their ability in using linkers and cohesive devices effectively to improve the quality of sentences produced in their essays in terms of providing details and creating coherence. During 4 focused lessons, pupils are drilled to do gap-filling exercises for different types of linkers and cohesive devices before start writing their short

essays. They will be able to construct more precise and accurate sentences. Data collection from English lesson classes will be compared to monthly assessment results. From the observation and teacher's journals, pupils show the development in the quality of sentences constructed. The enhancement is influenced by pupils' know-how to choose and use relevant connectors and cohesive devices in structuring their compound and complex sentences. As for future study, we hope to expand the pupils' ability in speaking confidently and reading effectively as they have acquired a strong foundation in the use of linkers and cohesive devices. Thus, this will improve in their school-based assessment.

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### **Virtual and Blended Learning in Pre-Laboratory Chemical Equilibrium Class**

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#### **Keywords**

Virtual learning,  
Pre-laboratory  
class, blended  
learning, Le  
Chatelier's  
Principle,  
Lesson study

Pre-laboratory class is to facilitate students conceptually and procedurally before a laboratory class. However, the current pre-laboratory class was ineffective in improving students' understanding due to the high cognitive analysis of application of Le Chatelier's Principle. Therefore, lesson plans with virtual and blended learning elements were designed to help students construct the understanding of the chemical equilibrium experiment. The objectives of this study were to study whether the virtual learning could be conducted for a pre-lab chemical equilibrium class and to evaluate the effectiveness of using blended learning in pre-lab chemical equilibrium class. Lesson study was conducted in three cycles: (i) the conventional method, (ii) virtual learning using content videos to explain the Le Chatelier's Principle and (iii) blended learning with integration of content videos and teacher physical facilitation in learning. Mean scores and post-hoc tests indicated that students could learn independently with minimal teacher supervision but performed the best in the blended learning class with teacher's guidance. Interview and survey data showed that both students and teachers had positive inclination towards inclusion of

content videos in pre-lab class. In the blended learning class, students responded that content videos helped to enhance their conceptual understanding while teachers believed that content videos allowed students to have a better visualisation of an abstract concept and make a sensible relationship between a concept and an experimental observation. This study reinforces the significance of video incorporation and blended learning in chemistry pre-laboratory class to improve students' mastery and envisage of an abstract concept.

300

### **Developing students' skills to justify their decisions through the implementation of research tasks**

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Kazakhstan

#### **Keywords**

Implementation,  
Student's skills,  
Mathematics

This research describes how high school students can develop the skills to justify their decisions by completing research tasks. According to the results of the international PISA exam for several years, 15-year-old schoolchildren in Kazakhstan have low skills in analysis, synthesis and assessment according to Bloom's taxonomy. Based on this, ways were sought to develop the high skills of students of the Nazarbayev Intellectual School in Aktobe. The study was carried out for one year. One of the reasons for choosing this topic is that it allows students to apply the principle of analysis in advanced mathematics classes by conducting research, deepening their knowledge and establishing interdisciplinary connections with physics. The purpose of the study: to develop the communication skills of students, to teach them to solve text problems in mathematics, to effectively use knowledge in real life. Methods used in the study: collection of quantitative data through questionnaires, collection of qualitative data from students' communication through observation of the lesson. First of all, the results of the international PISA study and the results of CITO monitoring were studied. At the same time, according to the results of the CITO monitoring the skills of knowledge, understanding and application showed 100% each, a comparative analysis showed 82%, synthesis skills 67%, skills assessment 48%. The survey was conducted

on the Microsoft Forms platform. A total of 62 students took part. CLIL technologies, Problem-Based Learning, and the LearningApps platform were used. The results of the study were disseminated at the school pedagogical council.

302

### **The Effectiveness Of Professional Learning Community Practices Through Teacher-Sharing Sessions And Pdpr Round Learning To Increase Teachers' Competency And Confidence In Digital Learning Implementation**

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#### **Keywords**

Teacher-Sharing  
Sessions, PdPR  
Round Learning,  
Observation,  
Competency

The Covid 19 pandemic has abruptly changed the teachers' methods of teaching and learning, from teaching face-to-face to teaching digitally. However, not all teachers can master this teaching and learning method easily and quickly. The results obtained from observations done on three teachers in a school showed that the teachers' average score for Standard4, SKPMg2 was only 75.9 percent, which is at a moderate level. This average score is almost the same as their self - observation scores which is 75.8 percent. Therefore, the objective of this study is to evaluate the effectiveness of Professional Learning Community practices, practiced in schools. In addition, it is also to develop the teachers' competency and confidence in digital teaching and learning. The research is done using a case study on three teachers with low self -observation scores. The approach used is a teacher-sharing session focusing on the use of digital tools in teaching and learning followed by PdPR Round Learning which consists of three phases. They are Pre-Round Learning, While-Round Learning and Post-Round Learning. After the Post-Round Learning, the teachers involved in the teacher-sharing session will share their findings to all other teachers in the school. The instrument used to assess the teachers' level of competency and confidence in teaching and learning is Standard 4, Malaysian Education Quality Standard wave 2 (SKPMg2), a self-assessment tool to ensure more systematic management and help the schools determine their strengths and

weaknesses for improvement. From the study, it is found that the average score of self -observations has increased from 75.8 percent to 85.2 percent after the teachers were involved in sessions. The increase in the self -observation scores indicates an increase in the teachers' level of competency and confidence in digital teaching and learning. It shows that teacher-sharing sessions on digital learning best practices and PdPR Round Learning are very effective and needs to be continued to strengthen teachers 'competence and confidence in digital teaching and learning.

303

### **Developing and Sustaining Professional Learning Communities with Systems Thinking: An Insider's Story**

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#### **Keywords**

Professional  
Learning  
Communities,  
Teacher  
Capacity  
Building,  
Systems  
Thinking,  
Learning  
Organisation

Past studies have frequently focused on looking at the development of Professional Learning Communities (PLCs) from an outsider's perspective. This paper looks at how PLCs are geared as a power tool in a Form Six Center in Sabah to achieve academic excellence. It described the unique experience of a Form Six senior assistant/administrator who, together with her six teams of PLCs, plan and execute student development programs, academic improvement initiatives, and teacher capacity building activities underpinned by systems thinking to produce positive results. Data gathered through document analysis, discussion and feedback, and reflections of the administrator as researcher indicates quality thinking by those in leadership roles in formulating programs and initiatives to bring about desired changes in the organisation, and good relationships among colleagues that spur quality actions or program executions to produce excellent academic performance and positive student development. In turn, these act as boosters in the development of the PLCs as continuous change agents in the Form Six center. This experience is expected to contribute to the development of PLCs in schools in Malaysia where sustaining their role as game changers in schools as learning organisations has always been a

challenge.

**305 Collaborating in STEM: The Implementation of Lesson Study in the STEM Learning on Science Class**

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**Keywords**

Lesson Study,  
STEM,  
Collaborating

This study in to describe how lesson study can improve the STEM Lesson through the collaboration on science class. Two groups of students involved in this study, respectively at third and second years of junior high school in one of schools in South Tangerang, Banten, Indonesia. The setting of classes is lesson study that have 2 cycles. The implementation of lesson study's focus is collaborating that inline with the STEM focus in the class.

**306 The Effectiveness Of Anisko In Verifying Student's Achievement In History Lesson**

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Pejabat  
Pendidikan  
Daerah  
Seremban,  
Malaysia

**Keywords**

Differential  
Teaching And  
Learning, Fun  
Learning,  
Classroom  
Assesment, Kit  
Juara

The effectiveness of AnisKO in verifying student's achievement based on their feedback through series of questions fabricated in a game called Kit Juara. This research was made based on the Kemmis and MacTaggart (1998) Action Research design that includes the intervention as innovation implemented by teaching and learning in guiding teachers to discover the best solution in problem solving. It is an indication for teachers to implement the differential teaching and learning system. A total of 160 students and 4 history teachers in a secondary school in Seremban district had participated in AnisKO. Through the mock-up design of AnisKO as the pre-post test instrument, data were obtained to identify the level of student's achievements. After the game, an interview session with the students were initiated. The findings of these sessions had shown increased scores between pre and post test through a constructed analysis on the student's achievement levels from AnisKO. Teachers were able to structure items for question papers with the guide from these analyses.

Students had expressed their exhilaration when answering questions in this game since the game had given them the opportunity in participating their thoughts and knowledge fairly in enjoyable ways. It is determined that AnisKO is an instrument that could guide teachers in constructing questions based on their student's level of understanding through classrooms assessments. Through these analyses, teacher is able to plan the best method of teaching and learning according to the concept of 'no student should be left behind'.

307

### **Deepening Learning on Covid Situation using Inquiry-based Learning Model for Primary Four Chinese Language Lesson in Singapore**

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**Keywords**  
Inquiry-based  
learning,  
Primary Chinese  
Language  
Education,  
Singapore

In Singapore, Inquiry-based learning (IBL) is commonly used in subjects such as history, geography, arts, science, and mathematics (MOE, 2014, 2018). It is hardly used in teaching Chinese Language in primary school settings and the corresponding research to investigate its feasibility and efficacy is scarce (e.g., Kwek et al., 2019). Under the guidance of Singapore Centre for Chinese Language Master Teacher, Tan Geok Hoon, a group of Chinese Language teachers from Zhenghua Primary School teamed up to explore the feasibility and efficacy of IBL in Primary Four Chinese Language learning using lesson study as a research approach. They selected Unit five of Primary 4A Chinese textbook, "I am not afraid of inoculations" 《我不怕打针》 in connection with the current pandemic situation. The topic acts as a starting point for deeper thinking and encourages the target primary four students to extend their inquiry into various aspects of the pandemic situation. This research adopts a qualitative design. The data collected included the video-lesson clips, lesson study observation notes, students' interview responses and students' learning artifacts. In conclusion, IBL enhances student autonomy as well as student learning motivation. It satisfied students' natural desire for new knowledge, and promoted subsequent deeper learning. Most importantly, student-directed

inquiry practices engaged students deeply in the learning process which enabled them to develop various 21st century competencies. Our research confirms the feasibility of conducting IBL in primary four Chinese language classroom and sheds light on the value of IBL in energizing and boosting students' learning.

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### **'Turning Data into Insights' – Unlocking and Identifying 'Champions' & 'Resistors' in Corporate training**

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Malaysia

#### **Keywords**

Champions,  
Motivation,  
Life-long  
learning,  
Professional  
Learning  
Communities

**Aims** In this Corporate training environment, lesson study demonstrated via collaboration process amongst Professional Learning Communities. The purpose of this study is to examine the learning agility of the learners in Corporate training which is categorised as 'Champions' and 'Resistors' user segments. This data is further validated with 'human' inputs from its communities to uncover its underlying factors and how we can leverage off each user segments in promoting learning adoption especially in the hybrid learning environment of working professionals as part of its sustaining effort in creating positive life-long learning experience. **Methodology** The study uses Brinkerhoff's 'Success Case Method' where a sampling of 'Champions' and 'Resistors' were identified through data analytics (quantitative data), validated with qualitative analysis via focus group discussion where 'what works' and 'what does not work' were drawn and according to the similarity, it was further categorised into themes which represents the findings. **Findings** The study unlocks the correlation between the 'Champions' where the learners are always hunger for more knowledge (self-driven for life-long learning), and uncover the underlying factors of 'Resistors' in training where hygiene factors could be a deterrent (Herzberg's Two-Factor Theory). As part of 'sustaining effort', the 'Hawthorne effect' from social learning buddy and nudges have helped in providing supportive process which stimulates and empowers individuals to continue learning. **Significant for Theories/Practice** This has

proven Longworth & Davies's (1996:21) definition, where; "Each individual has a learning potential. Given learning opportunities, discarding learning barriers and providing access will encourage and motivate learning throughout life".

319

### **A Review: Making sense of Indonesian lesson study features and its research trends**

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Dotger

United States

**Keywords**  
Indonesian,  
Lesson study,  
Features,  
Research Trends

As a cultural practice refined in Japan, lesson study requires adaptation to new contexts (Stigler & Hiebert, 2016; Murata, 2011). In 2001, Japan International Cooperation Agency (JICA) and the Indonesian Directorate Higher Education (DGHE) introduced lesson study in Indonesia through the Indonesian Mathematics and Science Teacher Education Project (IMSTEP) (Saito et al., 2008; Saito et al., 2006a; Saito et al., 2006b). We reviewed 194 articles about Indonesian lesson study up to 2020 to explore how lesson study was adopted in this country. We used specific keywords to search the articles from Scopus, Google Scholar, and EBSCOHost. We filtered the articles by considering journals and conferences' indexation and decision criteria to evaluate the articles. We referred to Snyder's (2019) recommendation of using semi systematic literature to track the changes in the features of the Indonesian lesson study over time of articles from various disciplines, groups, and traditions. Then, we utilized the thematic analysis to identify and analyze the pattern embedded in the articles (Braun & Clarke, 2006). Here, we are reporting: 1) the features of Indonesian lesson study on its early adoption and the development of the features; (2) lesson study adoption in the Indonesian educational system; (3) research trends in Indonesian lesson study research by referring to Lewis, Perry, & Murata's (2006) three research directions and six changes to scale up lesson study research. This review contributes to understanding lesson study translation beyond Japan in the Indonesian context. The findings and implications will be discussed.

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### **Professional Learning Network (PLN) and Digital Practices in Teacher Education**

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**Keywords**  
Professional  
learning  
network, Digital  
practices,  
Teacher  
education

Professional Learning Networks (PLN) and digital practices of educators represent a promising approach to achieving continuing professional development among them and globally school improvement. Teachers' knowledge and mastery of digital skills nowadays are sorely needed, particularly to facilitate their teaching and learning process. This research aims to see to what extent PLN and digital skills can assist teachers in enhancing their professional practice and expanding their knowledge. The study was conducted on four teachers who have been selected as digital champion teachers or is known as Cikgu Juara Digital (CJD), at the state and national levels under an initiative developed by the Malaysia Digital Economy Corporation (MDEC). Data on their knowledge and involvement in the digital era of PLN were collected and analysed based on the Theory of action for PLN adapted from The Interconnected Model of Professional Growth (ICMPG) by Clarke & Hollingsworth (2002). The findings suggest that the participants' digital skills and the PLN practised have provided professional development opportunities for the teachers themselves and have also developed other peers in a more extensive education sharing network. They coincide with the theme suggested, supporting the professional learning communities.

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### **To develop students' research skills in identifying, validating and analysing secondary data by using CRAAPTtest, FiveWs and Boolean logic strategies.**

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Zhaiyrbayev  
  
Kazakhstan

**Keywords**  
Research skills,

In current time, teachers are required to develop complex skills including research skills of students during the lessons. At Nazarbayev Intellectul Schools in Kazakhstan as a part of NIS bespoken program, in the subject of Global Perspectives and Project Work, 11th grade students have to write a research paper as a final exam. The aim of the lesson study project is to co-plan,

CRAAPTtest,  
FiveWs,  
Boolean logic  
strategies

teach, observe and analyse the effectiveness of research strategies as CRAAPTtest, FiveWs and Boolean logic on the enhancement of students' research skills that can assist them to define relevant academic sources from databases and evaluate found sources for credibility, reliability and biases before using them in the academic research projects. To evaluate the embedded instruction the data collection tools like semi-structured interview with students and document analysis (the final work of students) being applied. The research result reveals that the students who acquired and used applied strategies could produce quality research papers with reliable data than students who lack to use the offered measurement tool during the research process.

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### **Research-based frameworks as Communicative Connection between Teachers and Academic Facilitators in Lesson Study: The Case of the MDI Framework**

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Philippines,  
Philippines

**Keywords**  
Research-based  
frameworks,  
Teaching  
Mathematics,  
Facilitators,  
Professional  
Development,  
Theorizing  
Lesson Study

The study we report here aims to contribute in the ongoing work of theorizing lesson study particularly in the aspect of integrating theories of learning and instruction in the research lesson. It is part of a larger study that is investigating how frameworks for studying instruction could support and be supported by lesson study. One of the frameworks that we investigated is the mathematical discourse in instruction (MDI) framework (Adler & Ronda, 2015). This framework is descriptive and evaluative of the quality of mathematics that are made available to learn through commonplace mediational means of instruction that teachers are already using. As such it has potential to speak to practice. The research question that we pursued was how the framework is appropriated in lesson study by the teachers and their academic collaborators. We examined two lesson studies by secondary school teachers who we introduced the framework to through a 3-day seminar workshop. Our findings suggest that the artefacts developed based on the MDI framework that teachers work with alongside the research lesson made

visible to them key aspects of the object of learning that they said they would otherwise miss. The framework served as communicative connection between the academic facilitators and the teachers both at the planning stage of the lesson at the post lesson implementation analysis. The study also resulted to further refinement of the MDI framework which suggest that lesson study offers mechanisms for making research products accessible to practice.

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### **Educational Practices for Multicultural Conviviality and Teachers' Attitude Reform: What do School Administrators Consider as Sustainable Organizational Management?**

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**Keywords**  
Children With  
Foreign Roots,  
School And  
Regional  
Administrator,  
Organizations  
That Embrace  
Diversity,  
Multicultural  
Education

In Japanese schools, students with foreign roots are rapidly increasing, and educational reform has become critical. The Ministry of Education, Culture, Sports, Science, and Technology asserts the importance of fostering “creators of a sustainable society” and “diversity as a driving force.” Additionally, the Sustainable Development Goals (SDGs) advocate for “quality education for all.” While prior studies have focused on children’s problems related to language and subject learning, to the best of our knowledge, few have explored the lessons for teachers and children regarding multicultural coexistence and school management. This study investigates sustainable educational practices and organizational structures that embrace diversity from the perspective of school and regional administrators. We conducted interviews (including one semi-structured interview) with two people with experience as a board of education supervisor and the principal of an elementary school. Our analysis focused on (1) educational practices, (2) the outcomes of those practices, (3) remaining problems, and (4) the requirements of teachers and schools. Results revealed a lack of teachers’ consideration for a minority, and participants’ concrete efforts regarding aspects such as the installation of the “grand design” and school-wide educational practices to promote multicultural

conviviality facilitated positive changes among teachers and students. In conclusion, it is necessary to shape teachers into professionals responsible for multicultural education and build a structure for the transmission and accumulation of skills. We propose the placement of teacher to serve as a hub for the entire school and the creation of a sustainable network that spans the school and beyond.

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### **Guarding Against Miscommunicating a Mathematical Concept**

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#### **Keywords**

Mathematical  
Concept,  
Mathematics  
Knowledge  
Building,  
Linguistics In  
Mathematics  
Education,  
Mathematical  
Discourse,  
Permutation  
With Identical  
Objects

This study aims to adapt some principles in language and communication to analyze the discourse that affects the formation of a mathematical concept. The study is part of the Mathematical Discourse in Instruction–Lesson Study (MDI-LS) Project, focusing only on the Naming element of the MDI Framework (Adler & Ronda, 2015) where words pertaining to mathematical aspects in a lesson are taken into consideration. Six LS implementations of the lesson on Permutation with Identical Objects were analyzed. The lesson was designed with a sequence of tasks leading to a final task where the learners are to develop a formula for ‘permutation with identical objects’. Part of the employed analytical process is identifying keywords relevant to ‘permutation’ and tracking the progression of the discourse using these keywords. One such word used by both the teachers and the learners was ‘repeated’. The analysis shows that they come from different viewpoints when they say ‘repeated’ even at the very start of the discussion – the learners come from their knowledge of combination, while the teacher just tries to grab and pin the idea of ‘repeated elements and repeated arrangement’ with the final task in mind. The findings of this study have practical implication in teaching – the teachers can be made conscious of the words (and associations to the words) they and their learners use, to improve their lesson and to facilitate a more accurate mathematics knowledge building by the learners. It also contributes to the literature on language

as resource for teaching mathematics.

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**Teacher Educators' Conception and Difficulties in Doing Action Research: Case study at Battambang Teacher Education College (BTEC)**

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Cambodia

**Keywords**

Educator's  
Conception,  
Difficulties,  
Action research,  
Case Study,  
BTEC

Research skill has been included for strengthening the competence of teacher educators at Battambang Teacher Education College (BTEC). Since 2017, BTEC and partners have provided extra training to teacher educators, focusing on action research. Despite having received several trainings in this practical research competence, teacher educators' knowledge and research skills are still restricted, and they faced hurdles when conducting research. JICA (2022) reported that teacher educators' knowledge of how to conduct action research is still lacking. This includes not only the process of conducting action research, but also how to construct research tools, evaluate research data, and interpret research findings. Therefore, this study is conducted to explore the conceptions, difficulties, and other hindrances in doing action research of teacher educators at BTEC. The study aims to uncover issues faced by teacher educators as well as to mitigate problems that have already arisen. A survey questionnaire will be distributed to 48 teacher educators who will be chosen at random from the entire BTEC teacher educators. Data will be collected in both quantitative and qualitative formats. It is expected that findings will be beneficial to BTEC's administrators and partners who are supporting BTEC to improve teacher educators' knowledge and skills of action research. In turn, teacher educators will be able to implement other active teaching methods that count on knowledge and skills from research.

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**Doing lesson study about lesson study: Four teacher educators' collaboration to improve their performance as knowledgeable others in a Japanese setting**

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**Keywords**

Lesson study  
about lesson  
study, Teacher  
educator,  
Knowledgeable  
others,  
Professional  
learning  
community,  
Japan

includes lesson observation and reflection as a lesson in teacher education, this research aims to illustrate four teacher educators' lesson study about "lesson" study in a Japanese in-service lesson study and explore their learning during the process. The role of teacher educators in lesson study, especially as knowledgeable others, is essential for bringing new research into school, bridge theory, and practice, and promote teachers' reflections on their teaching and students' learning (Takahashi, 2014). However, their professional development in lesson study as knowledgeable others has rarely been discussed. To solve the mentioned issue, four teacher educators who have worked as knowledgeable others in Japan conducted a case study of collaborating to improve their performances as knowledgeable others and explore and discuss their learning during the project based on professional learning community theory. Suzuki (pseudonym), a physical education specialist, will invite three other teacher educators to an elementary school where he is invited as a knowledge other; they will observe Suzuki's performance as a knowledgeable other and discuss what he could have done for a better lesson study. Suzuki's performance during the lesson study and the reflection session of the four teacher educators will be recorded, transcribed, and qualitatively analyzed. We expect that the preliminary findings related to teacher educators' professional development in lesson study are supported by the "Importance of taking vulnerability," "Going beyond one's own specialty," and "Creating a professional learning community." More details of this research-in-progress will be presented in WALs 2022.

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**The perspective of curriculum management with  
Lessons study in Japan schools**

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Kuramoto and  
Associates

The curriculum management and lesson study concepts can be combined to develop a "knowledge management" theory, primarily related to "Nonaka's SECI model." Thus, from the perspective of curriculum

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**Keywords**  
curriculum  
management,  
lesson study,  
intellectual  
capital,  
knowledge  
leadership

management with lesson study, the first half of this study will focus on improving educational activity and organizational knowledge management within a school system centered on individual teachers' instruction. In summary, in the first half, this study will first argue the conceptual relationship between curriculum management, lesson study, and knowledge management from the perspective of the SECI model. Second, it will discuss how to facilitate curriculum management with lesson study using knowledge leadership and "input and output theory." Conversely, the second half of this study will explain "intellectual capital," which consists of human capital, relational capital, and structural capital factors for improving teacher training systems, including the perspective of curriculum management with lesson study. Finally, it will organize the theoretical structure of intellectual capital and curriculum management through lesson study. Additionally, it will prove the teacher training program's effectiveness through a survey in Japan from intellectual capital.

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### **Investigating the relationship between science content and scientific practices in two US elementary science research lessons**

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United States

**Keywords**  
Elementary  
science,  
Scientific  
Explanations,  
Scientific  
modeling,  
Bansho

In this paper, we focus on reporting features of two public research lessons that enabled learners' scientific reasoning in the primary grades. The research lessons occurred in first and second grade classrooms, respectively, and were observed via videoconferencing technologies. Our analysis of the lesson cycles' artifacts (e.g., research lesson proposals, research lesson videos, field notes, outside commentators' comments, and post-lesson reflections) reveals intersections between the content goals of the lessons and specific lesson aspects that enabled students' engagement in scientific practices, specifically scientific modeling and explanations. For example, the first-grade modeling lesson included boardwork that highlighted the outside features of black-box models for the illumination of the

moon, and the observations students made in each box. The public representations of the moon models assisted the teacher in supporting the students' comparisons of the two models to each other and to their observations of the moon. The second-grade explanation lesson used board work to collect students' ideas about features of bees' bodies that supported pollination. These ideas were compared with features of wasps so students could make claims about pollinators and support those claims with evidence. In both lessons, we found evidence of a relationship between teachers' knowledge of content (the illumination of the moon and plant/pollinator relationships) and their support of modeling and explanation building. Our presentation will conclude with recommendations for other lesson study groups that seek to design research lessons to advance students' content learning while engaging in scientific practices.

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### **Outcomes of a working conference for lesson study use in mathematics and science teacher education**

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#### **Keywords**

Teacher  
Education, Key  
features of  
lesson study,  
Science  
Education,  
Mathematics  
Education

In May 2021, we gathered 39 mathematics and science teacher educators together digitally for a working conference that focused on lesson study practice in higher education, sponsored by the National Science Foundation in the United States. Across two days, participants shared the way they used lesson study in their context, compared these methods across contexts and against research literature, articulated goals for their future research, and proposed ideas for a book that overviews lesson study use in higher education in the United States. We used the foundational description of lesson study by Lewis et al., (2019) to ground our discussions and compare our implementation methods. We learned that lesson study implementation varies across teacher education programs because of the teacher education programs' variance. Additionally, lesson study practices with college sophomores with no prior teaching experience were not precisely the same as lesson study implementations with student teachers at or near the end of their teacher education program.

Furthermore, variance emerges because of the opportunities for education students to teach research lessons with students in public school classrooms and views of the role of teacher education students' interaction with instructional materials. The paper will overview these variances and their relationships to lesson study design in teacher education. This paper can contribute to the knowledge base of lesson study's use in teacher education and assist readers in evaluating design choices when using lesson study in their teacher education programs.

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**Getting the Most Out of Lesson Study: The Role of School Leadership Team in Sustaining Professional Learning Community in Malaysian Context**

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**Keywords**

PLC, Lesson Study, School Leadership Team

Leadership practices influence teachers work behavior and consequently has a greater impact on the students' outcome. Precisely, teacher quality is singled out as the most critical factor in addressing improved learning for all students. This requires for teachers to sustain their quality in the teaching and learning process and committed to shift their work from the old order to new conditions of work by embracing Professional Learning Communities (PLC) as their way of Continuous Professional Development (CPD). A professional has the current expertise or advanced training in a specialized field; whereby learning is a continued action characterized by unending curiosity. Finally, community is a group of people linked by common interests. International research demonstrates that on-site training grounded is more effective than off-site training programs. One of the effective on-site training grounded approaches is PLC and in particular using Lesson Study as a collaborative tool. The paper aims to highlight a practical Focus-Improve-Share (FIS) concept in PLC and an application of a simple Lesson Study protocol as way to enhance pedagogical skills and produce best practices in teaching & learning. The paper also will emphasize the issues faced by school in implementing Lesson Study due to lacks of common

structure or working model, the missing of data process, lack of time or space and support from the Senior Leadership Team (SLT). Finally, through the paper will emphasis the four crucial roles that SLT need to play in order to sustain PLC or in particular Lesson Study effectively in Malaysian schools.

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**Developing Leadership Training Modules through Lesson Study: The Experiences at Institut Aminuddin Baki Ministry of Education Malaysia**

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**Keywords**

Active Learning Module, Leadership Training, Lesson Study

Among various internal factors that contribute to school effectiveness, school leadership is identified as one of the main variables in determining the success or failure of educational transformation initiatives including the achievements of the students. There is a need to shift the focus towards leadership for learning. This requires competent school leaders who could focus on people and processes and focusing on how to keep improving. It is incumbent and necessary then for aspiring school leaders from Ministry of Education Malaysia to have the required competencies in the field of leadership for learning in order to effectively generate peak organization performance and achieve excellence in education. The paper is aimed to share the experience of Institut Aminuddin Baki (IAB) in developing leadership training modules to enhance school leaders' competencies using an Active Learning Module called LAMDA approach. The paper will also highlight how the protocol of Lesson Study is used to plan, develop, practice, reflect and carry out continuous improvement in developing the leadership training modules. The paper will further elaborate the outcome of three cycles of Lesson Study carried out to further improve the quality of the training modules during the pandemic and post pandemic period. Finally, the paper will emphasis the challenges faced and ideas to further improve the execution of training modules for leadership competency development in order to generate peak performance and make the school and schooling under school leaders efficient, effective, progressive,

meaningful and exciting for all concerned.

359

### **Introducing Reflective Teaching Practice in Remote School: Teacher-Student Interaction Patterns**

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Indonesia

**Keywords**  
Reflective  
Practice, Remote  
School,  
Interaction  
Pattern

Teacher-student interactions particularly in the practice of reflective learning have been discussed in depth in urban schools. However, very few studies that reported the interactions between teachers and students in remote areas. Specifically, this study aimed to analyze classroom interactions in the reflective teaching practice based on (a) learning objectives and types of interactions, (b) types of student questions and answers, and (c) gender and student achievement. The participants consisted of 46 students and 4 teachers from 3 remote schools representing 3 districts in Indonesia. The results showed that most of the teacher-student interactions in reflective teaching practice contained feedback that focused on students' correct and incorrect answers, yet rarely discussed how students got answers. Teacher reflection was evaluative by discussing matters related to learning objectives. While, reflections have not been yet related to the teacher's method. This study also reported that gender and achievement did not affect the reflective teaching practice.

360

### **Science Teachers' Views of Feedback in Teaching Practice Collaboratively**

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Tanjungpura  
University,  
Indonesia

**Keywords**  
Feedback Form,  
Science Teacher,  
TPACK

This exploratory study investigated the perceptions of 16 science teachers from 4 secondary schools in Indonesia regarding (a) the purpose of providing feedback, (b) the technique of delivering and receiving feedback, and (c) the types of feedback based on the TPACK framework. They developed a Feedback Form (FF) collaboratively and implemented FF in the teaching practice. They were allowed to be observers during 2 meetings and also became model teachers in their respective schools. The results indicated that the perception of science teachers changed after being

Framework involved as observers in the science learning process completely. The feedback given by science teachers tends to provide corrections, not reinforcement. Accordingly, the qualitative data shows that there are four feedback techniques such as Sandwich, Ask Tell Ask (ATA), Bridge, and Situation Behavior Impact (SBI). Therefore, the findings of this study provide evidence that creating FF collaboratively has important implications for reflective practice and professional development of science teacher.

**363** **Challenging Teacher Written Practice Records:  
Case of Saguday Teachers' Journey towards  
Practice Records Writing**

Pauline Anne Saguday teachers in the Philippines have embraced  
Therese lesson study even before the pandemic. Teachers and the  
Mangulabnan, regional Department of Education (DepEd) officials  
Sonia C. work together to design LS classes based on grades and  
Pagbilao, Sherly subjects. The pandemic has forced LS groups to create  
Cainguitan new groups across subjects and implement LS online.  
Japan Teachers documented these in tedious action research  
formats targeting publication (which were not sustainable) rather than supporting reflection in  
practice. Thus, the authors looked into practice records  
**Keywords** (PR, 実践記録 in Japanese) writing models in Japanese  
Written practice schools as a result of LS practices. Hence, a three-month  
records, writing and re-writing workshop was designed and  
Saguday, Lesson implemented for LS teachers to transform their written  
study documents into PR. This study focuses on how the  
writing workshop is designed for teachers to grasp the  
value of writing despite their busy schedules and the  
notable experiences and realizations of the teachers  
during the writing workshop that led to practice records  
completion. It was expected that teachers would  
struggle in re-writing their documents because of their  
different notions of writing (e.g., if the storytelling is  
enough, etc.), anxiety in reflection (e.g., structuring  
reflection, grouping together ideas), among others.  
However, these hurdles are to be overcome by the  
different levels of feedback and constant support in

writing; these are the two main features of the writing workshop design. This project can serve as a model for other lesson study practitioners looking for ways to document LS practices.

367

### **PLC as one of the most effective coaching tools for school leaders**

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Malaysia

#### **Keywords**

PLC, Coaching tools, School leaders

SIPartners+ role as a coach is to enable school leaders to become high-impact leaders in every school throughout Malaysia. One of the instruments issued by MOE to track the effectiveness of the school leadership is the Standard Kualiti Pendidikan Malaysia Gelombang 2 (SKPMg2). Every year all schools throughout Malaysia must implement a school self-assessment (SSA) using the SKPMg2. The most extensive challenges faced by SIPartners+ in coaching is in 2020 and 2021, during the Movement Control Order due to the Covid-19. The 2020 findings showed that 19 (33.93%) of the 56 schools in Pasir Puteh Educational District (PPD Pasir Puteh) placed the SKPMg2 SSA score (Standard 1-4 Operational Management) below 90%, which is under the KPI set by PPD Pasir Puteh. At the early stage, two workshops were carried out with an administrator (senior leader team) representing 19 schools. However, the implementation of SSA in 2021 shows that 7 (36.4%) out of the 19 schools are not capable of putting their scores more than 90%. The following coaching method is converted to Professional Learning Community (PLC), where each school is conducted individually with only four administrators and one SKPMg2 coordinator (middle leader team). The effect of the PLC showed that all schools' SSA scores implemented for 2021 surpassed the KPI set by PPD, which is 90% and above. It shows that coaching in a small group is more effective for some school leaders. Keywords: SIPartners+, Coaching, Professional Learning Community

370

**Different approaches to lesson study observations:  
how do they affect the quality of observations?**

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Nottingham,  
United Kingdom

**Keywords**  
Professional  
Development,  
Online, Lesson  
Study,  
Mathematics,  
Teacher  
Observations

In 2021-22, the ‘Centres for Excellence in Mathematics’ initiative in England trialled a new teaching approach. Some teachers involved participated in an adapted lesson study approach to professional development. These teachers were placed in a cluster group of three to six teachers from different colleges led by a Lead Teacher. All participated in five lesson study cluster meetings. At the cluster meeting, Lead Teachers introduced the teachers to the lesson to be taught, and afterwards the trial teachers taught the lesson. At the following cluster meeting, the teachers observed a teacher teaching the lesson. One of our research questions focused on the quality of their observations. Of the five cluster meetings, three were face-to-face and took place at the college of the teacher teaching the observed lesson. Two meetings took place online via Zoom. In the Zoom meetings, the lessons to be observed were taught by one of the Lead Teachers and video recorded with one camera on the teacher and another focused on a pair of students. For the cluster meeting, the video was edited to show the teacher when she or he was teaching and the students when they were working on the mathematical tasks the teacher had given them. This approach contrasts with the face-to-face approach in two main ways: all teachers observe the same pair of students and teachers are able to watch and re-watch the students. In this presentation, we compare the two approaches and consider the implications for the quality of the teacher observations.

374

**Improving Pre-Service Teachers’ Lesson Planning  
Skill Through Lesson Study within School  
University Partnership Program**

Fitriati, Roslinda  
Rosli, Zanaton H  
Iksan

Planning a lesson plan is a complex process that requires teachers to have strong fundamental knowledge, including subject matter and pedagogical content knowledge. Its quality has affected the instruction

Malaysia

**Keywords**

Pre-service Teachers, Lesson planning skill, Lesson study, School university partnership program

process. Therefore, enhancing the lesson planning skills of pre-service teachers is crucial for teacher preparation programs to produce competent teachers. This study examines how a lesson study within a school university partnership program could strengthen pre-service teachers' lesson planning skills. In this study, the case study technique was employed with the respondents of thirteen pre-service teachers (PTs) who enrolled in the course "Secondary School Mathematics Instruction" and participated in the school university partnership program. Initial drafts and final drafts of lesson plans as well as reflection reports produced by four groups of pre-service teachers were collected and then analyzed qualitatively using the framework of MKT. The analysis of the early draft of lesson plans revealed 10 weaknesses of the PST lesson plan. Approximately 82% of the problems were pedagogical content knowledge-related. After observing lesson study practiced by in-service teachers in school and conducting their lesson study with peers, the number of deficiencies in their final draft of lesson plans was decreased. In addition, the participants demonstrated significant improvement in thinking about learning objectives, analyzing content, and students, and sequencing mathematics tasks. Their reflections verified their process-related achievement even more. This study concluded that lesson study within school university partnership is an effective way to enhance PTs' lesson planning skills.

378

**Facilitation as an effective technology for organizing student project activities**

Natalyakim

Kazakhstan

**Keywords**

Facilitation,

The subject of the research on the opportunities that facilitation provides, has been suggested by the students of one project group, who, working on the same subject, often could not reach a consensus. The reasons turned out to be the inability to build relationships in a group, a lack of understanding of the benefits of working

Effective  
technology,  
Student project  
activity

together, a desire to stand out, etc. There was a need for research on the development of teamwork skills. There was a hypothesis that facilitation can significantly increase the effectiveness of project work. Thorough preparation for the meetings in the facilitation format led to the creation of an atmosphere of openness in which all the participants understood that they were equal and that finding the best solution in a group was easier. The experience of such meetings has shown that disagreements within the group can be used as an impetus for the birth of new idea. Many facilitation methods have been tested, such as process mapping, "The Search" conference", "The Positive Change Summit", and others. The experiments have shown which of them are the most effective in certain cases, and which ones lead only to an unreasonable waste of time. Purposeful work on the use of facilitation methods has led to positive results. The students have successfully presented their projects, moreover, they were willing to continue working in groups. They had ideas for new projects. The important result of the use of facilitation methods was the improvement of the pedagogical craft of the teacher.

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**Teachers as Educators and Learning Researchers:  
Through Professionalism Development in the  
Lesson Study Community of the Muhammadiyah  
School of Central Java**

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Muhammadiyah  
Semarang,  
Indonesia

**Keywords**  
Educator  
Teacher,  
Learning  
Researcher,

Learning in the 21st century today requires curriculum development, including learning guided by the application of problem-solving learning methods (Case Method) and project-based groups (Team-Based Project). Team-Based Project-based learning in solving problems is a characteristic of learning through lesson study (LS). LS is a professional development model that includes a collaborative development cycle of lesson plans, lesson delivery along with classroom observations, question and answer and after-lesson reflection, and revision. The development of lesson study activities in 40 LS teams of Muhammadiyah

Professionalism,  
Lesson Study  
Community,  
Muhammadiyah  
School

schools throughout Central Java, has produced 40 LS scientific articles. This article is a teacher's best practice for LS that has been implemented in schools. This article provides an overview of understanding the implementation of LS, research skills, writing skills, and professional improvement of teachers and the quality of learning. The data obtained are: (1) teachers are trained to work in teamwork in a LS community; (2) between teachers will learn from each other, and learn from other teachers; (3) there is an exploration of knowledge by the teacher; (4) Continuous cyclical activity; (5) continuous professional development occurs; (6) gave birth to the character of self-evaluation of learning. (5) Dissemination of information as a learning good practice; (7) resulting in the development of new knowledge and skills. (8) scientific articles as a portrait of LS implementation. (9) the findings of research skills for teachers to improve the quality of their learning; (10) the findings of teachers as educators as well as learning researchers.

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### **How can the facilitator contribute to the teachers' exploratory conversation related to the curriculum in physical education (PE)?**

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Næsheim-  
Bjørkvik, Silje  
Eikanger Kvalø,  
Nina Helgevold

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Stavanger,  
Norway

**Keywords**  
Facilitator's  
Role, New  
Curriculum,  
Physical

**Introduction** A new curriculum was introduced in schools in Norway 2020, and a new term, “embodied learning”, appeared in PE. The department of education highlight the importance of collaborative planning and reflections when working with the new curriculum. Lesson study may be a way of doing this, but there is a lack of research regarding Lesson study in PE and the facilitator's role. This study focuses on the facilitator’s role in the planning session for the first research lesson and explores how the facilitator can contribute to the teacher’s exploratory conversation related to “embodied learning”.  
**2 Methodology** This is a qualitative study with a hermeneutic phenomenological approach. The sample consist of one Lesson Study group in PE in a lower secondary school in Norway. The group consists of two facilitators and four teachers. One facilitator has

Education,  
Embodied  
Learning

background as a PE-teacher but is not experienced, the other one is a trained facilitator, but have little knowledge regarding PE. The researcher has been a participating observer in the role as the “knowledgeable other”. The data consists of audio recordings and field notes. 3 Findings Findings showed differences between the facilitators, both in the way they communicated with the group, asked questions and how they used the new curriculum in planning and discussion the research lesson. 4 Conclusion It seems important that the facilitator has professional knowledge regarding PE and the role as a facilitator to contribute in the best possible way regarding the teachers' exploratory conversation.

384

**Effect of "student-lecturing" teaching model on eighth students' attitude towards mathematics in Mianyang, China**

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Malaya,  
Malaysia

**Keywords**  
"Student-  
Lecturing",  
Teaching Model,  
Attitude  
Towards  
Mathematics,  
Communication  
Skill

Student-lecturing is an innovative teaching model which allows students to express their problem-solving strategies and ways of thinking using mathematical language. It not only allows students to demonstrate their thinking process, but also creates a relaxed classroom environment for students to overcome their fear of expressing mathematics, thus changing their attitude towards mathematics. However, the traditional teaching method place students in a passive accepting position, causing them to believe that mathematics is difficult and dull, leading to a loss of interest in the mathematics. This study analyzed the effect of the "student-lecturing" teaching model on students' attitudes toward mathematics through a one-and-a-half-year controlled experiments with eighth-grade students in Shaoguan, China. The result of this study shows that "student-lecturing" teaching model not only helps to develop students' problem solving skill and communication skill, but also gives students the opportunity to express themselves with mathematical language, which in turn enhances their attitude towards learning mathematics.

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**Student learning champions as co-creators of their learning experience in higher education**

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United Kingdom

**Keywords**

Co-Creation Of Learning And Teaching, Student Learning Champions, Student Voice, Lesson Study In Higher Education

In terms of academic research, using students as co-creators of their learning is almost unheard of in Higher Education (HE) globally. Yet, the benefits are clear: a close connection with the learner and their experiences, a focus on voice and true agency, and a wealth of new ideas about approaching topics “the students never really got”. Some of the more intangible benefits include improved student-teacher relationships and increased student confidence. This paper focuses on discussing some of the benefits of engaging higher education students in the planning and evaluation of their own learning experience by taking part and engaging in a Learning Research Group – an adaptation of Lesson Study into higher education. Some important aspects of the model developed include its interdisciplinary nature and the inclusion of student learning champions in the planning of lectures and seminars. As part of this research, a prototyping trial of the model was carried out to examine the efficacy of the model in one undergraduate module in the Department of Education and Childhood Studies, Swansea University, UK, in 2021-22. In this paper the model developed and trialled will be outlined and some findings will be discussed, including some of the benefits of developing student learning champions in HE settings as well as challenges, opportunities and future prospects for further development of this approach.

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**A Comparison of Collaborative Learning and Individual Learning: Does Working in Collaboration Inhibit Student Teachers’ Productivity?**

Son Sokun,  
Voleak Chap

A common belief held among student teachers is that working in a collaborative group is better than working alone. Research shows higher variation intensity for the

Cambodia

**Keywords**

Collaborative learning,  
Individual learning,  
Productivity

individual groups than for the collaborative group for several educational tasks such as idea generation and memory tests. To gain a better understanding of this theory-practice gap, in this study, we aim to compare the performances of collaborative and individual groups on idea generation and memory assessments and to further explore factors that contribute to collaborative failure or success. To achieve this objective, two experiments were conducted, in experiment 1, ten students were purposively selected into two groups of five, and each group member was instructed to consider ways to increase the number of foreign tourists in Cambodia. Students in the collaborative group were asked to generate as many ideas as possible through consulting with group members. Individual group students were asked to come up with ideas without consulting with the other members. In experiment 2, we employed the same procedure as in experiment 1. Forty picture norms (e.g., grapes, sailboat, and hammer) were adopted from Weldon and Bellinger (1997) to test collaborative and individual remembering. We record digitally during experiments and conduct semi-structured interviews afterward. Qualitative and quantitative data analyses are used for comparing, theming, and summarizing the results and findings. The preliminary result of experiment 1 shows that the collaborative group brainstormed more than individuals and was equal to the nominal group.

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**Exploring The Effectiveness Of Grouping System  
By Combining Students With Different Multiple  
Intelligences In A Group To Enhance Learning  
Experience Through Lesson Study**

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SMK Alam  
Damai, Malaysia

In line with the vision of the Ministry of Education Malaysia which wants quality education to produce educated people, various initiatives by educators have been done to respond to this vision. Satu Untuk Semua, Semua Untuk Satu (SUSSUS) is a group initiative to

**Keywords**  
Multiple  
Intelligences,  
Learning  
Inclination,  
Learning  
Method

encourage students to work in groups as well as foster the development of the intelligence of various students in the classroom. This SUSSUS initiative was done in two classes, namely 2 USM and 2 UPM at SMK Alam Damai, Cheras. Five groups were formed in each of the classes and each group consisted of five to six students that consists the combination of various levels of achievement and inclinations of students. Questionnaires were given to each student to determine their learning inclinations or multiple intelligences (visual, audio, kinesthetic or interpersonal). Subject teachers of these two participated classes shared their ideas and collaborated with others through lesson study and practical teaching. The method used in measuring the effectiveness of this practice is by questionnaire, conduct interview and teacher's observation. The findings of the questionnaire have shown an increase of 50% on the statement "I give a good commitment to my group." Data from teacher's observations shows that students showed interest in the lessons if the teacher include four main features of multiple intelligences during the lessons. Through this SUSSUS initiative, students have the opportunity to learn in teams, playing better role in their groups based on their respective learning inclinations and this is relevant to future lessons.

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### **Student Teachers' Metacognitive Judgment of Learning Behavior in Cambodia**

Son Sokun  
Cambodia

**Keywords**  
Metacognitive,  
Students,  
Teachers,

Despite the researchers have developed and evaluated the robust techniques to sustain learning and instruction, student teachers may lack metacognitive judgment in real-world learning behavior and instead implement ineffectual learning techniques. To better understand student teachers' learning behavior, this study examined Cambodian student teachers' metacognitive judgment of three empirically validated learning techniques and

Learning  
behaviour

whether it differs across educational psychology curricula. We conducted an online survey of 580 first-year student teachers at Battambang and Phnom Penh Teacher Education Colleges and asked them to judge how much of their response was correct after predicting the learning outcomes of the educational scenario described. The preliminary results of this study showed that student teachers had lack metacognitive judgment about the undermining effect of extrinsic rewards, a collaborative inhibition effect, and a distributed practice effect. These results suggest that student teachers who failed to predict scenario outcomes, but their confidence was high, and those who were more accurate in predictions were also more confident in their ability. This erroneous judgment of popular learning techniques might lead to maladaptive learning behavior and overconfidence in their ability. Hence, further intervention studies on student teachers' judgment of learning techniques should be investigated. The results also suggest that student teachers' metacognitive judgment did not significantly differ across educational psychology curricula.

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### Lesson Study as Practitioner Research

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**Keywords**  
Student Voice,  
Vocational  
Education And  
Training,  
Assessment  
Literacy

Educators plan and teach, they observe and reflect on their teaching just as they diagnose, evaluate, and celebrate successful learning of their students. At the same time, they also question what they observe. Where uncertainty, insecurity, wonder, or mere curiosity originate, often begins the inquiry of teaching, its professional development and innovation. In this presentation, practitioner research refers to the systematic collection and analysis of data by teachers in their classrooms, with the purpose of developing their professionalism and directly implementing the findings of their research for the benefit of learners. In their research, practitioners strive to meet the quality criteria of qualitative research and to use comprehensible, credible, and accurate procedures of data collection and analysis. Their research projects are often

transdisciplinary and they draw on theoretical foundations from subject sciences, education, psychology, sociology, anthropology, and philosophy, or from a triangulation of them. This presentation describes four case studies of practitioner research and it analyses insights from Lesson Studies on didactic research questions as valuable contributions to the development and innovation of learning in primary and lower secondary classrooms on the basis of the above mentioned quality criteria.

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**Developing the critical and creative thinking skills of prospective Biology teachers utilizing the Problem-Based Learning integrated with Lesson Study during lectures at the COVID-19**

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**Keywords**

Lesson Study,  
Problem-Based  
Learning,  
Critical and  
Creative  
Thinking,  
Prospective  
Teacher,  
COVID-19  
Pandemic

The COVID-19 pandemic has transformed all forms of learning previously incorporated in the classroom into virtual classes utilizing various internet-based online tools. Lesson study, which is often done in class, must be converted into online observations within all limits. As a result, educators must be creative for student-teacher candidates to maintain their performance in carrying out Lesson Study. The goal of this research is to show how Problem-Based Learning can be used to improve students' critical and creative thinking skills through online Lesson Study activities on the Google for Education platform. This study included 68 prospective Biology teacher students divided into two classes. This research employs a Lesson Study, with the steps being Plan, Do, and See. A group of students was created, and each group was responsible for teaching the Digital Age Biology course material using the Problem-Based Learning paradigm. All stages of the Lesson Study are completed online using the Google for Education tool. The data were collected utilizing the critical and creative thinking ability observation sheet as well as questions on the pre-test and post-test. The findings indicate that there is an improvement in students' critical and creative thinking skills toward the application of Biology learning innovations in the digital age. In the Digital

Century Biology Learning course for Biology teacher candidates, students must enhance their skills in observing, reflecting, and using other learning models to improve other 21st century competencies.

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### Assessing Student Performance through Online Game-Based Learning

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Aini Haziah  
Amirullah

Malaysia

#### Keywords

Assessing,  
Performance,  
Online, Game-  
based learning

Online game-based learning refers to the use of games to enhance the learning experience, while maintaining a balance between content and gaming. This research implement the educational game version of Wordwall, Liveworksheets, Kahoot, Gamilab and Quizizz. The aim of this study was to explore the influence of applying online game-based learning to students. How do online game-based learning can contribute to students engagement in a lesson and as to motivate students to learn in these immersive environments. As for now, many students are less interested in online lesson. It can be seen by the percentage of student present in the online lesson gradually decreased. The research was conducted among 30 standard four students from a primary school in district of Seremban. A pre and post test were given to the students. Other teachers in the Tamil panel were doing the observation and gave their reflection based on students reaction during the online lesson. Teachers in the panel gathered in reflection session after the online lesson. After the lesson, it showed that the performance of student in the post test increased compared to the pre test. 24 of them scored more than 80%. A significant increase of student attendance from 33% to 80%. Observation by teacher in the panel showed students' fun learning. The value of the fact that online game-based learning, increase interest level, educational innovation and motivation that have shown significant improvements. In recent years, the changes experienced new educational formulas towards active and dynamic learning and teaching.

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Kusanagi

The University  
of Tokyo, Japan

**Keywords**  
professional  
learning  
community,  
tokkatsu, social  
development,  
character  
education,  
Indonesia

This presentation explores a case of elementary school reform in Indonesia. The majority of lesson study in Indonesia are implemented for the subject-teacher forum. However, a whole-school lesson study requires a transformation of an organizational norm. In fact, in the top-down culture of the Indonesian school context, there are challenges in implementing student-centered approaches and collaborative learning proposed by lesson study. To overcome this challenge, School Y introduced another Japanese education model called Tokkatsu. By incorporating various Tokkatsu (non-academic) activities into lesson study, teachers were able to equip students with “learning skills,” which prepared them to engage in collaborative learning. Through facilitating students to build classroom communities, teachers realized students could do more than they had initially imagined and reconceptualized their understanding of student learning. By exchanging these experiences, teachers were able to share new ideas and connect with one another for the shared mission to ensure the well-being of students during the COVID-19 pandemic. The findings show school reform by lesson study requires transforming social relationships among teachers in order to build dialogic relationships. By incorporating Tokkatsu into lesson study, teachers were able to experiment with student-centered pedagogy in non-academic activities first. Through these activities, teachers gradually deconstructed the boundary between teachers and students and were able to build an emphatic relationship with students. While the past research of lesson study focused on improving academic and cognitive learning, this study focuses on school reform for holistic learning, including social and emotional learning.

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Policy Research,  
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**Keywords**  
Reflection,  
Agency,  
Organizational  
Development,

The purpose of this study is to elucidate the mechanisms by which schools build professional capital in the schools through curriculum management. Lesson Study aims to improve the teaching competence of the school's teachers and their ability to develop the school's organization. The presenter, Tamura, promotes curriculum management, a form of Lesson Study for school organizational development. Professional capital is a framework proposed by Hargreaves and Fullan (2012), which considers teachers' professional capital in terms of human capital, social relational capital, and decision-making capital. As the core of decision capital, this study set reflection. Van=Manen (1977) divided reflection into three stages: technical reflection, practical reflection, and critical reflection. Technical reflection is the technical application of generic principles to achieve a certain goal. Critical reflection is a deep understanding of the goals and values of education, and practical reflection is the improvisational application of those principles in practice. Lesson Study based on technical reflection does not transform a group of teachers, but it requires practical and critical reflection. T Junior High School, which will be discussed as a case study in this presentation, had been able to foster social capital through the leadership of the principal who respected the agency of the teachers, but reform was insufficient. The school then began curriculum management, and succeeded in creating a shared educational goal for the group of teachers, and as a result, the group of teachers began to engage in practical reflection and critical reflection.

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**Study of Japanese Elementary and Junior High  
School Textbooks for Foreign Language Education-  
From the Perspective of Global Children's  
International Issues**

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Miyuki  
  
Aichi University of  
Education,  
Japan

In this presentation, I will analyze Japanese Elementary and Junior High School Textbooks for Foreign Language Education from the perspective of international understanding education. The new Course of Study Guidelines for the start of the 2020 academic year at elementary school and 2021 at Junior high

**Keywords**  
Textbooks for  
Foreign  
Language  
Education,  
The new Course  
of Study,  
Japanese  
Elementary  
School, Junior  
High School,  
Child Poverty  
And Educational  
Inequality

schools. MEXT also states detailed aims in its practical guide of the Course of Study as below; **OBJECTIVE** To develop pupils' competencies that form the base of communication, (1) To notice the differences between the Japanese language and foreign languages, (2) To cultivate the base for the ability to communicate their own thoughts and feelings etc. and (3) To deepen the pupils' understanding of the underlying cultures of foreign languages and foster an attitude of attempting to proactively communicate in foreign languages while giving consideration to the people they are communicating with. On the other hand, in the world, many problems that children have in their daily lives, such as "the relationship between child poverty and educational inequality," are occurring as international problems (UNICEF). From the view of these points, in foreign language education in Japan, about the children's problems that are occurring as international problems. I will analyze how they are treated in textbooks and consider the significance of teaching a foreign language as an international common language.

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### **Exploring Students' Participation in Content-Language Integrated Learning (CLIL) Conducted Online**

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Kebangsaan  
Malaysia,  
Malaysia

**Keywords**  
Content-  
Language  
Integrated  
Learning,  
University  
Students, Online  
learning

Universities all across Malaysia are trying to find effective ways to improve their student's proficiency in the English Language. Universiti Kebangsaan Malaysia (UKM), as the only University in Malaysia that uses the Malay Language officially in most programs have implemented the Content-Language Integrated Learning (CLIL) program to help students improve their English Language through content-based courses. GF1123 Human Anatomy and Physiology, a first year Physical Education (PE) program is one such course identified to implement CLIL. Due to the COVID-19 situation, all course activities were conducted online using PearDeck. Lectures were conducted in both the Malay and English Language. The lecture slides and all interactive activities during classes were in the English

Language, but the explanation by the lecturer during class were in the Malay Language. This is to ensure that students understand the content while have the opportunity to also learn in English. Students were not forced to response in English, but were strongly encouraged to do so. Student's participation were evaluated based on responses in PearDeck in five (5) of the 14 lectures throughout the semester. The results of the study found that 60% of the responses were in English, and used the correct English terminology. However, there were many grammatical mistakes in their responses. In conclusion, CLIL encouraged students to actively participate in learning English and students' demonstrated mastery in content terminologies. Further study is needed to explore improving grammar through CLIL.

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### **Lesson study: a dialogical experience in Brazilian public schools**

Paula Castro

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Cambridge,  
Brazil

#### **Keywords**

Lesson Study in  
English  
Teaching,  
Dialogical  
Practices,  
Teacher  
Learning,

This paper discusses the implementation of a Lesson Study cycle (Dudley, 2019) with English teachers from three public schools in Bahia, Brazil, in 2021. In general, the teaching and learning process in Brazilian public schools is based on the use of traditional textbooks which become the sole guide for the sequentially taught lessons. In other schools, “Sistemas de Ensino” (teaching systems), produced by different publishers, are adopted, consisting of a set of handouts with the presentation of scheduled classes, and prescriptive pedagogical content to be implemented nationwide, turning education into a mere commodity. Despite these constraints, it was possible to develop a Lesson Study experience as a collaborative and dialogic strategy for reflective exchange on active pedagogical practices amongst elementary teachers of English (L2). Notwithstanding the unfavourable physical and technological infrastructure of the schools, the teachers' interest and engagement enabled dialogue in which different knowledges were recognised and valued. Noticeably, the safe environment created through

Lesson Study to enhance trust amongst teachers favoured the sharing processes minimising the resistance teachers historically present to exposing their own challenges, opening the way to formative interactions. Understanding education as a process of human interactions and in which, according to Freire (1980), one can only learn in communion, the experience of implementing a dialogic Lesson Study cycle in public schools, even given the use of prescriptive content manuals, proved to be a liberating experience for teachers seeking more active and meaningful practices in English teaching to improve student learning opportunities in a second language.

408

### **Lesson and Learning Study for Primary School Teachers in Palembang**

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Indonesia

#### **Keywords**

Lesson, Learning study, Primary school

This study aimed to enhanced teachers' professionalism in conducting a learning through Lesson Study for Learning Community (LSLC) and Indonesian RME (PMRI) approach. Through descriptive method, this study presents the results from workshop, observation, and interview that has been done to draw on data. Teachers were introduced to LSLC and PMRI through workshops that supported teachers' point of view of what LSLC and PMRI is, teaching materials and assessment that could enhanced students in learning, and some peer-teachings. During workshops, teachers were asked to make a teaching material that can be used to teach given mathematics content and continued by peer-teaching activities. The learning was observed by the researchers and other teachers and continued by review the learning together. As the results, the teachers have demonstrated the instructional practices of LSLC system as they progressively engaged with the system and the students showed that they grasped the learning very well.

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**Enhancing Teachers 'Competence And Collaborative Practice Through The Implementation Of Lesson Study In The Teaching Of Mathematics**

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Amirullah

Universiti  
Kebangsaan  
Malaysia,  
Malaysia

**Keywords**  
Professional  
Learning  
community,  
Lesson Study,  
Competencies

The implementation of Professional Learning Communities in schools was found to be inconsistent with the efforts made by the Ministry of Education. A preliminary study conducted in the Seremban district showed that the implementation of Professional Learning Communities in schools was below 12%. Although 85% of them agreed that the Lesson Study should be implemented but the lack of time is a significant factor in Lesson Study not being practised. Classroom-based research with the Lesson Study approach was conducted in a school in Seremban District. The aim of the study is to see to what extent the implementation of Lesson Study can improve collaborative practices and teacher competencies. The Mathematics Committee has been selected to undergo this implementation process. Together with 7 Mathematics teachers in the school, the lesson plan was discussed with the committee members after the student learning issues were identified. A teacher with 25 years of teaching experience has been assigned as a model teacher who teaches Mathematics to 25 Form two students in a school in the Rantau district. The teaching process was done twice. Observations during the teaching and learning sessions for both sessions were analyzed by committee members and SISC+ in a reflection session after each lesson. The increase in teacher competence is clearly visible, especially in the handling of teaching aids and the implementation of more active group activities. There is a change in teacher teaching from teacher-centred to student-centred learning. Teachers are encouraged to collaborate rather than work in silos.

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**Using Lesson Study to introduce STEM lessons emphasising Design Thinking principle amongst teacher candidates in Brunei**

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Roslinawati

Universiti  
Brunei  
Darussalam,  
Brunei

**Keywords**  
STEM, Teacher  
Candidates,  
Mathematics  
Education,  
Science  
Education,

Lesson study has been widely conducted in primary and secondary teaching worldwide. In recent years, different studies have explored the benefits of lesson study among higher education academics. This paper investigated the use of lesson study in teaching Master of Teaching Primary Education teacher candidates on STEM lessons emphasising the Design Thinking principle. Two teacher educators teaching Mathematics education and Science education designed lessons to teach teacher candidates STEM lessons in primary schools using the lesson study approach. The study involved 3 dimensions: 1) STEM Education for primary school, 2) The process incorporating Design Thinking principle, 3) STEM Education across learning areas in teacher education faculty. This study used a self-study research design in discussing the lesson study approach in teaching the teacher candidates STEM lessons. The experiences and critical incidents in incorporating STEM lessons in cross-discipline learning areas are discussed.

414

### **Lesson Study in Teacher's Professional Development: The Issues and Challenges in Malaysian Education Context**

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Malaysia

**Keywords**  
Teacher's  
professional  
development, ,  
Content  
knowledge,  
pedagogical  
knowledge

This paper explored the implementation of Lesson Study, one of the teacher's professional development activity which based on Japanese model in Malaysia education context. It seeks answers for the issues and challenges of teachers in practicing Lesson Study for the development of students during the teaching and learning process. This qualitative method of study was employed involving three secondary schools in state of Selangor. Each school was assigned to form a Lesson Study group as a case. All of the cases had 4 teachers. The participants of the groups engaged themselves in Lesson Study process for a period of 2 months. Each lesson Study cycle required the participants to collaboratively plan, discuss, teach, observe and reflect on particular Mathematic lesson. Multiple data were

gathered through observations, group discussions, reflections and interviews. The analysis of the study indicated that the participants do not have enough time to review, and reflect their lesson. Consequently, the participants expressed lacking confident in deliver the content knowledge and applying pedagogical knowledge while observed by group of educators. Moreover, most of them expressed that the time constraint in implementing the process of Lesson study cycle completely. This study revealed that the culture of participants less accepting the Lesson Study model. However, they agreed that Lesson Study can be implemented successfully if they provided with sufficient and positive support from administrators, dedicated group leader and collegiality among group members.

**415 Promoting prospective biology teachers' Creativity, Communication, and Collaboration skills through Remad-Cocoper**

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Kundariati,  
Ahmad Kamal  
Sudrajat

Universitas  
Negeri Malang,  
Indonesia

**Keywords**  
Communication,  
Collaboration,  
Creativity,  
Remad-Cocoper

Remad-cocoper is innovative learning strategy that includes reading, making mind maps or concepts, discussing, collaborative learning, cooperative learning, presenting, elaborating, and reflecting. This study aims to improve the 21st-century skills of prospective biology teachers by using the Remad-cocoper. This mix-method study was conducted in August-December 2021 in a quantitative research methodology course with 14 prospective biology teachers as the research sample. Research instrument using observation sheet for manuscript assessment and presentation that was developed. The research was started by dividing the class into five Lesson Study (LS) teams. Each LS Team teaches two topics of Quantitative Research Methodology to their classmates using the Problem Based Learning (PBL) by seeking to develop one or two 21st-century skills chosen by the Team. Lesson study activities are carried out in 3 stages of activity, namely, plan, do, and see. Furthermore, at the Plan stage, the LS Team develops learning instruments using PBL. In the

do stage, one of the prospective biology teachers becomes a model lecturer who teaches the material to other friends while the other group members become observers. At the See stage, reflection is carried out on the learning that has been done. Reflection results are used as the basis for making improvements to the second topic of learning. Based on the results of the study, it was concluded that this strategy could develop the creativity, communication, and collaboration skills of prospective biology teacher students. Five manuscripts have been successfully compiled that present the results of two lessons using the Remad-cocoper

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### **Lesson Study for school leaders: A model to develop a new learning culture in schools**

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Tscherne

Austria

#### **Keywords**

Lesson study,  
School leaders,  
Model, Learning  
culture

This paper will outline the role of school leaders in the implementation process of Lesson Study as a tool for staff-, team-, and organisational development based on a systematic literature analysis. Furthermore, it will explore the question of how the Lesson Study method can be anchored in the school culture by promoting organisational learning. Research has shown that a “school that is or strives to become a learning organisation makes lessons learned – whether good or bad – available to all staff in order to learn from these.” (OECD, 2018). In this context, it is of research interest to identify arguments for the beneficial use of Lesson Study for continuous instructional and school development. Lesson Study is therefore implemented as a tool for sustainable professionalisation of teachers while strengthening team orientation at the school site. Our model demonstrates how school leaders can integrate Lesson Study into existing structures as an approach to organisational learning. It is intended to encourage school leaders to use Lesson Study, in addition to continuous instructional improvement, as a proven human resource development tool to promote and support staff in their personal and professional development and to develop a suitable concept for the introduction of Lesson Study tailored to the school site

in the context of a school development project and to integrate it later as a process into existing structures. The presentation analyses the model in the light of a pilot study with school leaders.

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### **Effectiveness of a Professional Development Program for High-School Science Teachers Using Avatar Role-Playing**

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Niigata  
University,  
Japan

**Keywords**  
High-School  
Science Lessons,  
Avatar Role-  
Playing,  
Professional  
Development  
Program

As the new Course of Study for high schools fully implemented in Japan, teachers are encouraged to use active learning instructional strategies. However, high school teaching in Japan is known to be one-way didactic, and many high-school teachers are not well-prepared for implementing active learning instructional strategies. Literature indicates that mere lectures are not effective in changing high-school teachers' didactic teaching. More practical ways of helping high-school teachers acquire active-learning instructional strategies are needed. In this study, a professional development program using avatar role-playing was developed and tested. A scenario for avatar role-playing was developed in the area of Newton's third law of motion. Avatar sessions were held with 9 in-service and pre-service teachers to see how they teach a ten-minute science lesson with avatar students. The sessions were videotaped and coded using an observation rubric by researchers. Survey and interviews were conducted to see how they think and feel about their teaching with avatar. The results indicate that the avatar sessions revealed participant teachers' basic thoughts and attitudes in teaching science more than just testing their teaching skills. Also, all the participants mentioned that the use of avatar role-playing is an effective way of improving their teaching. More discussions will be presented including our next step.

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### **Sustainability Of PLC Implementation In School During The Covid-19 Pandemic: Experience In One Secondary School In Port Dickson**

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Sooria  
  
Seremban  
District  
Education  
Office, Malaysia

**Keywords**  
The policy of  
PLC  
Implementation,  
Management Of  
PLC, Leadership  
Style,  
Sustainability

The policy of PLC implementation and the management of PLC among curriculum leaders in schools is crucial to support the role of schools as learning organizations. The unexpected health crisis during the COVID-19 pandemic has affected the PLC implementation in most of the schools due to the constraints encountered. Most of administrators, PLC Coordinators, Senior Subject Teachers and head of panels who are the Middle Leader (ML) in school has implemented PLC based on their own interpretations, beliefs and views to adapt to the current situation. This study conducts a qualitative method and document analysis to explore the policy of PLC implementation and the management of PLC as well as the leadership style applied by six curriculum leaders in one of secondary schools in Port Dickson district to ensure continuous implementation of PLC even during the COVID-19 pandemic. The findings of this qualitative study indicates that the sustainability of PLC implementation in this school are mainly driven by the management of PLC policy as well as the flexible leadership style of school administrators and intermediate leaders. PLC management policy formed by the District Education Office during the COVID-19 pandemic also influenced the decision made by the school administrators in ensuring PLC is implemented by all teachers. Coherence in thoughts and actions among leaders in this school managed to unite all teachers to implement PLC despite of face-to-face limitations. The findings of this study provide a broad overview to school leaders on PLC improvement sustainability in school regardless of situation

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### **Improving writing skills through project-based learning**

Nagima  
Sarsenbayeva  
Nazarbayev  
  
Intellectual  
School of

The study was conducted in collaboration with 7th grade Kazakh and English language teachers. The purpose of the study was to find out factors that adversely affect the writing outcomes of students aged 12-13 in Nazarbayev Intellectual school in Taraz, Kazakhstan. Both lesson observations and assessments of written assignments

Physics and  
mathematics in  
Taraz,  
Kazakhstan

**Keywords**  
Kazakhstan,  
Project Based  
Learning,  
Writing  
Outcomes,

showed that the learners were facing problems in the assignments related to higher-order and -critical thinking skills. In order to improve the learners' writing outcomes, it was decided to introduce learners to conducting small-scale research through employing project-based learning. The focus group of the study was 24 students in grade 7. During the study, the mentioned teachers studied the literature related to the use of project-based learning methods during the lessons as well the literature related to conducting the small-scale study was reviewed. Learners were mentored and coached to conduct small-scale research for five months. Learners learned how to collect the data and analyze it. This process had a great impact on enhancing the learners' writing results. 5 students out of 25 were able to get A\* and 15 received Bs while 5 of the students got As.

432

### **Cone Of Experience To Achieve Independent Learning In Economic Learning: Lesson Study Perspective**

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**Keywords**  
Cone of  
Experience,  
Independent  
Learning In  
Economic  
Learning,  
Lesson Study

Era Pendidikan Distruptive pasti akan mengubah kecekapan yang dimiliki oleh pelajar. Sebagai tambahan kepada kecekapan asas yang mesti dimiliki, pelajar juga mesti menyesuaikan diri dengan membangunkan piawaian. Terdapat sekurang-kurangnya 5 kecekapan untuk dapat bertahan dalam era pendidikan yang mengganggu ini, iaitu kecekapan pendidikan, kecekapan untuk pengkomersialan teknologi, kecekapan globalisasi, kecekapan dalam strategi masa depan, dan kecekapan kaunselor. Kecekapan ini perlu dimiliki untuk meningkatkan daya saing pelajar dalam era pendidikan yang mengganggu sekarang. Kajian ini bertujuan untuk menerangkan pelaksanaan pembelajaran ekonomi berdasarkan pengalaman dari perspektif kajian pelajaran. Penyelidikan ini dijalankan di Universiti Negeri Malang mengenai Pendidikan Ekonomi. Hasil yang diperolehi dengan kajian pelajaran menggunakan bahawa pembelajaran bebas dicapai melalui pelaksanaan kon pembelajaran berasaskan

pengalaman.

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**Lesson Study As An Approach In Improving Creative Thinking Skills: Insights From The International And Environmental Issues Course.**

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Haslinda

Universiti  
Kebangsaan  
Malaysia,  
Malaysia

**Keywords**

Creative  
Thinking,  
Design  
Thinking,  
Lesson Study,  
4R, Upper  
Secondary  
Schools

The development of creative thinking is a challenge to be achieved across subjects in secondary schools. Creative thinking skills are found lacking among students in upper secondary schools. A design thinking approach via the 4R (reduce, reuse, recycle, and recover) module has the potential to effectively enhance the mastery of this skill in the International and Environmental Issues course. However, to effectively implement in classroom settings, lesson study is needed. Therefore, this study is aimed at evaluating the implementation of lesson study as an approach in improving creative thinking skills development via the 4R module. This study was a mixed methods research design, and data was collected via survey questionnaire, structured observation, and document analysis. A total of 40 Form 6 students and 3 teachers from a selected school in Melaka were selected as the sample of this study. The data was analysed using descriptive statistics and thematic analysis. Generally, the findings suggest that the teachers and students were initially struggling to adapt to design thinking in teaching. However, students were able to successfully complete the tasks by applying a design thinking approach to learning. In short, the lesson study was able to help teachers improve their teaching practises over time. The findings can be used as a reference for effective implementation of design thinking in different courses as an approach to effectively developing creative thinking skills.

441

**The Unseen Role of School Leadership, Management and Policy as Shapers of Teacher Learning: As Operative in Collaborative Discussions by Two Professional Learning Communities (PLCS) in Malaysian Schools**

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Derk

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University,  
Malaysia

**Keywords**

School  
Leadership,  
Teacher  
Collaborative  
Discourse,  
Micropolitics,  
Educational  
Policy,  
Performance  
Management

At the heart of Lesson Study, as well as other transformative professional learning and development approaches, are the collaborative discussions that take place among teachers in a collegial school environment, focused on student learning and improving the quality of instruction. The role of school leadership, by contrast, is often framed as being to create conducive work conditions and incentives for teachers to work towards improving student learning. In other words, the relationship between school leadership and student learning is often considered an indirect one. In this presentation, I focus on how the combination of management and policy conditions can shape teachers' sensemaking process in their collaborative discussions, influencing both their diagnostic and prognostic framings of their problems of practice. Through the discourse analysis of three critical cases, I show how these conditions shape teachers' framing of what are considered problems (or non-problems) in their contexts, as well as what are considered appropriate solutions to said problems, linking these to specific policy and management imperatives created by the bureaucratic governance structure of schools. The data is taken from ethnographic research, conducted in 2019, in two secondary schools in Malaysia, whose teachers were engaged in regular collaborative discussions. Various implications will be discussed for educational administrators, school leaders and teachers, including the call for instructional leadership, for greater awareness of the unintended consequences of policy, and for critical literacy regarding educational governance mechanisms.

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**Strategies and Practice of Professional Learning  
Community (PLC) : Teacher Competency and  
Students Engagement in TVET Education.**

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Isham

Malaysia

Professional Learning Communities (PLC) is known as a tool in teacher professional development which cater the education development needs as implied in Falsafah Pendidikan Kebangsaan to ensure that the educational output of the student is at the optimum level and meets

**Keywords**  
PLC, Teacher  
Development,  
Teaching and  
Learning, Students  
Engagement.

the needs of future careers. Education worldwide is facing tremendous challenges in the new digital era requires teachers to be creative and innovative in designing strategies, methods and techniques to engage the students actively. Thus, teachers involvement in practising collaborative tools is seen as continuous development that may lead to teaching and learning quality. Thus, the researcher would like to see how PLC strategies is practised in the classroom and influence the teacher competency and students engagement. A qualitative study design was implemented to answer 3 research questions and the data were obtained through observations and written responses from teacher and students. All responses were analyzed according to the research questions and recurring themes. Finally, the findings clearly showed that there are a few strategies commonly practised in the classroom which meets teachers individual professional needs. Respondents advocated PLC in teaching design and practice is closely connected to professional competency development, teachers self-efficacy and influence students engagement in the teaching and learning. A number of implications were derived to encourage further research and practice.

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### **Malaysian Teacher's Perspective on Professional Learning Community (PLC)**

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Sabri,  
Warabhorn  
Preechapor

Malaysia

**Keywords**  
Malaysian,  
Teacher,  
Perspective,  
Professional

The objectives in studying on professional learning communities are to improve teachers' professionalism and well-being, and create positive impacts on student learning. It is a question of changing the school culture. The main objective of this qualitative study was to investigate the maturity level of schools as professional learning communities from the perspectives of school culture, leadership, teaching, and professional development. The participants' perceptions indicated a culture of collegiality, trust and commitment as common strengths at one school. The school cultures supported professional collaboration, and the teachers had the knowledge, skills and dispositions to engage in

learning  
community

professional collaboration. The challenges were related to structural conditions, especially the lack of collaboration time. One school profiles were identified in the cluster analysis from the viewpoint of maturity as professional learning communities.

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**Impact of English Reading Proficiency on  
Academic Performance of Secondary School  
Students in East Coast States of Peninsular  
Malaysia**

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Malaysia,  
Malaysia

**Keywords**

English Reading  
Proficiency,  
Academic  
Performance,  
Science And  
Mathematical  
Skills,  
Secondary  
School Students,  
Malaysia's East  
Coast

Abstract Students who have excellent reading skills are positively correlated with Science and Mathematical skills. Lack of reading skills can lead to the students' poor academic performance. It is therefore necessary for this research to analyse the impact of English reading skills on the students' academic performance. Four main objectives are to explore, analyse the impact, and evaluate the relationship between English reading proficiency and academic performance of secondary school students in Pahang, Terengganu and Kelantan, and to assess the difference in students' academic performance and reading proficiency. This study is significant to show the impact of English reading skills on students' intermediate learning performance. It will help teachers to adopt direct teaching methods that focus on developmental skills to promote student-reading success. This study also encourages the creation of a reading intervention system. The hypotheses of this study focus on English reading proficiency's impacts on secondary school students' academic performance. The researcher will use pragmatism philosophy. Deductive approach will be used as the research design is mixed-method. Data will be collected directly from the respondents by conducting survey, so primary method of data collection will be used. The population of this study will be students from secondary schools in Malaysia's East Coast with the sample size of between 100–350 survey respondents and 20–25 interview respondents. Convenience sampling will be used. Close-ended (survey) and open-ended (interview)

questionnaires will be used as the data instrumentation. The researcher will use SPSS software and thematic analysis (TA) to analyse the data.

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### **Learning to Practice Teaching Mathematics through Problem Solving via Lesson Study**

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Gan Teck Hock,  
Wan Noor  
Adzmin Mohd  
Sabri,  
Warabhorn  
Preechaporn

Malaysia

#### **Keywords**

Learning,  
Mathematics,  
Problem solving,  
Lesson study

The study focused on supporting a team of five primary mathematics teachers in planning a lesson using the Teaching through Problem Solving (TTP) approach. The study design enabled the records of (i) how to develop a research lesson emphasising *kyouzai kenkyuu*, and (ii) evidence and responses to teaching and learning of two decimal places using TTP. Due to the restricted movement and school closure during the Covid-19 pandemic, 6 hours of workshop input on how to carry out the collaborative lesson research (CLR) (Takahashi & McDougal, 2016) model was done online. Stages to prepare a TTP lesson were also included. In wrapping up the lesson preparation, the research team visited the school twice to finalise the research lesson and live lesson delivery. One teacher conducted the research lesson in the presence of team members, the head teacher and two senior teachers. The research team members observed the lesson through video conferencing from their office. The post-lesson discussion was done through video conference too. Students' feedback and LS team members' reflections were gathered and submitted after a day. Recorded video, questionnaires and reflections were analysed. The team experienced the first lesson study and strongly agreed that LS is an effective way to improve teaching practices through collaborative preparation of a good mathematics lesson. Similarly, students were provided opportunities to explore alternative ways of solving, thinking and sharing to communicate learnings with classmates. Most students informed that they understood and enjoyed the lesson that day

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### **Coaching Project Based Learning In The New Norm Through 'ORPA' Teacher Professional Development**

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Lim Ai Teng

Malaysia

#### **Keywords**

Coaching project based learning, ORPA, Teacher professional development

The study of coaching Project-Based Learning (PBL) in remote teaching to an English language primary school teacher is to identify the impact of ORPA coaching in the new norm of teacher professional development. ORPA is adopted and adapted from the Kemmis and McTaggart (1988) model of action research. Due to the constraints of being unable to visit schools and conducting on-site workshops during the pandemic Covid-19 2020, the researcher decided to opt for online coaching and introduce Project Based Learning (PBL) as a way to encourage teachers to implement remote teaching besides reducing the learning deficit of pupils' language proficiency which was required to achieve the performance level 6. Coaching interventions like online PBL briefing and constant coaching through Google Meet and other social media were conducted within a year. Consequently, pupils improved their English language competence tremendously with great engagement, confidence, creativity, and fun learning through well-planned lessons whereby assessments were taken into account throughout their preparation, process, and product of learning. In addition, the teacher gained the confidence to share her best practice in several online conferences in Malaysia and Cambodia. In sum, applying ORPA coaching to encourage teachers to explore PBL could provide more exploration of pupil learning talents explicitly through their manageable creative choices with meaningful authentic learning.

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### **The Use of Economical Token Techniques in Modifying Hyperactive Behavior Problems for Autism Students in Secondary School**

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Manikum

Smk Warisan

This study aims to see the effectiveness of reinforcement techniques for autism students in secondary school. This refers by giving praises and economic tokens in the modification of the hyperactive

Puteri, Malaysia

**Keywords**

Economic token  
technique,  
Modification of  
behavioural  
problems,  
Autism,  
Hyperactive

behaviour problems of autism students. This study was conducted on two autism students who had hyperactive behaviour problems during a learning and facilitation session conducted in the classroom. Autism is a development disorder that impacts a person's ability to communicate and interact with those around them. In overcoming the problems of hyperactive behaviour by the autism students, reinforcement for positive behaviours through the economic token techniques is an appropriate method. This is a qualitative study that examines the increase in hyperactive behavioural problems of autism students in secondary schools. Surveys were made using a four-week observation method involving one week before, two weeks during the and one week after the intervention was conducted. Chart board were used to approach through the method by using tokens to reduce the problem of hyperactive behaviour. Both students have shown a positive improvement after the use of the economic token technique compared to before. The results showed a positive impact and the change on the frequency of negative behaviours to positive behaviour. This shows the autism students that could not focus for more than 10 minutes and the frequency of interrupting other students had been lesser. Using reinforcement method clearly proves in reducing the negative behaviour problem of autism students indirectly and helped teachers in teaching and learning activities implemented.

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**Internalizing Values In Lesson And Learning  
Studies: An Overview Through Teacher  
Professional Development Policy In Malaysia**

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Saad, Mohd  
Fathullah Bin  
Mohd Yusof,  
Razlee Bin  
Mohamad,

Lesson and learning studies improve teachers' quality in delivering learning content to the students. Moreover, teachers also need to ensure they can internalize values in lessons and learning studies among the students despite only receiving learning content and syllabus. Therefore, the Ministry of Education (MOE), Malaysia

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Shaarani, Azhar  
Bin Ahmad

Malaysia

**Keywords**

Lesson,  
Learning studies,  
Teacher  
professional  
development  
policy

relies on the importance of internalizing values among teachers in developing a document on Malaysian Teachers Standard (SGM 2.0). According to SGM 2.0 (2021), teachers must be professional within their area, have a clear understanding on the tasks and responsible for the teaching and learning activities. Teachers also required to maintain the relationship between parents and communities to ensure togetherness in helping students learning. In summary, teachers should strive to appreciate values and ethics in learning and lesson session by fulfilling their responsibilities towards the profession, students, parents/guardian, society, and country.

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**Improving the quality of teacher's skills using the 4C elements through Lesson Study**

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Affandi bin  
Daud@Mohame  
d, Suziela binti  
Md. Tahir

Malaysia

**Keywords**

Teachers' skill,  
4C elements,  
Lesson study

This study aims to see the level of ability of teachers in implementing the learning and teaching process by using the 4C elements. The 4C elements which are Collaborative, Cooperative, Critical Thinking, and Communication will make learning more meaningful for students. This study was conducted using the Lesson Study design with as many as two cycles. This qualitative study focuses on how the implementation of the 4C elements in learning and teaching in the classroom. The research group consists of 3 excellent lecturers and a teacher. One of the members of the research group was selected as a model teacher while the other acted as an observer. Another 2 teachers were also appointed as observers. All learning and teaching processes are recorded in the form of photos or videos. All the data obtained are discussed based on the 4C elements during the cycle 1 and cycle 2 reflection sessions. These data are then transcribed and analyzed. The findings of this study show that at the beginning (cycle 1) teachers are not yet able to fully implement learning and teaching using the 4C elements. Nevertheless, after improvements were made (cycle 2), the teacher stated that he was becoming more capable and mastered the method of implementing the 4C

elements. The results of interviews with some of the students involved also found that they had more fun and better understood the content learned.

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**Empowerment Culture Of Implementation Of  
Lesson Study For Professional Learning  
Community (PLC) To Equity School, Sabah State  
Education Department**

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Rahim, Harris  
Bin Bali @  
Suffian, Cornelia  
Audrey Mudi

Malaysia

**Keywords**

Empowerment  
culture, Lesson  
study,  
Professional  
learning  
community,  
Equity school

This research aims at improving the quality of teaching and learning of teachers in producing effective lesson plan especially in Bahasa Melayu (Malay language) and Sejarah (History) subjects through the practices of Lesson Study. The study focuses on 88 schools for all 24 districts in Sabah, Malaysia. The samples of schools were selected and identified through the data with the highest number of form 5 students with the lowest achievement in their year-end examinations into 2021. The implementation of the program begin with coaching and mentoring by School Improvement Specialist Coach (SISC+) officers to the targeted schools for 1 month and followed by observation and evaluation by Sabah State Education Department officers. As the data collection tool, The practices of lesson study shows that teachers had a positive impression of improvement through the implementation of lesson Study. The production of lesson plan through the Lesson Study approach shows an increase in the mastery of the students' Classroom Based Assessment level. This program is expected to provide an inspiration to all teachers to improve the quality of teaching and learning through Lesson Study practices in their respective schools. Sabah State Education Department intends to compile and transform the best examples of lesson plan in digital form to be use by all teachers

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**Lesson Study Community: Improving Teacher  
Competence**

Norhayati Md Teacher quality is the backbone of student success.

Darus, Norhayati  
Binti Marzuki  
Malaysia

**Keywords**

Lesson Study,  
SKPMg2,  
Learning and  
Facilitation,  
teacher  
competence

Lesson Study is a tool for the development and catalyst for teacher professionalism by referring to a group of teachers who collaborate continuously, producing inquiries and action studies towards the academic improvement of students. Based on SKPMg2 Standard 4 Learning and Facilitation (PdPc) data, it was found that several teachers at SMK Dato' Shahardin were at a good level. The implementation of Lesson Study at the initial stage involved online lessons (PdPr) for Science and History subjects that received feedback from observers from PPD Seremban, UKM and PPD from other states. Therefore, this study aims to see how the Lesson Study community can improve the competence of teachers at SMK Dato' Shahardin. This study involved 48 teachers, 36 students and four counselors. Data is collected through observation, interviews and documents and was analyzed by forming themes. Findings show that collaborative practice in Lesson Study online for the two subjects is based on the theme of sharing information about lesson topics that meet the Content Standards and the theme of skills to use applications during online lessons (PdPR) and the theme of refining teaching materials which are quizzes and HOTS questions (KBAT). The impact of this study shows that collaborative practice can improve the quality of Learning and Facilitation (PdPc) and teacher competence based on SKPMg2 Standard 4 data. Overall, the Lesson Study community enhancement increases the competence of teachers to produce meaningful learning and student achievement in school.

466

**Overcoming The Challenges In English Language  
Communication During Accountancy  
Undergraduate Internship**

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Malaysia

**Keywords**

There have been concerns regarding accounting graduates' lack of English communication skills and the reasons why they are less preferred by established accountancy firms. In dealing with challenges in their English language communication, accountant interns employed strategies that helped to enable them to carry out the tasks assigned and to remain relevant and

Accounting  
Interns, English  
Communication  
Skills, Learning  
Strategies,  
Communication  
Challenges,  
Internship  
Experiences

sustainable during their internship. This paper presents the efforts undertaken by the accounting interns in overcoming the English language communication challenges they faced during their six-month internship experiences at respective companies in Kuala Lumpur, Malaysia. The study employed a qualitative research method using semi-structured interviews with five (5) interns from the Faculty of Economics and Management of a public university in Malaysia. Interviews with two managers and a supervisor who were the person in charge of the interns were also carried out. The interview data was verbatim transcribed and analysed using Braun and Clarke's, six-step thematic analysis. The interns' data were triangulated with the supervisor and managers' views and later validated by three independent coders using the Cohen's Kappa Reliability Test. The findings identified the strategies employed by the accounting interns in overcoming the challenges during their English language communication included speaking English with non-Malay colleagues, seeking help from the supervisor, consulting colleagues or seniors' expertise, and reading work-related documents. The implications of the findings focus on university's role to improve the teaching and learning of English language and to help undergraduates improve their communication skills in English.

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### **Inquiry-Based Teaching Of The Division Of Fractions Among Mathematics Primary Teachers**

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Syrene binti  
Abdul Rahim,  
Syed Ismail bin  
Syed Mustapa,  
Shamsazila binti  
Sa'aban, Azahar  
bin Aziz

This study aims to explore the inquiry-based teaching of the division of fractions among mathematics primary teachers. The main objective of the study was to establish how teachers teach the concept of division of fractions using the inquiry-based method and to find out why they teach in the manner they do. A case study design was used and purposive sampling was implemented to select the participants for the study. The participants consisted of three mathematics primary school teachers who have been trained in using inquiry-

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**Keywords**

Inquiry-based teaching, Division fractions, mathematics

based teaching of mathematics by the Ministry of Education Malaysia. Lesson observations, interviews, and document analysis were used to collect data to answer the research questions. The collected data was qualitatively interpreted and analyzed. The result of the study revealed that teachers used an inquiry-based method in teaching division of fractions which are anchored on hands-on activities, conceptual understanding, using concrete objects as a learning aid, students making conclusions, giving justifications and promote active communications. The way they teach is heavily influenced by their beliefs in teaching. They believe that hands-on activities can promote understanding of the concept of division of fractions among the students. The teachers also believed that in making conclusion and giving justifications, students can develop their higher order thinking skills. Based on these findings, the researchers suggested that future studies should be done to investigate the effects of inquiry-based teaching on the students understanding of concept of the division of fractions.

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**Lesson Study Approach During Practicum In Developing Pre-Service Teachers' PCK: A Preliminary Study**

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**Keywords**

Lesson study, Pre-service teachers, PCK

Central to this study is the professional development of preservice teachers working together to apply the elements of Lesson Study approach during practicum and its' implications for teachers' training. This research is studied in a qualitative case study using the analysis of reflective journal documents and focus group discussions. We highlight the Model of Magnusson, Krajeik and Borko that emphasizes the components of PCK for teaching to interpret preservice teacher learning. Our results show that participants share experiences, thoughts and ideas related to teaching and learning, especially in contributing to the development of preservice teachers' PCK in teacher preparation programs. The professional practice development program during their practicum proved to play an

important role in developing the PCK of preservice teachers where participants meet new pedagogies, discuss them in the perspective of student learning, design lesson plans and prepare them for classroom use. This study also illuminates how the implementation of the Lesson Study approach during practicum may help preservice teachers integrate their knowledge and begin to develop a more complex view of teaching. Research shows also that preservice teachers who provide teaching collaboration which is a part of practicum requirements are very satisfied with the experience they gained. The paper concludes that systematic teaching collaboration by using the elements of Lesson Study approach during practicum provide preservice teachers with special opportunities in the early stages of their professional development. The experience can have a significant impact on their professional growth by broadening their outlook on teaching and learning.

471

### **The Effectiveness of Lesson Study Implementation in Teaching and Learning Mathematics in Senior High School in the State of Sabah**

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Kuan

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#### **Keywords**

2P2S Model,  
PDCA, SMART

This study examines the extent of the effectiveness of the management of Lesson Studies by high school Mathematics teachers in Beluran, Telupid, and Sandakan districts, Sabah. Lesson Study implemented with the 2P2S Model is based on the lesson study cycle and the Plan, Do, Check, Action (PDCA) cycle and Specific, Measurable, Achievable, Relevant, and Time-bound (SMART) the process to determine the effectiveness of lesson study from the aspects of content pedagogical knowledge, observation, simulation, and synergy toward planned behavior and continuous professional development of teachers. A total of 100 Mathematics teacher respondents were selected with stratified random sampling. The findings of the study show a high level of pedagogical knowledge of content and observation but a moderate level of simulation and synergy. Continuous professional development is also modest. The PLS-SEM-based analysis found that

pedagogical knowledge of content and synergy had a significant relationship with planned behavior. Insight and synergy do not have a significant relationship with teachers' continuous professional development. The findings of the study explain that the implementation of the lesson study still shows challenges in its implementation and further research needs to be conducted to find out more about its implementation in the state of Sabah.

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### **WAKID: A Lesson Study Journey in the Land Below the Wind**

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#### **Keywords**

WAKID, Lesson  
study, PLC,  
SISC+

Educational transformation through the implementation of the SISC+ throughout districts in Malaysia have brought about a wave of change in the way education has embraced PLC. It encourages the cultivates professional learning community practices among teachers and creates collaboration that is critical in improving the quality of teaching. This study aims to improve the effectiveness and efficiency of the implementation of the teaching and learning processes in the classroom through the collaborative practices between teachers. PLC Lesson Study methods are used during SISC+ coaching and mentoring sessions with teachers in the district of Tuaran, Sabah. This strategy helps teachers implement their teaching and learning activities more effectively, interestingly, and meaningfully. There are five phases in the PLC Lesson Study cycle that was implemented. The first phase was to identify and determine the goals of the PLC Lesson Study. The second phase was a group planning session of the teacher's lesson plan. The third phase was to observe the implementation of the planned lesson plan. In the fourth phase, the reflection session evaluates the teaching session that has been implemented. The fifth phase is to modify and improve the lesson planned where necessary and to carry it out. After the Lesson Study is complete, teachers proceed with sharing of best practices. In conclusion, the SISC+ coaching and mentoring session has helped the Head of the Panels and



Uncertainty,  
Complexity, and  
Ambiguous),  
CoA (Coaching  
on Air), C&M

mediums that are more interactive via digital platform applications while facing new norms. A preliminary survey found that most teachers face the issue of less effective teaching delivery during the pandemic season because they are unable to meet face-to-face with the students and are not skilled in using appropriate applications to carry out virtual teaching. CoA offers teachers a special "3 in 1" virtual guidance package that highlights three applications that are simple, free, and suitable as a digital teaching platform for teachers. The applications are YouTube, Google Meet, and AnyFlip which are interactive, free, and suitable for the new norm situation. The findings of the study show that CoA is an alternative approach to carry out virtual coaching and mentoring interaction sessions that has a high impact on the teachers because it successfully empowers teachers to deliver effective lessons when dealing with the VUCA world.

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### **Strengthen interdisciplinary approach by Lesson Study Cycle in STEM Education**

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#### **Keywords**

Interdisciplinary  
, Lesson study  
cycle, STEM,  
Education

Educational digitalization gives a huge impact on teachers' pedagogical approaches to creating new paradigm changes, especially in STEM education. STEM teachers lack in latest knowledge and integration of technology related to computer science in STEM classrooms. Lesson study turns out the best way for the biology teacher to digitalize biology lessons as a partnership of Biology with computer science to provide active learning among biology students. The sample consists of 6 STEM teachers and CS teachers will be selected using the purposive sampling methods. A case Study which is a qualitative research method will be conducted in a secondary school at Jempol and Jelebu District schools in Negeri Sembilan. Data will be collected through interviews, document analysis, and expert observations. Besides that, to investigate the effectiveness of the digitalized lesson plan on 24 biology students' achievement levels in Biology courses the difference between pre-test and post-test will be

analyzed. Teachers participate in six days of lesson study activity meanwhile students will undergo pre and post-test. The qualitative data will be analyzed using Atlas Ti and Wilcoxon Signed Rank Test for Paired sample, non-parametric test, and Cohen's Kappa test was used to analyze the data with SPSS 20.00 program at .05 significant levels. The result of this study can inform the achievement of the interdisciplinary approach through lesson study and identify active learning through students' achievement.

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### **Lesson Study : Influencing Students Engagement In Reka Bentuk Teknologi Lesson**

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#### **Keywords**

lesson study,  
PLC, TVET,  
students  
engagement

In SMK Nasiruddin Shah, there is 87.5% of lower forms students choosed to be in Reka Bentuk and Teknologi lesson compared to 12.5% who took Asas Sains Komputer lesson. This scenario shows how much the students influence their learning behaviour which impact their interest in learning. In this lesson study, we try to identify the issues of students who are not interested with the lesson and poor students engagement throughout the teaching and learning session. The lesson study started by conducting lesson designed which include 21st Century Skill encouraging communication, collaboration, critical thinking and creative skills. During the lesson, a teaching partner will do the observation and take note on the students behaviour in the class and their involvement. Right after the class, both teachers will analyse the note taken and observation. They then identify alternatives in methodology and pedagogy to improve the lesson, redesign and reimplement in the next lesson. These cycles have been practised a few times with improvement of multiple intelligences(MI), HOTS, Learning Style to cater the needs and ability. Consequently the observation shows that, there is positive impact to the students' behaviour and engagement thus promote collaborative effort among teachers. This complete lesson designed should be a model to solve the issues of students who are not

interested in the lesson.

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### **Peer Coaching : A Strategy To Develop Teacher Competency**

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#### **Keywords**

Peer Coaching,  
PLC, SK Nyiur  
Tujuh, Teacher  
Development,

SK Nyiur Tujuh is located in the middle of a paddy field has three streams comprising Prime, Inclusive Education and Pre-School. This report reflects on the experience of conducting peer coaching for improvement of teaching practices and student learning. Here, Peer coaching is practised with the guide from coaches from PPD Besut who are SISC+ to cater the pedagogical and content guide for teachers instructional development while SIPartner+ for the management and leadership development among SLT. Then, teachers among the team will expand, refine and build new skills from observed lesson, sharing ideas to develop better pedagogical skills, and solve the issues of suburban pupils that is low self-confidence, poor classroom engagement and low level of students centered lesson. Most of the peer coaching session was taken place by a group of teachers from same subjects who reflect on current practices by having a classroom observation, give feedbacks, analyse and conduct intervention. The model attempted was the collegial peer coaching and instructional coaching which included three main processes, pre-observation planning and discussion, two consecutive peer observation and post observation discussion. During the intervention, there come the skills building, sharing ideas and experience, teach one another then last but not least, solving the problem in the classroom. This process comprising the learning and development phase and portrays the importance of soft skills and collaboration. Eventually, the students also gain confidence and engaged maximally in the lesson. The teachers managed to deliver the lesson creatively and tend to create meaningful Teaching- Learning

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**Empowering the use of Lesson Study as a method to improve the writing of Daily Lesson Plans among teachers in Sabah**

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**Keywords**  
Research,  
Improving,  
Quality

This research aims at improving the quality of teaching and learning of teachers in producing effective lesson plan especially in Bahasa Melayu (Malay language) and Sejarah (History) subjects through the practices of Lesson Study. The study focuses on 88 schools for all 24 districts in Sabah, Malaysia. The samples of schools were selected and identified through the data with the highest number of form 5 students with the lowest achievement in their year-end examinations into 2021. The implementation of the program begin with coaching and mentoring by School Improvement Specialist Coach (SISC+) officers to the targeted schools for 1 month and followed by observation and evaluation by Sabah State Education Department officers. As the data collection tool, The practices of lesson study shows that teachers had a positive impression of improvement through the implementation of lesson Study. This program is expected to provide an inspiration to all teachers to improve the quality of teaching and learning through Lesson Study practices in their respective schools. Sabah State Education Department intends to compile and transform the best examples of lesson plan in digital form to be use by all teachers.

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**Information, learning and knowledge, pieced together as a practical approach in the context of Variation Theory.**

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**Keywords**  
Information,  
learning,  
Knowledge,  
Practicalm

In recent decades, societies have been built on farming, industry, and technological pursuits. Societies today are built upon information and knowledge; and the importance of learning in order to develop as a society is unquestionable. A school's task is to shape and prepare individuals to perform as a part of our society. Learning is the avenue by which one prepares to perform. Many studies have been published regarding the pedagogical and didactic aspects of learning.

Variation theory Different theories and methods have been embraced and have fluctuated in popularity over the decades including those from Vygotskij (social cultural), Skinner (behaviourism), Black & William (formative assessment), and Marton (phenomenography). Variation Theory, with its origins in phenomenography, studies variation and invariance in the object of learning, to visualise, focus, and make it possible to discern what to learn. This paper: 1. explores relationships between information, learning and knowledge, 2. outlines a philosophical and theoretical approach to connect information, learning and knowledge, pieced together as a practical approach in the context of Variation Theory, A method is developed to identify how to discern Critical Aspects during a lesson continuously and how communication between students and teachers can navigate those aspects. It turned out that the analysis made in this paper extended the Space of Learning. Also, a Question Space was shown to discern critical aspects during a lesson.

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### **Tapping into Pupil's Speaking Motivation in Classroom Discussions:A question of topic selection**

Nur Zarina Malaysian school pupils would hesitate to engage in classroom discussions that revolve around heavy and meaningful topics since informative discussions tend to be complicated and would lower their motivation to talk with each other. Yet, this is disrupted when the implementation of Common European Framework (CEFR) in Malaysia is applied on the four language skill papers, including speaking. As such, this study compares pupils' level of motivation in classroom discussions among Form 4 Malaysian pupils of intermediate level of English language. This comparison is based on two aspects – discussions on informative topics and poetry recitation techniques. This qualitative study was conducted at a rural school in Selangor using semi-structured interviews. The outcome from the semi-structured interviews was analyzed by using narrative analysis from each

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**Keywords:**  
Pupils's  
speaking,  
Motivation,  
Classroom  
discussion

interview's responses. The participants were selected as they are convenient sampling for the researchers. The outcome of this study would enable local educators to plan lessons that increase pupils' motivation towards speaking better using the English language, besides tapping into potential topics that would allow more effective discussions.

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### **Unique Of Vygotsky Theory - Enhancing Cognitive Development For Inclusive Education**

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#### **Keywords**

Vygotsky  
theory,  
Cognitive  
development,  
Inclusive  
education

The study aims to find out more about Vygotsky's work in terms of cognitive development among inclusive children. By relating existing experience to a new learning environment, a person's knowledge can be built. According to Vygotsky, the influence of an active social environment on an individual's cognitive development may be determined. Zone Proximal Development (ZPD) is a tool for assessing social culture, particularly knowledge, attitudes, thoughts, and value systems acquired through interaction. The role of Vygotsky's theory in improving children's learning is discussed in this paper. Therefore, the discussion emphasizes the background of Inclusive Education in Malaysia, the development of cognitive theory, the impact of Vygotsky's theory on learning, Vygotsky's views on cognitive theory, and the factors that are markers in learning. The findings of this review study allowed us to delve deeper into and examine the evolution of Vygotsky's theory from his perspective. It also shows how it relates to the learning of inclusive children. The importance and impact of cognitive theory in improving children's learning are influenced by environmental circumstances. Hence this study contributes to the scarce body of literature on cognitive development by applying Vygotsky's theory, a better understanding of the teaching and learning opportunities for students with disabilities.

### **Challenges And Strategies Of Classroom Management By Special Education Teachers For Students With Learning Problems**

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**Keywords**  
Classroom  
Management of  
Special  
Education  
Teacher,  
Challenge,  
Strategy

Classroom management is an element that aims to prepare and maintain the classroom as an effective environment for teaching and learning. Various challenges faced by special education teachers in applying classroom management such as behavioral factors of special education students. Therefore, this study was conducted to further explore challenges faced by special education teachers and their strategies in overcoming the challenges. The research design is a survey using a qualitative approach. It means that data was collected through interview session. The population is all special education teachers in secondary school in Kelantan while the sample is three special education teachers in Kelantan. Data that has been collected through online have been transcribed before manually further analysis. Data was analyzed thematically to determine the challenges faced by the teachers and strategies that have been done to overcome the challenges. The results of the study showed that despite of the challenges, special education teachers are able to manage their class effectively and efficiently by several strategies. The main challenge is students' behavior while the most frequent strategy used is by giving tokens. This study has successfully showed that special educations teachers must be creative and need to be patience dealing with special education students. This study has provided an overview on how to manage special education students in their classroom. It is recommended that for future studies, more sample must be used, besides involving more special education teachers, therefore finding can be generalized for the bigger population of special teachers' education.

### **Integrated STEM Lesson Plan: A Professional Learning Communities (PLC) Program Approach**

Kuit Vui Ket, Increasing emphasis on integrating STEM into

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**Keywords**

Professional  
learning  
communities,  
STEM  
Education,  
Integrating  
STEM, Lesson  
plan, Lesson  
Study

classrooms in order to prepare students to fulfil the needs of complex societies. Therefore, professional learning community (PLC) is necessary to achieve this objective. In this study, the researcher provided science and mathematics teachers (n = 38) with a STEM-focused PLC program. Then, teachers' artifacts were investigated to demonstrate the program's effects via participant implementations. The findings were consolidated using descriptive statistics, the STEM lesson plan analysis rubric used in this study, and content analysis. According to interventions and tools, the findings indicate that STEM-focused PLC enables participants to construct five distinct categories of integrated STEM lesson plans. Additionally, the principles for developing guidelines for professional learning communities designing for integrating STEM into the classroom were proposed, and various barriers to the implementation of integrated STEM lesson plans were indicated, including pedagogical challenges (e.g., teachers' limited STEM knowledge) and structural challenges (e.g., teachers' lack of preparation time and resources). This study contributes to the design and implementation of PLC programmes by providing in-service teacher educators with suggestions for incorporating STEM into teacher training programmes.

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**Using Gibbs' Reflective Cycle to explore pre-service teachers challenges in conducting online macro teaching**

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**Keywords**

Gibb's reflective  
cycle, Pre-  
service teachers,  
Online, Macro

The aim of this study is to explore pre-service teachers' challenges in conducting online micro teaching amid the pandemic of online remote learning. Micro teaching is a technique aiming to prepare pre-service teachers to the real classroom setting. Microteaching can also be defined as a teaching technique especially used in teachers' pre-service education to train them systematically by allowing them to experiment with main teacher behaviors. Amid the pandemic COVID-19, the pre-service teachers were required to conduct their

## Teaching

micro teaching online. As was the case with other teacher education practices, the forced online transition heavily compromised the vividness of microteaching -a technique inherently connected to face-to-face interaction. A descriptive qualitative study design was used. Participants were the 25 fourth year students enrolled in the Instructional Planning and Development course. Qualitative data were derived from the reflective writings of these participants about their micro teachings. The students wrote their reflection using Gibbs' reflective cycle guide. This study may provide insight into how moving micro teaching practices online could serve as a paradigm for how microteaching will be implemented in teacher education after the epidemic.

**ABSTRACTS:  
POSTERS**

### **How differentiation methods influence students cognitive abilities**

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#### **Keywords**

Differentiation,  
Cognitive,  
Intelligence

The relevance of the topic lies in the fact that teachers face various challenges in working with high ability students. When working with such students, the teacher has several questions: 1. How can I determine the level of students's ability? 2. How can I effectively organize work with high ability students? 3. What conclusions can I draw from the results obtained? In order to get answers to all the emerging questions, an action study was organized in the 11th grade of the Nazarbayev Intellectual School of Chemistry and Biology in Petropavlovsk. Considering differentiation as the main approach in the course of research while working with high ability learners, we identified the following areas of work:: 1.Diagnostics of the level of students' ability. To accomplish this task, we relied on Howard Gardner's multiple intelligence test. Analyzing the results of the multiple intelligence test, we found that students have different types of intelligence. 2.Planning and organization of students ' education. To cultivate students' intelligence, we relied on 5 Principles of differentiation. These include: acceleration, complexity, deepening, challenge, and creativity. 3.Correct choice of training methods and resources. To develop the principle of creativity in our practice, we used the method of Edward De Bono "6 hats for thinking". . 4.Quality control of material assimilation and conclusion. In the course of the study, it is important to conduct external control. This allows you to determine what work the teacher should do next, allowing you to see the transformation of the student's thoughts.

### **Discussion as a Method of Developing Students' Communication Skills**

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Over the years of our teaching experience, it's apparent that students who learn a second language have difficulty overcoming barriers at the initial stage of learning due to the lack of a venue to engage in

**Keywords**

Discussion,  
Communication,  
Students

discussion or any equivalent verbal discourse. This research was conducted to address the need to help students develop their communicative skills through discussion. Communicative activity is the research topic, and the subject of research is the didactic conditions for its development through discussion. The purpose of the research is to investigate one of the forms of communication – discussion, elevating it to the rank of methods of critical thinking techniques that contribute to the development of skills necessary for effective communication. For each stage of the research, tasks are outlined, and the solution was carried out based on general scientific methods: introspection and a synchronous descriptive method, represented by methods of observation, generalization, and classification. Based on the results of a series of lessons with the use of discussion as one of the methods of critical thinking techniques, such method contributed to the emergence of alternative opinions through problem-solving and constructive criticism. The participants actively exchanged views during the discussion, considered problems from different positions, and engaged in multilateral communication.

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**L-H Apps: Triggers Thematic Vocabulary Learning**

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**Keywords**

self-assisted  
learning, textbook  
instruction,  
blended-learning

This project aims to design self-assisted learning tools to improve students' vocabulary volume in English language learning. COVID-19 has become a catalyst for the language instructors in Kedah Engineering Matriculation College to search for innovative solutions in a relatively short period to cater for the needs of the students who yearn to learn and acquire knowledge out of their interest in developing their language ability. To make language learning become a habit that integrated into daily routine, 'Lexicon-Heap Application' (L-H Apps) is then introduced and designed to meet the learners' needs. There are two primary purposes, (1) to enhance and motivate students specifically in vocabulary learning which is not given emphasis as the

other four main skills (Listening, Reading, Speaking and Writing) through the medium of technology (2) to ease students to learn and master thematic vocabularies pertaining to the common themes tested in the examination or in their daily life. The attribute of L-H Apps is thematic vocabulary lists created using mobile apps to be more user-friendly among the students. Moreover, they are handy in operating mobile phone features. The observation report reveals that (1) students assessed their performance using the L-H Apps flexibly (2) convenient to have L-H Apps in English classes since there is uniformity in-class language learning tasks (3) stimulated the students to explore new, accurate, natural vocabularies, expressions, pronunciation, sentence structures useful for their language use (4) facilitates the learners with the situation where they can explore the vocabularies and practice the vocabularies on their own.

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**Lesson Study of Peer Tutoring Technique (PTT) for the Information Technology in a Global Society (ITGS) Subject at MARA College Banting**

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**Keywords**

International  
Baccalaureate  
Diploma  
Programme, Peer  
Tutoring  
Technique,  
Lesson study

This lesson study research explores the students' perception towards peers tutoring technique (PTT) for IBDP examination preparation in the international public school. The respondents for this exploratory case study are applied science of the International Baccalaureate Diploma Program (IBDP) students. In this research, the reflection of students toward PTT are transcribed and analyzed. The overall findings are summarised into themes and subthemes. Overall, PTT significantly improved the tutors and tutees performances in the ITGS IBDP examination. Therefore, it is suggested that these types of student-centred learning be practised in the other international and national school.

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### **Implementation of Lesson Study RBT Form 1: Use of Lego Blocks and Pupil Note Forms in the Construction of Basic Objects**

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Pendidikan  
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#### **Keywords**

Object Building,  
Lego blocks,  
Lesson Study

This study aims to improve students' skills in mastering basic object construction techniques applied in product design. The study involved 31 Form 1A students. Pupils were found to have difficulty in determining the techniques used for the construction of objects. Issues are identified through teacher observation, student feedback to teachers and also through analysis of student work. Therefore, a Lesson Study was implemented to address the issues faced by the students. Through the implementation of Lesson Study Cycle 1, the issues faced by the students could not be solved with the use of cardboard and Lego blocks in larger groups. Thus, through the Lesson Study cycle (Reflect) the use of Lego blocks is improved in Lesson Study cycle 2, while cardboard is not used in Cycle 2. The implementation of Cycle 2 through Do Research Lesson shows that the use of Lego blocks in group activities containing fewer students and the use of note forms in determining the techniques used successfully overcomes the problems faced by the students. The production of new objects using Lego blocks allows students to apply object construction techniques while with the use of note forms, students are found to be able to analyze and evaluate the object construction techniques involved. Pupils are also further able to provide justification for the technique selected based on the object that has been constructed. The proposal for future research is through the implementation of basic object building game techniques using the game "Jenga" to increase students' creativity in building objects.

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### **Research on a Lesson Study based on Children's Notebook Records**

Takehiro  
Wakimoto

We propose a lesson study in which teachers focus on and dialogue regarding children's long-term learning based on their notebook records and examine the lessons

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**Keywords**

Notebook,  
Double-loop  
learning, Teacher  
Education

they have planned. The purpose of this approach is that a different type of class approach is necessitated, such as inquiry-based learning. Teachers need a double-loop learning approach that involves not only acquiring classroom techniques but also transforming beliefs and theories. To realize this learning among teachers, attention to children's learning has been emphasized. In the past, "lesson study" focused on children's learning in a single class. However, to realize deeper teacher learning, it is necessary to focus on children's learning over a long period of time. Therefore, we proposed a lesson study that focuses on children's long-term learning based on their notebook records. We conducted a lesson study of this style with one school for two years, interviewed its teachers, and categorized their interview data. During the first year, interview statements related to "transformation of one's perspective on children's learning," "transformation of the classes," and "transformation of children." Moreover, during the second year, "transformation of one's core beliefs regarding classes" and "awareness of the advantages of organization" were generated. These results suggest that lesson study using notebooks may be effective for teachers' double-loop learning.

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**Extending beyond intra-school professional development: Collaboration for pedagogical strategies refinement through digital professional learning communities**

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**Keywords**

Professional  
learning

Teachers' professional development is vastly heralded as the fundamental key to improve overall student outcomes. Professional learning communities are the scenes in which teachers are afforded the opportunities to work collaboratively. Within the recurring circles of inquiries in the practice of professional learning communities (PLC), teachers are able to strategise and innovate beyond their existing pedagogical capacity by constantly analysing data and then setting goals in alignment to the school's vision of learning. In this context, the significance of professional learning

communities,  
Collaborative  
teachers,  
Digitalisation of  
PLC

communities (PLC) is explored in collaboration with teachers from neighbouring schools as well as teachers from schools from out of state. The digitalisation of PLC across various schools is aimed at generating new insights and visions for teaching and learning which may be implemented to refine content-focused learning as well as pedagogy-focused learning. The digital professional learning communities are conducted via video-conferencing and live-streaming sessions. The appointed teachers act as facilitators who model the use of digital educational tools which enable diverse teachers to corroborate, engage in simulation of lessons and subsequently analyse which aspects of the teaching can be improved upon. Evidently, teachers' pedagogical knowledge and practices as well as digital skills improved abundantly. In extension to this, the virtual and digital approach to professional learning communities among teachers across different schools is beneficial whereby teachers are able to unobtrusively observe and analyse the strategies of teaching by other teachers. Subsequently, they also learned how different strategies are used in terms of integrating or differentiating the curriculum.

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### **Innovations In Lesson Study: Teacher Collaboration And Student Engagement In History Lesson**

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Malaysia

#### **Keywords**

Teaching aid,  
Remedial student,  
HOTS question

A teaching material in the form of Effective Modules were designed with the consideration of the students' needs and abilities so that student will be more skillful in answering questions. The construction of the modules in this study is to check the effectiveness of the modules as a teaching aid for teachers in the classroom. The objective of this research is to enhance the skill of answering structure type questions in the History subject among 5 Zuhul and 5 Bumi students using the Effective Module. In addition, to encourage them to answer HOTS questions using the Effective Module besides, enhancing the use of Effective Module in teaching and learning as a teaching aid. Data collection

methods used in the research were observation, questionnaires and data analysis. A quasi-experimental study which involved 59 form five students from 5 Zuhal and 5 Bumi of SMK Seri Hartamas, Kuala Lumpur were carried out. The samples were randomly selected from groups of students with similar achievement levels, who were grouped into experimental and control groups. The pre-test and post-test instruments were used to evaluate the effectiveness of the Effective Module. The findings of the study showed improvement in answering HOTS questions among 5 Zuhal and 5 Bumi students. The Effective Module is expected to improve significantly students' skills in answering History HOTS (KBAT) questions in paper 2 section A. Consequently, students are expected to be more confident and enthusiastic to use the Effective Module as reference materials during teaching and learning sessions.

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### **Enhancing Chinese Picture Composition Writing Skills through Differentiated Instructions and Thinking Strategies**

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Singapore

**Keywords**  
Differentiated  
Instructions,  
Thinking  
Strategies,  
Writing

Writing is the most challenging language acquisition as the art of writing is to make meaning and give coherence to the content. Our research focus came from the challenges that our teachers faced when teaching the writing skills to our middle primary pupils who lacked the skills to develop the contents for their stories. Their contents were usually mediocre or off the point. Due to the diverse learner profile and their different readiness in writing, the aim of our lesson study was to examine how differentiated instructions and thinking strategies could enhance the writing skills of our pupils in generating ideas and developing the content. In our lesson, the pupils were grouped into two groups, the high readiness group and middle/low readiness group. The teacher differentiated the content, process and product to meet the different needs of the pupils. To provide the necessary scaffolding, pupils were tasked to

write the topic sentence based on the main event depicted in each picture for the four-pictures composition. The use of Thinking Map (Brace Map) was introduced to generate ideas and the Thinking Routine of See-Think-Wonder helped to develop and expand their ideas. The study revealed that with differentiated instructions, it could better meet the needs of the various learners to achieve the same learning outcome. The thinking strategies helped to structure pupils' thinking, making their thought processes visible, and develop their writing content and improve their writing skills.

### **Implementation of the Year 5 Design and Technology Lesson Study: Use of Basic Objects and Records of the Development of Ideas in the Design Sketch of a Sewing Article**

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Pejabat  
Pendidikan  
Daerah Selangau,  
Malaysia

#### **Keywords**

Design and  
technology,  
Article design  
sketch, Lesson  
Study, Basic  
Object, Idea  
Development  
Record

The subject of Design and Technology (RBT) is a technical subject that involves projects and presentations. For the title of Sewing Articles, students need to make an informative sketch of the design of the article before producing a creative and neat article. This study aims to improve the skills of students sketching the design of sewing articles. This study involved 22 Year 5 students in a rural school in Selangau, Sarawak. Pupils were found to have problems in making design sketches of sewing articles, even a handful of passive pupils were unable to develop new ideas and still remained to the original sketches. These issues and problems are identified through teacher observation, student feedback to teachers and through student work. Therefore, a Lesson Study was implemented to address the issues faced by the students. Through the implementation of Lesson Study cycle 1, the issues faced by the students could not be resolved by letting the students sketch the project idea on paper based on observations around the school. Therefore, during the Lesson Study (Reflex) cycle the use of basic objects as student focus as well as Idea Development Record is introduced in Cycle 2. The implementation of Cycle 2 through Do Research Lesson shows that the use of basic objects and idea development record successfully overcome the problems faced by students. Pupils were found to be able to develop ideas from a basic object to a new object and even able to make analysis, evaluate sketches and make improvements to sketches using the idea development record. Through the use of basic objects as well as a record of the development of ideas in project sketches can increase the effectiveness of digging out and developing new ideas of students. A suggestion for future research is to be able to use the method of combining other subtopics with sewing topics to increase students' creativity and innovation in making sewing article design sketches.

**Lesson Development to Promote Awareness of  
Healthy Living in Second Grade Elementary School  
Students: Engaging a Specialist in Sleep and  
Nutrition**

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HORIUCHI

Yokohama  
National  
University, Japan

**Keywords**

Collaborative  
Lesson  
Development,  
Elementary  
School, Learning  
For Healthy  
Lifestyle

It is important for the development of teachers' competence that they conceive lessons and examine the observations as a research analysis. In this study, a university faculty member, specializing in home economics education, served as an advisor to an elementary school teacher, developing collaborative lessons. A lesson on healthy living was proposed and implemented as a special activity for the second graders of an elementary school. As guests, the classroom teacher invited a school nurse, a university professor specializing in sleep and nutrition, and a nutrition teacher who prepared school lunch menus for the class. They discussed with children the requirements for a healthy life. Before listening to the guests, the children did not consider that their current lifestyle was particularly problematic based on their own experiences. They did not consider it to be a major problem, even for children who clearly slept too little or were picky eaters. However, listening to the experts' discussion broadened their perspectives, stimulated their thinking, and enhanced their awareness. They realized that even if they do not currently suffer from any particular illness or physical condition, maintaining a healthy lifestyle with a well-balanced meal, adequate sleep, and exercise as a habit will help them maintain their health in the future. The teachers who conducted the classes worked with internal school experts and external experts, through which they were successful in imparting new knowledge to the children. The experts had a significant effect on education as social relational capital.

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**Anchoring on the approach of learning study as a collaborative platform for teachers' professional development for improving teaching and learning of Mathematics**

Claire Leong Poh Lay

Kong Hwa School, MOE, Singapore

**Keywords**

Professional Development, Learning study, Mathematics, Variation theory

Teachers need a sound theory to help them make wise decisions about teaching. Learning study is a good collaborative platform in school setting and variation theory is a guiding principle. It provides a theoretical grounding to understand some of the necessary conditions of learning, so that teachers can make wise pedagogical decisions that guide them about their teaching (Lo & Marton, 2011). The mathematics department of a Primary School in Singapore embarked on their professional development anchoring on the approach of learning study. The adoption and implementation were done in 4-phases over a span of 3 years due to Covid disruption. The learning from the first round of professional development process provides insight for the department to further improve on the teachers' professional development. This poster presentation explains how anchoring on learning studying embedding variation theory can help a community of teachers grow and flourish in their teaching and learning of Mathematics. It will also share on the conditions that are critical to the success of the professional development in the school.

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**How Lesson Study Impacted the Practices of Untrained Teachers in a Special Education School**

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**Keywords**

Lesson Study, Initial Teacher

This presentation illustrates how participating in lesson study has impacted the practice of untrained teachers in a special education school in Singapore. These teachers, who wanted to research on formative assessment to inform their practice, participated in two cycles of lesson study within the year, prior to attending formal teacher training. Adapting from Sadler's (1989) framework of formative assessment, two guiding principles were selected, focusing on post-assessment feedback, involving students in assessment and using

Training, Special  
Education

the data as evidence to guide scaffolding decisions. Although the project aimed to explore the effects of post-assessment feedback on students' learning of inferring skills in reading comprehension, qualitative results showed that these teachers not only gained insight into lesson planning, but also in embedding post-assessment feedback to students throughout the lesson. This enhanced teachers' awareness of the significance of feedback to make learning visible and help students progress in reading comprehension. Through lesson study, the professional development opportunities through self-directed reading and professional conversations became an integral part of on-the-job training for these untrained teachers. The results of this research show that the impact of participating in lesson study on the teachers' lesson planning, design and execution is both reflective and reflexive. This is marked by evidence of deep reflection during the group's post-lesson discussions of the lesson itself, and the individual's objective examination of one's practice. The results are encouraging to consider the necessity of lesson study as a form of school-based professional development for initial teachers.

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### **The Effectiveness of Introducing Coordination Training in Junior High School Physical Education Classes: Focusing on the Enjoyment of Exercise and Physical Competence**

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Hiroshima  
University, Japan

**Keywords**  
Coordination  
Training,  
Enjoyment of  
Exercise,  
Physical  
Competence

In this study, I conducted class action-training-research on the use of coordination training in physical education classes at Japanese junior high schools. Coordination training was conducted with 177 boy and girl students for three hours in the area of physical fitness. This study aimed to verify the effects of the training on students' enjoyment of exercise and sense of physical competence. Questionnaires were introduced at the beginning of the first period and the end of the third period to compare scores on physical competence (perceived physical competence, feeling of control, peer and teacher acceptance) and diagnostic and integrative

class evaluations (affective goals) were conducted before and after the unit, overall and by gender. The results showed that the overall scores were higher for perceived physical competence ( $p < .001$ ), overall physical competence ( $p < .001$ ), and peer and teacher acceptance ( $p < .05$ ). In the girls' class, the scores were higher for perceived physical competence ( $p < .01$ ), peer and teacher acceptance ( $p < .05$ ), and overall physical competence ( $p < .05$ ). In the boys' class, the scores were higher for perceived physical competence ( $p < .01$ ), feeling of control ( $p < .01$ ), overall physical competence ( $p < .01$ ), and affective goals ( $p < .01$ ). In all cases, the scores were higher after the unit. This suggests that the introduction of coordination training in physical education classes at junior high schools is an effective means of making students experience the enjoyment of exercise and helping them develop a physical competence.

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### **The Study of the Effective Implementation of PLC Foundation in Plearnpattana Secondary School**

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Mayukhachot

Plearnpattana  
School, Thailand

#### **Keywords**

Professional  
Learning  
Community,  
Professional  
Development,  
Safe Zone

The PLC in Plearnpattana Secondary School places importance on emotions of the members in the community as well as a safe zone to allow everyone to participate in the exchange of learning and self-improvement as teachers who have a variety of tools and methods in lesson planning and as human beings who foster empathy for others and share the happiness with one another. PLC helps build a foundation of good relationships within the community which contributes to both individual and group learnings under formal and informal learning as well as lead to the developments of teamwork and student. However, it's required a continuity in order to create a sustainable professional learning community. PLC is a space for a continuous exchange of knowledge and experiences under a variety of tools and processes to connect members' ideas together. The members exchange their ideas to find suitable solutions using attentive listening, creative reflection, application of shared ideas as well as

monitoring and evaluation which results in the creation of a community of like-minded people who get together to improve the learning for themselves and the team. With the success of PLC, the members are able to have a better understanding and care for students and to design lessons more proficiently while maintaining the identities of the individual and the learning community at the same time.

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### **The Mathematical Discourse in Instruction Framework as Tool in Analyzing the Research Lesson**

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Science and  
Mathematics  
Education  
Development (UP  
NISMED)

#### **Keywords**

Research Lesson,  
Mathematical  
Discourse,  
Function

Learning mathematics is about becoming knowledgeable participant in the discourse of mathematics (Sfard, 2012) and so teaching it is about creating opportunities for learners to engage in the discourse of the subject. How? In the lesson study we report here, we introduced teachers to a research-based analytic framework to serve as common language and lens between them and us academics in discussing the research lesson. The framework is called the mathematical discourse in instruction (MDI) framework (Adler & Ronda, 2015). The teachers in this case study attended a 3-day seminar-workshop on the MDI framework where they experienced how to analyze their own lesson. Since most of the teachers have lesson study experiences, we asked them to do a lesson study on a topic of their choice and they chose the topic on function. The teachers designed the research lesson mindful of the importance of engaging learners in quality mathematical discourse. In this poster, we will show how the MDI framework, our version of it in diagram and tabular form, can be used to present visually the mathematics made available to learn in the lesson implementation. We offer this here as aid for the teachers in reflecting about what they make available for learners to learn in their lessons and for the external facilitators for organizing their analysis of the lesson especially in terms of the content and its teaching as we did in our lesson study.

### **Minecraft To Develop Computational Thinking Skill Among Rural Pupils In Selangau, Sarawak**

Tessie Anak  
Rijem, Malaysia

#### **Keywords**

Minecraft,  
Computational  
Thinking,  
Problem Solving,  
STEM

The unprecedented growth of jobs and careers in STEM in this 21st Century made computational skill is one of the skills needed by the students to master. Computational skill is thinking process in approaching problem and creating solution. It helps to solve problem by choosing the right tools and methods. Minecraft is a very popular block-based game that allows the players to build and solve problem or mission in virtual world. In Education Edition, it allows the pupils to work collaboratively on a project, regardless of where they are. Thus, it is an excellent tool to develop computational skills among the pupils. The aim of this study is to show the effectiveness of Minecraft to develop computational thinking skills among 30 pupils of SK Sungai Buloh, Selangau. The data is gathered by using observation checklist and survey questions. The number of pupils who can present their solution model increase from 3 pupils to 14 pupils after 3 sessions of Minecraft workshop. The pupils also shown positive response and progress in their solving problem skill.

### **The Use of Economical Token Techniques in Modifying Hyperactive Behaviour Problems for Autism Students in Secondary School**

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SMK Warisan  
Puteri, Malaysia

#### **Keywords**

Economic token  
technique,  
Modification of  
behavioural  
problems,  
Autism,

This study aims to see the effectiveness of the use of reinforcement techniques for autism students in secondary school. This refers by giving praises and economic tokens in the modification of the hyperactive behaviour problems of autism students. This study was conducted on two autism students who had hyperactive behaviour problems during a learning and facilitation session conducted in the classroom. Autism is a development disorder that impacts a person's ability to communicate and interact with those around them. In overcoming the problems of hyperactive behaviour by the autism students, reinforcement for positive behaviours through the economic token techniques is an

## Hyperactivity

appropriate method. This is a qualitative study that examines the increase in hyperactive behavioural problems of autistic students in secondary schools. Surveys were made using a four-week observation method involving one week before, two weeks during the and one week after the intervention was conducted. Chart board were used to approach through the method by using tokens to reduce the problem of hyperactive behaviour. Both students have shown a positive improvement after the use of the economic token technique compared to before. The results showed a positive impact and the change on the frequency of negative behaviours to positive behaviour. This shows the autism students that could not focus for more than 10 minutes and the frequency of interrupting other students had been lesser. Using reinforcement method clearly proves in reducing the negative behaviour problem of autism students indirectly and helped teachers in teaching and learning activities implemented.

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### **Superhero Kids In Action At Babagon Toki Primary School Traditional Bazaar**

Elsie Sharon  
Giluk, Lily  
Sintum, Christina  
Michael, Noel  
James, Lovenia  
Herman, Ahmad  
Zarah Idin,  
Angela Tundim,  
Al fadzli Amil  
Bustan

Malaysia

#### **Keywords**

Superhero Kids,  
Primary School,  
PLC, Kota

Superhero Kids In Action At Babagon Toki Primary School Traditional Bazaar (Tamu Adiwira Babagon Toki) Superhero Kids In Action At Babagon Toki Primary School, Traditional Bazaar is an integrated approach to facilitate students' learning at a low enrolment school located in a remote area within Kota Kinabalu District. This project-based learning strategy uses backward design in their lesson plan and reports write-up. Before this intervention, teachers practice conventional approaches where teachers work in silos to prepare the lesson plan and teach only in a confined classroom setting. Being in a village environment the students are very shy and have limited socializing skills. These conventional teaching practices unfortunately do not address these issues. By using PLC: Lesson Study protocols, four subject teachers (Math, Science, English or Bahasa Melayu and Arts) collaborated to prepare the

Kinabalu

lesson planning. Each subject teacher from year 4 to year 6 will choose a topic to be incorporated into the project. As coaches SISC+ play the role of facilitators during the Lesson Planning and as Knowledgeable others in PLC: LS Open Class Sessions. The culmination of this approach is the SK Babagon Toki Bazaar where students will showcase all the acquired skills as vendors and buyers. During the bazaar pupils will be assessed on the way they communicate, calculations of profit and loss, presentation of food, and other 21st century learning skills. These clearly support the sub-themes Creating knowledge in practice: A sustaining effort at creating a life-long learning experience

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### **Peer-Coaching : A Strategy To Develop Teacher Competency**

Nurul Syafinaz  
Ishak

Malaysia

#### **Keywords**

Peer-coaching,  
Competency

Peer Coaching is one of collaborative tools introduced as a strategy to share and incorporate in Professional Learning Community (PLC). It comprises a specific collaboration between two or more teachers who cooperate to analyse initial practice, design, develop new skills, share ideas, initiate classroom research or solve problem at works ( Robbins,1991).

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### **2P2S Model: Trio ICe Blended**

Dr. Nancy Ng  
Yut Kuan,  
Malaysia

#### **Keywords**

2P2S Model,  
PDCA, SMART,  
Trio ICe Blended

The 2P2S lesson study management model is a model that summarizes the lesson study cycle, the PDCA as well as using the SMART quality control were Trio ICe (Innovation Creating Lesson Study) Blended on the aspect of content pedagogical knowledge, an observation that sees perception and reality persistently, simulation, and synergy (2P2S model) in the management of study studies at school.

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### **The Ring For Solungkoi (Interactive Game Application In Mobile Phone)**

Dr. Nancy Ng  
Yut Kuan,  
Malaysia

**Keywords**  
STEM,  
electrochemical,  
electrolysis,  
rooms, missions

The Ring For Solungkoi is an innovative mobile STEM game application that consists of Science, Technology, Engineering, and Mathematics that was created for home teaching and learning in the new norm for the subject of Chemistry in STEM learning that can help 5th-grade students at SMK Pekan Telipok to master the sub-topic of metal plating by using methods of electrolysis in the electrochemical chapter.

482

### **Exploring Teacher Educators' Understanding of Internationalising Teacher Education**

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Noor Asma Iffah  
Zakaria

Malaysia

**Keywords**  
Teachers'  
educator,  
Internationalising,  
Teacher education

Internationalisation and global education are terms that carry broad meaning and relatively new concepts particularly in the context of teacher education in Malaysia. Recently, a workshop was conducted with 20 teacher educators to develop an awareness and understanding of the concepts of internationalisation and global education in teacher education. The workshop which consists of two, two-hour sessions focused on addressing the following points: What do we mean by internationalisation? What are the key factors that impact this phenomenon? What initiatives and policies are developed to enhance the internationalisation of teacher education? Adopting a three-stage lesson study approach consisting of i) plan, ii) observe and iii) reflect and plan (Teacher Development Trust, 2021), this study was conducted to investigate teacher educators' conceptions of internationalisation and global education in teacher education. A qualitative method was employed to collect and analyse data obtained from interviews and participants' reflections. The findings indicated that participants' understanding and awareness about internationalisation and global education enhanced as they were able to describe the key features of these concepts clearly. But more importantly, the lesson study

approach supported the development of the workshop to be more effective and meaningful.

492

**Empowering the use of Lesson Study as a method to improve the writing of Daily Lesson Plans among teachers in Sabah**

Harris Bali,  
Malaysia

**Keywords**

Lesson study,  
Daily lesson plan,  
Teachers, Sabah

This research aims at improving the quality of teaching and learning of teachers in producing effective lesson plan especially in Bahasa Melayu (Malay language) and Sejarah (History) subjects through the practices of Lesson Study. The study focuses on 88 schools for all 24 districts in Sabah, Malaysia. The samples of schools were selected and identified through the data with the highest number of form 5 students with the lowest achievement in their year-end examinations into 2021. The implementation of the program begin with coaching and mentoring by School Improvement Specialist Coach (SISC+) officers to the targeted schools for 1 month and followed by observation and evaluation by Sabah State Education Department officers. As the data collection tool, The practices of lesson study shows that teachers had a positive impression of improvement through the implementation of lesson Study. This program is expected to provide an inspiration to all teachers to improve the quality of teaching and learning through Lesson Study practices in their respective schools. Sabah State Education Department intends to compile and transform the best examples of lesson plan in digital form to be use by all teachers.

498

**Positive Impact of Lesson study on teacher behavior and adaptation to changes in teacher teaching approaches**

Norah Marcus,  
Malaysia

**Keywords**

Positive, Lesson

This presentation aims to share the best practices of Lesson Study implementation at SM Lok Yuk, Kota Kinabalu, Sabah, Malaysia which had been implemented from the end of 2017 until 2019. The methodology that had been employed are observation

study, Teacher,  
Behavior,  
Teaching  
approaches

on behavior change and interviews. The results of observations and interviews found that the teachers gave a positive response to the implementation of lesson study and agreed that the lesson study had been able to help the teachers adapt to change in Malaysian education. Changes to the teacher's approach in teaching and learning improved the effectiveness of teaching and learning in the classroom as well as enhance general students' achievement in the 2019 Malaysian national examination (SPM). The implementation of lesson study in schools should continue at least once a year to improve teaching and learning practices, help teachers adaptation to the latest learning approaches and solve teaching and learning issues collectively.

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**Perception of lesson study practices in teaching students with hearing disabilities from vocational teacher's perspectives**

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Kamaruzaman,  
Siti Azwanee,  
Marlissa Omar,  
Mohamad Sattar  
Rasul,  
Malaysia

**Keywords**

Challenges,  
Lesson Study,  
Teaching and  
Learning

The Lesson Study (LS) approach is known for its effectiveness and it's proven in improving subject achievement and mastery based on previous study. Even though this LS approach has been introduced for sometimes, there's still a lack of understanding and implementation at both school and higher education levels. In relation to that, this study was conducted to identify the challenges of implementing LS in teaching and learning in the respective schools or institutions. During 'Bimbingan Lesson Study WALIS 2022' conducted around May until July 2022, participants were given exposure to the concept and approach of LS. At the end of the session, an open-ended online questionnaire was distributed to a total of 40 respondents who were also workshop participants who had never conducted LS. The data obtained was analyzed qualitatively to derive the themes to achieve the objectives of the study. Four themes were obtained which are; i) time constraints, ii) lack of understanding about LS, iii) teachers skills and iv) students interest. The main challenge is the time constraints where the syllabus and tight timetable make it difficult for teachers

to implement the LS approach in their teaching and learning process. The results of this study contribute to important input to ensure that the implementation of LS can be improved by overcoming the main challenges faced by teachers.

502

### **Developing Sustainable Professional Learning Communities: The story telling techniques to improve the understanding of mental health**

Nurwina Akmal  
Anuar, Malaysia

#### **Keywords**

Sustainable,  
Professional  
learning  
communities,  
Story telling,  
Mental health

Many have struggle with emotional disturbance at times when we are faced with uncertainty. It is normal and understandable that students and teachers are also experiencing fear. Many mental health conditions can be effectively treated at relatively low cost, yet the gap between people needing care and those with access to care remains substantial. Increased knowledge in delivering the topic is required at school level to establish understanding and reduce stigma. More than hundred students were gathered for a mental health programme that has been designed based on the high impact educational practices (HIEPs). Elements involved; sharing own experience by professional, what should do and what should not do, history and scientific explanation. This strategy has promoted knowledge better of mental health. The students mentioned that it was a great sharing and the most important part is the real experience shared. The feedback was astonishing. Questions after the programme was innumerable indicating that they have understood and the objective to create the awareness is achieved. Based on the findings, there are several notable impacts after the programme: 1) some of them have requested for one-to-one coaching and they are all attending personally through available medium such as WhatsApp, 2) after 3 months, follow up report recorded that the advice and technique thought is applied in their life, 3) they request another session indicating that the sharing speech have had impressed them and left them memorable important point for the individual benefit of life. In summary, story-telling strategy should be implemented in lesson

for an impactful learning.

**503**

**Lesson study practices among undergraduate students using Augmented Reality Apps in Engineering Drawing Course**

Marlissa Omar,  
Fathiyah Mohd  
Kamaruzaman,  
Mohamad Sattar  
Rasul,  
Malaysia

Learning engineering drawing courses requires students to use their visualization skills to master the course. Students tend to use the trial and error method to solve engineering drawing problems due to their lack of visualization skills, which causes them to have difficulties during the final exam. Thus, the researcher used augmented reality technology to help the students train their visualization skills due to its potential to help enhance their visualization skills and performance in engineering drawing. Based on the findings, students show high motivation when learning using augmented reality applications and increase their interest in learning. This study emphasizes that using the right technology can help to train students' skills and improve their learning performance.

**Keywords**

Lesson study,  
Undergraduate,  
Augmented  
reality,  
Engineering  
Drawing

**504**

**Lesson Studies in Post Pandemic: Leveraging Lessons for Effective Practices in Malaysia.**

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Jamaludin,  
Norlidah Alias,  
Mohd Mokhzani  
Ibrahim,  
Malaysia

The COVID-19 pandemic has necessitated an abrupt replacement of traditional face-to-face learning with online learning. Therefore, lesson study implementation must be modified to accommodate this transition. In the post-pandemic era, however, there is much to learn and improve from the previous experiences. Hence, this study is aimed at identifying best practices and ongoing challenges to effectively implement lesson study in post-pandemic era in Malaysia. A critical analysis of previous research was conducted to further emphasize both the best practices and ongoing challenges that require immediate attention. Generally, it was found that: a. flexibility and adaptability; b. investment in resources; c. continuous collaboration in teaching delivery and lesson study practices should be

**Keywords**

Lesson studies,  
Post pandemic,  
Practices

emphasized. However, a number of challenges such as: a. poor understanding; b. struggle in balancing between responsibility and participation; and c. non-systematic practices of lesson studies hinder effective implementation in Malaysian school settings. This study provides policymakers, stakeholders, and administrators with useful information for planning an efficient lesson study implementation to meet the changing needs in the post-pandemic education.

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### **Emerging higher-order thinking skills (HOTS) through reflecting lesson plan in the lesson study guidance programs**

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Mohamad Arsad,  
Zanaton Hj Iksan,  
Lilia Halim,  
Kamisah Osman,  
Malaysia

#### **Keywords**

Higher order thinking skills (HOTS), lesson plan, lesson study, questioning

Higher order thinking skills (HOTS) have always been highlighted in science curriculums, yet there is still lack of advancement in students' learning of these skills. Thus, teachers must assist students in developing these skills by planning and preparing lesson plans that describe the holistic development of students' HOTS. Consequently, the purpose of this study is to explore the emergence of HOTS through the reflection of a lesson plan during the lesson study guidance programs. This program was organised by the Faculty of Education, UKM, and three experts were invited to guide teachers in effectively preparing lesson plans using three steps in lesson study, namely (i) plan, (iii) do (implement), and (iv) see. Reflection by the expertise and teachers involved in the program took place during all the processes in lesson study, by carefully analysing qualitatively the lesson plan and based on observation during the open class. According to the lesson plan reflection discussed in the lesson study, the emergence of HOTS can be strategically infused into each activity created in the lesson plan, especially related to the advanced science concept, and always predicted various questions and responses that will be given by the students, so the teachers can plan on how to facilitate the students to actively think about the science concept being learnt.

### **Deconstructing Lesson Plan: Intergrating Sociolinguistic Knowledge in English lesson**

Nur Ainil Sulaiman, Hanita Hanim Ismail, Malaysia

#### **Keywords**

Sociolinguistics, Lesson plan, English, Trainee teachers

Sociolinguistics is the study of how social context influences the development of language. Sociolinguistic knowledge helps teachers and learners to understand and embrace the diversity in the way people learn, perceive, and use language in a variety of contexts. This study explored how trainee teachers integrate sociolinguistic knowledge in English lessons by analysing the teaching and learning strategies they employed in the lesson plan. Data from eight lesson plans for Form Four English lesson designed by 8 groups of trainee teachers were analysed based on activities proposed in pre-lesson and lesson development stages. Activities that involve collaborative learning such as pair work and group work were most preferred as it allows students to recognise, understand and respect cultural differences and different perspectives. Inquiry-based learning activities such as questioning, discussion and role-play were proposed to generate students' interest and curiosity about the subject matter. The integration of knowledge on sociolinguistics in language lesson would make the lesson more humanistic in nature rather than simply a complex set of grammatical formulas. As teachers understand the sociolinguistic concept, they will be able to recognize and embrace the learners' differences and implement better strategies that match learners' needs and preferences so that the students will not feel left behind and discriminated. Keywords: lesson plans, sociolinguistic knowledge, learning strategies.

### **Impact of Post-Covid Teaching Strategies and Practices on Student Learning Motivation from Teachers' Perception**

Nur Atiqah Jalaludin, Muhamad Izzat Ruslim, Mohd

The spread of the Covid-19 epidemic has changed the teaching and learning pattern of teachers through online learning. Not all teachers are ready and have sufficient knowledge and skills to implement the teaching and

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Mohamad Sattar  
Rasul and Nur  
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**Keywords**

Teaching  
Strategies and  
Practices, Post-  
covid, Student  
Learning  
Motivation

learning process online. Likewise, parents and students do not all have smart devices and internet access at home or sufficient to enable the online learning process to take place continuously. This study aims to examine teachers' perceptions and teaching practices on students' learning motivation in the post-covid. Twenty primary school teachers have been through a period of service or teaching experience of at least five years. The qualitative research design uses purposive sampling involving 20 teachers with more than five years of teaching experience were chosen to answer the questionnaire referring to the objective of the study. The finding shows that the teachers are sensitive to the situation that affects Teaching Strategies and Practices. Teachers are aware that online learning during Movement Control Order negatively impacts students' learning development. The study shows that teachers are aware of the changes and are ready to improve Teaching Strategies and Practices according to current needs.

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**Recurring Lesson Study Cycles: Engaging  
Students' Participation in Grammar Teaching**

Nor Azwahanum  
Nor Shaid,  
Malaysia

**Keywords**

Lesson study,  
Grammar,  
English,  
Secondary school

This study explored how a group of trainee teachers were recently involved in a development of lesson study cycle by facilitating a discussion with an experienced teacher. Two sessions were conducted, allowing a group of trainee teachers to plan their lessons to increase student participation in grammar teaching. The data gathered from six lesson plans for secondary school Malay language lesson specifically in grammar teaching by analysing their teaching and learning strategies employed. All six lesson plans proposed by trainee teachers were explored and were co-creating to investigate the strategies and activities integrated in their plans in order to get an effective learning. The findings have shown that trainee teachers tend to choose student-centred learning strategies that consists of the interactive activities such as short quizzes, use of ICT

tools, and problem-based learning. The integration of collaborative learning among teachers and students allows the opportunity to fully engage in the learning process. Therefore, the study highlighted the planning, implementation, and outcomes of a lesson study cycle in preparation for effective lesson studies. In addition, this study emphasizes the need for educators to have differentiated, ongoing chances to learn about, show, and practise lesson study cycles, which is pertinent to the lesson and learning studies and teacher professional development strands.

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### **The Effect of TopSpinPro Intervention Towards Groundstroke Acquisition Among Adult Beginner Tennis player**

Wan Ahmad  
Munsif Wan Pa,  
Nur Shakila  
Mazalan,  
Malaysia

**Keywords**  
TopSpinPro,  
Tennis,  
Performance

Due to the need for hand-eye coordination, flexibility, agility, strength, and speed, many consider tennis to be one of the most difficult sports to master. Players must master a variety of shots of the game, which is considered the most difficult aspect. Numerous methods are utilized by players to acquire new abilities. This study aimed to determine the effect of TopSpinPro intervention on groundstroke performance in tennis. Thirty-six adult beginner players were selected using the convenience sampling method in this study and divided into the experimental group (N = 18) and the control group (N = 18). The intervention group was trained by a certified coach with TopSpinPro tools, while the control group was trained by a certified coach with a conventional training style. Sessions were scheduled for 1 hour three days a week with a total of ten weeks of training sessions. Tennis Skill Test (TST) instrument was applied to all subjects with pre-test and post-test. Findings have shown that adult beginners who trained with a certified coach assisted by TopSpinPro intervention had improved their ability of groundstroke acquisition compared to the control group.

### **Oral Questioning Skills Of Secondary School Mathematics Teachers In Teaching And Learning Mathematics**

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Fadzlan Sa'aidin,  
Muhammad  
Sofwan Mahmud,  
Malaysia

**Keywords**

oral questioning  
skills,  
mathematics  
teacher,  
secondary schools

Previous studies have found that one of the factors contributing to the decline in the performance of students in Malaysia in the TIMSS global assessment is due to a lack of activity in oral questioning that can stimulate students' thinking in the teaching process of mathematics. In addition, less effective oral questioning strategies are implemented in teaching mathematics, making it difficult for students to understand the mathematical concepts. Thus, this study investigates the oral questioning skills that excellent secondary school mathematics teachers use during teaching and learning mathematics. This qualitative study uses a case study design. A total of five excellent secondary school math teachers from five different schools will be selected as study participants using a purposive sampling method based on the criteria set. The data was obtained through observation, interviews, document analysis, and field notes. Data obtained was analyzed using the constant-comparison method to produce theme and sub-theme. The study found that excellent Mathematics teachers have used more than one oral questioning strategy in the teaching session. This research finds that mathematics teachers used various oral questioning skills, such as giving waiting time, question diffusion strategies, calling the student's name, and using stimulation materials in oral questioning. The findings of this research can be used to widen the literature about oral questioning and provide guidelines for the implementation of oral questioning in teaching mathematics in secondary schools.

### **Lesson Study for undergraduate Malaysian sign language course**

Syar Meeze Mohd  
Rashid, Khairul  
Farhah

This study aims to identify the principles in the implementation of Malaysian sign language learning carried out by lecturers for Bachelor of Special

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**Keywords**

Malaysian Sign  
Language,  
undergraduate,  
special education

Education students. Traditionally, learning sign language has only involved teaching sign words without learning the use of the words learned by the students. This causes students to not know how to use appropriate sign words and to lack confidence in gesturing. Therefore, modifications are made by lecturers in the learning of Malaysian sign language based on the language learning theory of Symbolic Interactionism. To ensure its quality, lesson studies are introduced into the current practices. Generally, the Symbolic Interactionism theory proposes four main principles: meaning, language, thought, and measurement. The first stage is the stage of getting to know the meaning. That is, students are taught by showing words or symbols, seen or heard by being reinforced with expressions. The second principle, which is the language principle, is applied by training the sign language words that have been learned by combining them into a sentence. The third principle is the principle of thinking, which is to apply the sign language words that have been learned in various situations, namely by holding various activities such as dialogues, making song signs, telling stories and so on. Next to the final principle is the measurement, which is to carry out the measurement on the students, whether the test is expressive, receptive, or dialogic for the students.

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**Lesson Study Using Video Simulation in  
Microeconomic**

Mohamad Zuber  
Bin Abd Majid,  
Mohd Norazmi  
bin Nordin,  
Malaysia

**Keywords**

Lesson study,  
video simulation,  
teaching and  
learning.

This study aims to develop a learning method using animated curve drawing videos on the subject of microeconomics. In this study, eight teachers with more than ten years of experience in teaching and learning participated in a case study. To gather data for the creation of instructional materials for microeconomics courses utilizing animated movies, a targeted interview strategy was employed. Thematic analysis shows that the need to develop animated video teaching materials requires attractive animations, clear audio, subtitles, and clear graphic support. Teachers share their ideas and

collaborate with others through teaching methods using animated videos to attract interest, and focus and improve students' understanding of the subject of microeconomics. This study is expected to be implemented throughout the school as a teaching aid and collaborative teacher in improving student achievement in various subjects at school.

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### **Malaysian University Students with High Autistic Traits: A Qualitative Study of University Students' Experiences**

Mohd Syazwan  
Zainal, Hui Min  
Low, Hairul  
Nizam Ismail,  
Malaysia

#### **Keywords**

Autistic,  
University,  
Malaysian,  
Qualitative

Autistic traits refer to personality and cognitive traits similar to but milder than those observed in those formally diagnosed with Autism Spectrum Disorder (ASD). The statistics released by the Ministry of Higher Education, do not show specific data on the presence of ASD students in Malaysian public universities. This phenomenon occurs probably due to students do not want their status revealed or underreported. Therefore, this study was conducted because the prevalence of ASD is still low compared to global statistics in a particular population. To understand the personalities and characteristics of people with ASD, an assessment of the individuals can be made by looking at the concept of the broader phenotype of ASD through autistic traits. This study was conducted to examine the experiences and challenges of students with high autistic traits in the academic aspect of university. Interviews were conducted with seven students with high autistic traits from a public university in Malaysia. These seven students were identified among 1300 students who had made a self-assessment based on the Autism Spectrum Quotient instrument through a survey conducted in advance. The main findings of the study found that they faced difficulties in learning management, dealing with emotional issues, and did not get appropriate support as expected. This study emphasizes the need for universities in Malaysia to pay attention to the diversity of students and issues faced by individuals with high autistic traits.

### **Lesson Study Practice of Teachers in Special Education Schools for the Visually Impaired in Malaysia**

Mohd Norazmi Nordin,  
Mohamad Zuber Abd Majid,  
Malaysia

**Keywords**

Lesson study,  
Teachers, Special Needs,  
Visually impaired

Introduction to Lesson Study is a new thing for special education teachers in Malaysia. Although in reality, they have already been exposed to PLC which is actually almost the same as Lesson Study, but their understanding is slightly different. In determining their level of readiness regarding the implementation of Lesson Study, a brief study was conducted. This study was conducted on 30 special education teachers throughout the state of Johor, Malaysia by using a set of questionnaires. This survey is conducted online, which is a set of questionnaires given to teachers through the Google Form platform. The findings of this study found that their level of readiness is moderate due to their still insufficient exposure and understanding regarding Lesson Study. As an implication, the findings of this study can be used as a basis for authorities to introduce Lesson Study more comprehensively to special education teachers.

### **Sustained Lesson Study in Schools in Malaysia: The Role of Middle Leader Teachers.**

Aida Hanim A. Hamid,  
Darna Saprudin

Malaysia

**Keywords**

Lesson study,  
Sustained, Middle leader teachers

Sustained learning activities among teachers that are job embedded and collaborative have been promoted for school improvement. Lesson study has been practised as one such valuable learning approach. Sustaining Lesson Study turns out to be complex and teacher leadership is assumed to be vital especially among Middle Leader Teachers who are expecting to deliver, coordinate and get the Lesson Study immersed in their school. Although leadership is crucial for sustained Lesson Study, however what role should the Middle Leader Teachers reflect in their leadership is remain unclear. This study aims to underscore the role of Middle Leader Teacher in sustaining the practice of Lesson Study in Malaysia. Two literatures taken from the high index journals (each conducted via qualitative and

quantitative method, respectively) were identified and compared to answer the current argument. It is suggested the Middle Leader Teachers embedded Lesson Study as the organisational routines and enacted with teacher leadership core components and competencies. It is hoped this study can be a platform for middle leaders to improve their teacher leadership to sustain Lesson Study in their school as the powerful professional development approach among teachers.

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