Personalised Digital Learning Programme

*Bringing **you** the device, to bring your **learning** beyond*

Starter Kit for School PDLP Teams

Version as of 2 July 2021

INTRODUCTION

At the Committee of Supply Debate in 2020, Mr Ong Ye Kung, then Minister for Education, announced the launch of a National Digital Literacy Programme for our schools and Institutes of Higher Learning (IHLs). This better enables our students, at different stages of their education journey, to acquire the digital skills required to navigate the digital age.

This infusion of ICT into our education system is not new. Guided by the principle that teaching and learning is pedagogy-led, MOE's ICT in Education Masterplans have laid a strong foundation for schools to harness ICT since 1997. With the launch of the Singapore Student Learning Space (SLS) in 2018, our students have been provided with equal access to quality curriculum-aligned digital resources. As the capabilities and pool of curriculum resources in SLS grow, we have seen a steady increase in SLS usage by teachers and students. Over time, more teachers are using SLS to enhance the classroom experience, so that interaction, thinking and discussion come to the fore.

With the implementation of full Home-Based Learning (HBL) during the COVID-19 Circuit Breaker, there has been a rapid adoption of education technology by students and teachers. Moving forward, Blended Learning will become a regular feature of school life and technology is an enabler of blended learning experiences of students.

With these developments, MOE assessed that the system is ready to implement a programme for learning with a personal learning device (PLD). MOE will accelerate the programme and every secondary school student will have access to his/her own PLD by the end 2021. The PLDs will be used in tandem with the SLS and other educational technology to personalise and enhance learning.

Starting from July 2020, MOE will be rolling out a Personalised Digital Learning Programme (PDLP). The PDLP aims to:

1. <u>Enhance Teaching and Learning</u>
   PLDs harness technology for greater effectiveness in teaching and learning, enabled by teachers' use of e-Pedagogy to provide active learning experiences for students.

2. <u>Support Self-Directed and Collaborative Learning</u>
   PLDs enable students to learn online according to their needs and interests, and to collaborate with each other, anytime and anywhere.

3. <u>Support the Development of Digital Literacies</u>
   PLDs provide an immersive environment for students to develop the dispositions, knowledge and skills to thrive in the digital environment.

This starter kit aims to support schools in the implementation of PDLP. It takes reference from research and the PDLP Learning Pilot to guide schools to put in place effective and sustainable strategies for successful implementation of PDLP. A quick start guide has also been provided to give an overview of the key points and focus areas.

The strategies provided in this starter kit are neither exhaustive nor prescriptive. Schools have the flexibility to customise, differentiate and personalise learning with technology, according to their context and needs.

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Version Changes

S/N	Version	Description of change(s) made
1	Version 1.9 30 June 2021	[Chapter 2] Providing Leadership on Use of Technology in Teaching and Learning • Updated Annex 2-1: Resources on PDLP Learning Practices • Updated Annex 2-2: Resources on Technology Planning [Chapter 3] Creating an ICT-enriched Environment • Updated Annex 3-5: SLS Lessons on Productivity Tools and Digital Literacies [Chapter 4] Providing Curriculum Leadership for Technology Integration • Updated Annex 4-1: Resources on e-Pedagogy online modules on OPAL2.0
2	Version 1.8 30 April 2021	[Chapter 3] Creating an ICT-enriched Environment • Updated Annex 3-3a: ICT Equipment Loan Policy and Form [Sample] • Updated Annex 3-3b: Loan of School-Owned PLD – Daily Check-In & Out [Sample] • Updated Annex 3-6: Guidelines on AUP Implementation Updated Annex 3-7: Acceptable Use Policy (AUP) Template - Revised 2021 [Sample]
3	Version 1.7 31 March 2021	[Chapter 2] Providing Leadership on Use of Technology in Teaching and Learning • Updated Annex 2-4: Resources for Guiding Students [Chapter 3] Creating an ICT-enriched Environment • Updated Annex 3-5: SLS Lessons on Productivity Tools and Digital Literacies [Chapter 3.1] Device and Corresponding Ecosystem • Updated Focus Area 2: Managing the Device Management Application (DMA) [Chapter 3.2] Digital Accessibility Management • Updated Focus Area 2: Providing Access to Resources and Tools [Chapter 3.3] Digital Security and Safety Management • Updated Focus Area 1: Establish Structures and Processes for Safe Use of PLDs [Chapter 4] Providing Curriculum Leadership for Technology Integration Updated Annex 4-1: Resources on e-Pedagogy online modules on OPAL2.0
4	Version 1.6 8 March 2021	[Chapter 1] Overview of Proposed PDLP Activities for Phase 1 and Phase 2 Schools The following updates were made: • Schedule for HOD IP Workshop 3 for Phase 1 schools Schedule for HOD IP Workshop 1 for Phase 2 schools
5	Version 1.5 16 February 2021	[Chapter 1] Overview of Proposed PDLP Activities for Phase 1 and Phase 2 Schools The following updates were made: • Schedule for Mid-Term Review Session with ETO Consultants for Phase 1 Schools • Schedule for End-Term Review Session with ETO Consultants for Phase 2 Schools [Chapter 2] Providing Leadership on Use of Technology in Teaching and Learning • Added Annex 2-5: Resources on Partnering Parents [Chapter 3] Creating an ICT-Enriched Environment • Annex 3-6: Acceptable Use Policy (AUP) [Sample 1] (To be updated) • Annex 3-7: Acceptable Use Policy (AUP) [Sample 2] (To be updated) • Further updates on AUP will be provided on a later date. Please wait for guidance. Annex 3-11: DMA Overview (Key Functions) (To be updated)
6	Version 1.4 3 February 2021	[Chapter 1] Overview of Proposed PDLP Activities for Phase 1 and Phase 2 Schools The following updates were made: • Schedule for Clinic Sessions for Phase 1 Schools • Schedules for procurement of devices, HOD IP Workshops and Clinic Sessions for Phase 2 schools [Chapter 5] Supporting Professional Learning Updated Annex 5-3: Facilitation Toolkit to facilitate lesson design process
7	Version 1.3 2 Nov 2020	[Chapter 1] Schedules for staff engagement and parent engagement for Phase 1 Schools have been updated. The following are also added: • PDLP activities for Phase 2 Schools • Quick Start for PDLP Implementation

		[Chapter 2.3] Focus Area 1: Engage Staff • Added Annex 2-3: Resources on Engaging Staff [Chapter 3.1] Focus Area 2: Managing the DMA Added Annex 3-11: DMA Overview (Key Functions)
7	Version 1.2 30 Sep 2020	[Chapter 1] Overview of Proposed PDLP Activities for Phase 1 Schools: Schedules for parent engagement and procurement of devices have been updated.
8	Version 1.1 28 Aug 2020	[Chapter 4] Providing Curriculum Leadership for Technology integration: Outcomes of the HOD IP workshops have been updated.

1. OVERVIEW FOR SCHOOLS

1.1   PDLP ACTIVITIES FOR PHASE 1 SCHOOLS

Year	Month	Activities	KP(s) Involved
2020	July	Confirmation of PDLP Phase	School Leaders
	August	School Leaders Workshop: Technology Envisioning	School Leaders
		Kick-off Meeting with ETO Consultants	School PDLP Team
		HOD ICT Workshop 1: Technology Planning	HOD ICT
		HOD ICT Workshop 2: Learning Environment (School-wide Routines)	HOD ICT and ICT Manager
		Start of IT Infrastructure Checks	HOD ICT and ICT Manager
		Physical Infrastructure Preparations	HOD ICT and Operation Manager
	September	Device Briefing and Device Roadshow	HOD ICT
		Teachers to Start Online Modules	SSD
	October	School Core Team completes Planning for PDLP	School PDLP Team
		Procurement Portal Training	Admin Manager / HOD ICT
		HOD ICT Workshop 3: DMA Policy and Management	HOD ICT and ICT Manager
		HOD IP Workshop 1: Technology Integration into Curriculum Planning (4 runs from Oct 2020 to Nov 2020)	HODs IP and Teacher Leaders
	November	Completion of IT Infrastructure Checks and Preparation for Physical Infrastructure	HOD ICT and ICT Manager
		Staff Engagement Resources	School Leaders
		HOD IP Workshop 2 - e-Pedagogy: Lesson Design for Active Learning with Technology (4 runs from Nov 2020 to Feb 2021)	HODs IP and Teacher Leaders
	December	Planning for Parents Engagement with Parent Engagement Resources	School PDLP Team
		Communications to Parents (Sec 1 Registration)	School PDLP Team

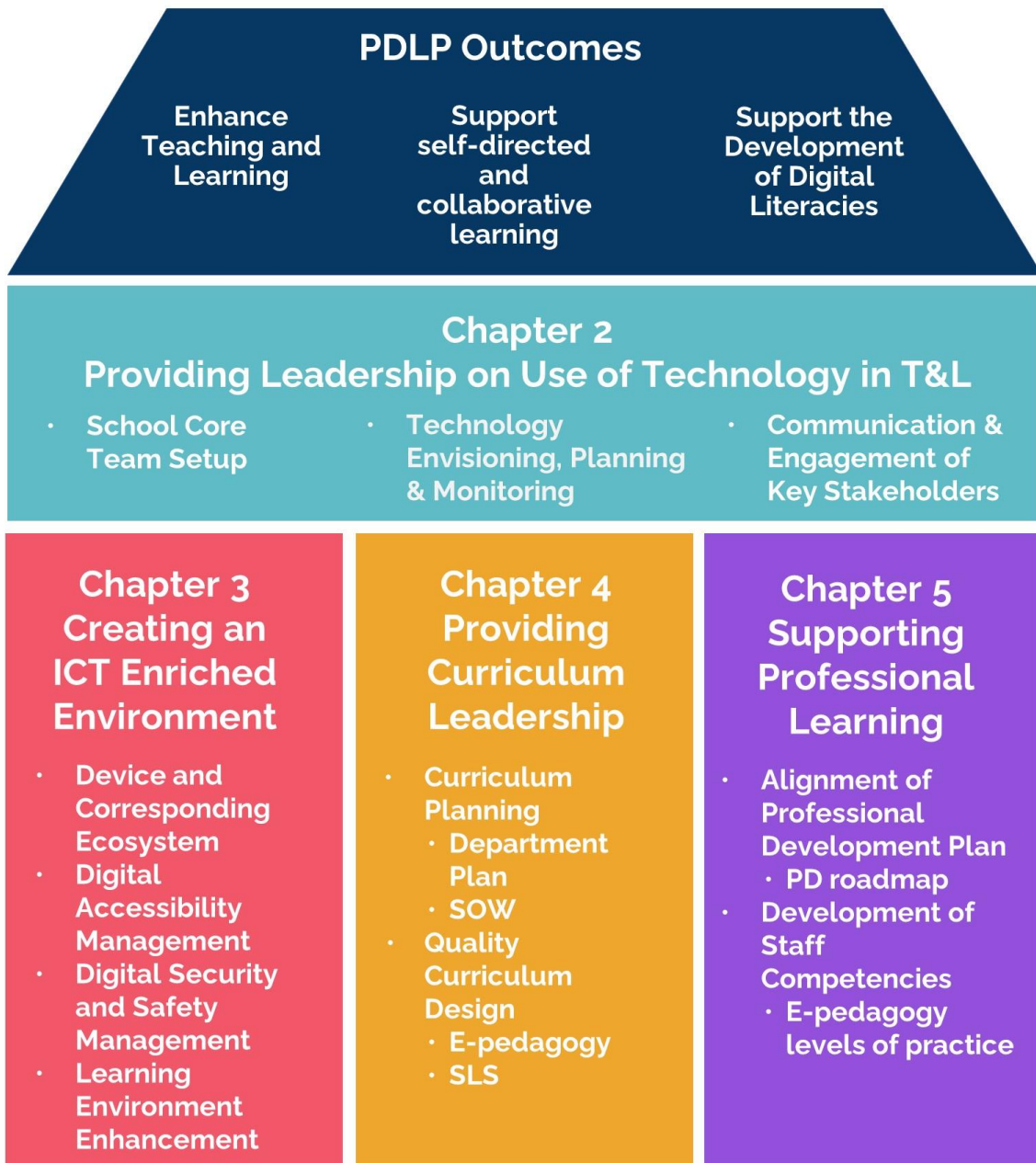| Year	Month	Activities	KP(s) Involved
2021	January	Communications to Parents on PDLP	School PDLP Team
		Preparation of Procurement for Sec 1-3 Students	School PDLP Team
		Start of Device Procurement (Sec 1-3 Students)	HOD ICT and Admin Manager
	February	Planning for Stakeholders Engagement with Parent Handbook and Students' Kit	School PDLP Team
		Mid-term Review Session with ETO Consultants (from Feb 2021 to Mar 2021)	School PDLP Team
	March	Start of Collection of Devices (Sec 1 -3 Students)	HOD ICT
		Enhancing use of Device	School PDLP Team
		Guide teachers to design lessons with PLD	HODs IP and Teacher Leaders
		HOD IP Workshop 3 - e-Pedagogy: Giving Feedback for Quality Lesson with Technology Run 1: 2 Mar (PM) Run 2: 9 Mar (PM)	HODs IP and Teacher Leaders
		Engagement with Parents	School PDLP Team
		IT Infrastructure Health Check	HOD ICT
		Funds Utilisation Check	HOD ICT and Admin Manager
	May	Teachers to Complete Online Modules	SSD
	June	HOD IP Workshop 3 - e-Pedagogy: Giving Feedback for Quality Lesson with Technology Run 3: 24 June (AM)	HODs IP and Teacher Leaders
		Quarterly Review of School Plans	School PDLP Team
		Networking with other KPs	HOD ICT and HODs IP
		Coaching of Teachers by HODs IP	HODs IP and Teacher Leaders
	July	Clinic Sessions on Lesson Design, Enactment and Review: Term 3 Week 2 to Term 3 Week 9 (6 July to 26 August 2021)	Teachers
		Completion of device collection (Sec 1 – 3 Students)	HOD ICT
	August onwards	End-Term Review Session with ETO Consultants	School PDLP Team
	September	Teacher Familiarisation with DMA	School PDLP Team

1.2 PDLP ACTIVITIES FOR PHASE 2 SCHOOLS

Year	Month	Activities	KP(s) Involved
2020	July	Confirmation of PDLP Phase	School Leaders
	September	Procurement and Device Briefing	VP, HOD ICT and ICT Manager
		Product Sharing and Procurement Training	HOD ICT and Admin Manager (AM)
	October	School Leaders Briefing: Technology Envisioning	School Leaders
	November	Staff Engagement Resources	School Leaders
	December	Planning for Parents Engagement with Parent Engagement Resources	School PDLP Team
2021	January	Virtual Device Showcase	HOD ICT
		Teachers to Start Online Modules	SSD
	February	HOD ICT Workshop 1: Technology Planning	VP and HOD ICT
		Planning for Stakeholders Engagement with Parent Handbook and Students' Kit	School PDLP Team
	March	Kick-off Meeting with ETO Consultants	School PDLP Team
		Preparation of Procurement for Sec 1-3 Students	School PDLP Team
		HOD ICT Workshop 2: Learning Environment (School-wide Routines)	HOD ICT and ICT Manager
		IT Infrastructure Checks	HOD ICT and ICT Manager
		Physical Infrastructure Preparations	HOD ICT and Operation Manager
	April	HOD ICT Workshop 3: DMA Policy and Management	HOD ICT and ICT Manager
		Communications to Parents on PDLP	School PDLP Team
		Start of Device Procurement (Sec 1-3 Students)	HOD ICT and Admin Manager
	May	HOD IP Workshop 1: Technology Integration into Curriculum Planning • Run 2: 25 May (PM) • Run 3: 27 May (PM) • Run 4: 4 Jun (AM) • Revised Run 1: 23 Jun (AM)	HODs IP and Teacher Leaders
	June	Completion of IT Infrastructure Checks and Preparation for Physical Infrastructure	HOD ICT and ICT Manager
		School Core Team completes Planning for PDLP	School PDLP Team

	July	IT Infrastructure Health Check	HOD ICT
		Complete Device Procurement (Sec 1 – 3 Students)	HOD ICT and Admin Manager
		Enhancing use of Device	School PDLP Team
	August	Funds Utilisation Check	HOD ICT and Admin Manager
	September	Guide teachers to design lessons with PLD	HODs IP and Teacher Leaders
		IT Infrastructure Health Check	HOD ICT
		Teacher Familiarisation with DMA	School PDLP Team
	October	Teachers to Complete Online Modules	SSD
		HOD IP Workshop 2: e-Pedagogy: Lesson Design for Active Learning with Technology Run 1: 19 Oct (PM) Run 2: 26 Oct (PM) Run 3: 28 Oct (PM) Run 4: 2 Nov (PM)	HODs IP and Teacher Leaders
	By November	Mid-term Review Session with ETO Consultants	School PDLP Team
2022	February onwards	End-Term Review Session with ETO Consultants	School PDLP Team
		Quarterly Review of School Plans	School PDLP Team
		HOD IP Workshop 3: e-Pedagogy: Giving Feedback for Quality Lesson with Technology (To be confirmed)	HODs IP and Teacher Leaders
		Networking with other KPs	HOD ICT and HODs IP
		Coaching of Teachers by HODs IP	HODs IP and Teacher Leaders
		Clinic Sessions on Lesson Design, Enactment and Review (Dates to be confirmed)	Teachers

PDLP Quick Start

This quick start guide shares the key focus areas for 1:1 PLD to guide schools in their implementation. Further details on how it can be done can be found in the subsequent chapters in this starter kit.

PDLP Outcomes

Enhance Teaching and Learning

Support self-directed and collaborative learning

Support the Development of Digital Literacies

Chapter 2
Providing Leadership on Use of Technology in T&L

- School Core Team Setup
- Technology Envisioning, Planning & Monitoring
- Communication & Engagement of Key Stakeholders

Chapter 3 Creating an ICT Enriched Environment

- Device and Corresponding Ecosystem
- Digital Accessibility Management
- Digital Security and Safety Management
- Learning Environment Enhancement

Chapter 4 Providing Curriculum Leadership

- Curriculum Planning
  - Department Plan
  - SOW
- Quality Curriculum Design
  - E-pedagogy
  - SLS

Chapter 5 Supporting Professional Learning

- Alignment of Professional Development Plan
  - PD roadmap
- Development of Staff Competencies
  - E-pedagogy levels of practice

Chapter 2: Providing Leadership on Use of Technology in Teaching & Learning

Schools to review and refine their technology plans to meet the learning needs of each and every student in a digital age and prepare them to be future ready.

2.1 School Core Team Setup

Have a core team to facilitate the change process and to ensure programme sustainability. Led by the Principal or Vice Principal, the PDLP core team should include HODs ICT and IP, School Staff Developers, and Teacher Leaders.

2.2 Technology Envisioning, Planning and Monitoring

MOE Professional Development Support

HOD ICT Workshop 1: Technology Planning

Focus Area 1: Developing A Shared Vision
- Provide the purpose and direction for the use of personal learning devices through shared vision.
- Make professional decisions at each milestone of the PDLP journey.

Focus Area 2: Developing A Technology Plan
- Provide clarity on student skills and competencies to be future ready.
- Ensure that the technology planning process addresses 3 areas of focus - Curriculum, Pedagogy and Assessment, Professional Development and Learning Environment.
- Ensure that strategies are coherent, mutually supports one another and are aligned to deployment of resources, timeframe and indicators.

2.3 Communication and Engagement of Key Stakeholder

Focus Area 1: Engage Staff
- Allay staff concerns and insecurities and ensure that staff feel supported.
- Provide clarity on staff roles and responsibilities as well as deliverables.

Focus Area 2: Empower Students
- Develop students' sense of responsibility in caring for and in using their PLDs.
- Guide students on how to use PLD productively.

Focus Area 3: Partner Parents
- Use existing platforms to communicate with parents on how PDLP provides opportunities to enhance teaching and learning, and helps students develop digital literacies.
- Communicate regularly and openly with parents on their roles in motivating and guiding their child on the meaningful and responsible use of PLD.

Chapter 3: Creating an ICT-enriched Environment

A safe, conducive and efficient ICT-enriched environment allows students to focus on learning. It comprises online and offline learning in and out of school.

3.1 Device and Corresponding Ecosystem

Focus Area 1: Choosing a School Prescribed Device
- Select a suitable PLD based on important considerations to meet school's envisioned teaching and learning scenarios.

Focus Area 2: Managing the Device Management Application (DMA)
- Establish a DMA administration team and customise degree of DMA based on school and stakeholders' needs.

Focus Area 3: Deciding on Support for Student's Device
- Set up a support system for students facing technical issues to minimise disruption to their learning.

Focus Area 4: Establishing Device Storage and Power Management
- Provide a secure place for students to store their PLDs.
- Establish a SOP to facilitate secure storage of PLDs.

MOE Professional Development Support

1. HOD ICT Workshop 3: DMA Policy and Management
2. Device Briefing
3. Device Roadshow
4. Procurement Portal Training

3.2 Digital Accessibility Management

Focus Area 1: Ensuring Connectivity
- Desktop Engineer to work with Network Engineer and resolve wireless network issues in classrooms and identified learning spaces.

Focus Area 2: Providing Access to Resources and Tools
- Ensure that students have ease of access to resources and tools used for lessons
- Equip students with knowledge on use of technology productivity tools.

3.3 Digital Security and Safety Management

Focus Area 1: Establish Structures and Processes for Safe Use of PLDs
- Establish clear guidelines in Acceptance User Policy (AUP).

Focus Area 2: Establish Effective School-wide Cyber-Wellness Practices
- Establish a holistic CW education by considering the 5 key enablers.

HOD ICT Workshop 2: Learning Environment

3.4 Learning Environment Enhancement

Focus Area 1: Establishing Routines
- Establish a set of school-wide and classroom routines (SOPs) to help in managing day-to-day operation and classroom teaching.

Focus Area 2: Reconfiguring the Physical Learning Environment
- Consider reconfiguring the classroom layout to magnify the effects of learning in a PDLP environment.

Chapter 4: Providing Curriculum Leadership for Technology Integration

With the changing context of learning in this digital age, leveraging the affordances of technology to develop the future-ready learner through the curriculum is critical. Curriculum leaders need to understand the learning experiences that will develop students as future-ready learners in a blended learning environment with PLDs.

4.1: Curriculum Planning

Focus Area 1: Integrating Technology into Curriculum

- Review student learning outcomes to include PDLP outcomes such as self-directed learners and connected learners.
- Review existing practices and programmes and identify changed practices to bring about the envisioned student outcomes.
- Use e-Pedagogy to guide design for a variety of active learning experiences enabled by PLD.
- Integrate processes to monitor the implementation of changed teaching and learning practices

MOE Professional Development Support

1. **HOD IP Workshop 1: Technology Integration into Curriculum Planning**

4.2: Quality Curriculum Design

MOE Professional Development Support

2. **HOD IPWorkshop 2: e-Pedagogy - Lesson Design for Active Learning with Technology**

3. **HOD IP Workshop 3: e-Pedagogy - Giving Feedback for Quality Lesson with Technology**

Focus Area 1: Designing Quality Lessons

- Use SLS PS as a set of considerations to guide design and provide feedback to teachers.
- Consider how a learning environment with PLDs can be leveraged to develop future ready learners.
    - Design learning experiences with the active learning processes.
    - Facilitate learning interactions with technology, student-content, student-student, student-teacher, student-community.
    - Enhance assessment by making students' learning visible and use students' works and data.

Chapter 5: Supporting Professional Learning

Teachers need to be supported with professional learning in this PDLP journey so as to enable them to incorporate e-Pedagogy in lesson design to deepen students' learning in a learning environment with PLDs in support of the school's vision for technology use.

5.1: Alignment of Professional Development Plan

MOE Professional Development Support

Focus Area 1: Develop Training Road Map
- Consider riding on the PDLP initiatives and map the school training road map to support the development of all teachers' competencies to the proficient level of e-Pedagogy under SFEd.
- Development of identified teachers, teacher leaders and HODs to the accomplished and leading levels of e-Pedagogy.

1. Clinic Sessions
2. Online Course in Opal 2.0

5.2: Development of Staff Competencies

Focus Area 1: Addressing Staff Learning Needs
- In profiling staff learning needs, school could leverage:
  - SFEd Levels of Practice for e-Pedagogy
  - Resources for PDLP Learning Practices
- Consider developing a tiered staff training roadmap to cater to different competency levels.
- Provide structure for peer support to enable staff to support and mentor one another

Focus Area 2: Structuring PD By Role Profile
- Align the professional development needs and competencies of teaching staff to the role profile in leading technology use.
  - Develop Middle Managers as Curriculum Leaders, harnessing technology in lesson design, and providing post lesson enactment feedback for refinements.
  - Develop teachers as learning designers and facilitators of learning in a safe environment.

Focus Area 3: Creating PD Platforms/ Structures
- Build a culture of collaborative professionalism by leveraging existing platforms/structures for staff to share and learn about teaching and learning with technology and meeting varying PD needs.
  - At the school level, tap on staff meeting day, PD day and open classroom.
  - At the department level, tap on PLT and department meetings

2. PROVIDING LEADERSHIP ON USE OF TECHNOLOGY IN TEACHING AND LEARNING

The purpose of PDLP is to personalise learning, to meet the learning needs of each and every student in the digital age and prepare them to be future ready. It goes beyond the provision of a device but requires a shift in the way lessons are designed and enacted to provide the learning experiences to 'find, think, apply and create' through the mediated use of technology.

In this journey, schools will need to continuously review and refine their plans at different stages. This constant cycle of reviewing and refining is essential to ensure that the programme stays relevant, especially in the face of the dynamic evolution of technology and its tools.

2.1.   SCHOOL CORE TEAM SETUP

The move to implement PDLP may challenge many in their current perspectives and practices on teaching and learning with technology. Forming and empowering a core team is helpful in the change process and ensures sustainability of the programme. Led by the Principal or Vice-Principal (Academic), the PDLP core team should include the HOD ICT, School Staff Developer (SSD), HODs IP as well as Teacher Leaders. The table below proposes areas of focus (enablers) for different members of the PDLP core team.

Table B1: Areas of Focus for PDLP Core Team Members		School Leaders (SLs)	HOD ICT	HODs IP Teacher Leaders	SSD
Providing Leadership on Use of Technology in T&L	School Core Team Setup	✔			
	Technology Envisioning, Planning and Monitoring	✔	✔	✔	✔
	Communication and Engagement of Key Partners	✔	✔		
Developing ICT-enriched Environment	Choice of Device & Device Management	✔	✔		
	Digital Accessibility Management		✔		
	Digital Security & Safety Management		✔		
	Learning Environment Enhancement	✔	✔	✔	✔
Providing Curriculum Leadership for Technology Integration	Curriculum Planning			✔	
	Quality Learning with Technology		✔	✔	✔
Supporting Professional Learning	Alignment of PD Plan	✔	✔	✔	✔
	Development of Staff Competencies	✔	✔	✔	✔

2.2. TECHNOLOGY ENVISIONING, PLANNING AND MONITORING

Technology envisioning will engage the school community to develop a shared vision for PDLP. It helps the school to examine its state of technology integration and infrastructure readiness for deployment of PDLP. It offers insight to the benefits and challenges of a technology-integrated environment. It will prepare the core PDLP team in envisioning how PDLP, supported by e-Pedagogy and personal learning device can improve student outcomes. It can also help the team to prepare for situations where there may be resistance to change or uncertainty among the staff and parents.

The process of technology planning will provide clarity on skills and competencies to develop in students and direction of technology use in teaching and learning. It will also foster a whole-school approach towards achieving desirable and sustainable shifts in classroom practices to enhance student learning.

Focus Area 1: Developing A Shared Vision		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Messages**
1. What would PDLP look like in your school? ● Student practices ● Teacher practices ● Learning environment	Schools could look at how PDLP can achieve learning outcomes for students, teachers and the school. These outcomes are aligned to the Learn for Life initiative and digital literacies. Schools could empower students to be self-directed and motivated learners. Through learning experiences designed by teachers, students should be able to use the PLDs meaningfully to organise their work, document their own learning, and competencies to achieve specific goals. Students could be able to learn beyond curriculum time at their own pace using PLDs, as well as explore their own interests, passion and/or real-world problems anytime, anywhere. Furthermore, PLDs allow students to collaborate with peers and experts beyond the classroom to create new knowledge. Through the PDLP, students could also immerse themselves in a digital environment which will better enable them to acquire digital competencies and apply these skills as they navigate in a digital environment. With PDLP supporting blended learning, teachers could leverage on the affordances of digital and face-to face learning so as to	Provide a purpose and direction for the use of personal learning devices through shared vision. Make professional decisions at each milestone of the PDLP journey

	facilitate the seamless transition between the learning environments.	
2. What are the professional decisions to be made for smooth implementation of PDLP?	Schools could make professional decisions at each milestone based on the following considerations: a. Learner Experience and Seamlessness b. Teacher Readiness and Pedagogy c. Equity and Access d. Autonomy versus Control Annex 2-1: Resources for PDLP Learning Practices	

Related Professional Development Support:

School Leaders Briefing: Technology Envisioning
[Compulsory] For School Leaders
Outcome: Develop a vision and approach for technology use in teaching and learning in a environment with PLD

Focus Area 2: Developing A Technology Plan

Guiding Questions and Considerations	Suggestion & Resources	Key Messages
1. What are the skills and competencies our students need to be future ready? 2. Where is the school currently at in terms of the extent of technology use? Where does the school want to go from here? How should the school get there? 3. What are the new actions we want to see in our key stakeholders (HODs IP, teachers & students) for	Schools could develop strategies based on the student, teacher and school outcomes of PDLP to shift teaching and learning practices. Schools could conduct an internal scan of current school practices and processes (pertaining to technology use) to determine the school's starting point, and the areas to develop in order to achieve the envisioned state of technology use for teaching and learning Schools could carry out technology planning to address the following areas: a. Harnessing Technology for Curriculum, Pedagogy and Assessment (CPA) b. Supporting Professional Learning with Technology c. Developing an ICT-Enriched Learning Environment	Provide clarity on student skills and competencies to develop the direction of technology use in teaching and learning. Foster a whole-school approach towards achieving desirable and sustainable shifts in ICT practices. Assess the effectiveness of PDLP and improve the programme for relevance and sustainability.

classroom practice & professional learning? 4. What data to gather to monitor and evaluate the impact of the PD plan? ● Key performance indicators ● Key milestones & deliverables	In assessing and reviewing the PDLP, school could think about impact on students learning in the following areas: a. Nature of impact e.g. having multiple indicators to validate various dimensions of an outcome, having qualitative data to support quantitative data b. Pervasiveness e.g. impact on one level of students or whole student population, impact on one department or all departments c. Magnitude e.g. quality of lesson designs, how SLS is being used Annex 2-2: Resources on Technology Planning	Ensure coherence and alignment from student outcomes to types of teachers' capacities to build, shifts in practices in teaching and learning, and appropriate evidence to collect for review.

Related Professional Development Support:

HOD ICT Workshop 1: Technology Planning
[Optional] For Vice-Principal, HOD ICT
Outcome: Develop coherent strategies in integrating technology into teaching and learning

2.3. COMMUNICATION AND ENGAGEMENT OF KEY STAKEHOLDERS

When engaging key stakeholders such as staff and parents, the rationale and intent for accelerating PDLP and their respective roles in the implementation of the programme have to be clearly communicated. It is also important to keep key stakeholders updated on the progress of the implementation. The efforts of engaging stakeholders include:

- Engage staff in reconsidering pedagogical lesson design and classroom practices with PDLP
- Empower students on responsible and meaningful use of their PLDs; and
- Partner parents as in supporting their child's learning with PLD and digital well-being.

Focus Area 1: Engage Staff		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Messages**
1. What are the views of staff on PDLP implementation? ● Concerns/ Challenges	SLs/middle managers could share the rationale and intent of PDLP with staff to garner buy-in and allay their concerns by a. Sharing the School's Vision of technology use and how it will develop future-ready learners b. Sharing the School's plan to help teachers and students achieve the vision c. Placing emphasis on staff's current practices and how PDLP can fit in with minimal changes; and d. Creating platforms for celebrating small successes e. Providing staff with more information on PDLP via the PDLP one-stop site (go.gov.sg/pdlp).	Allay staff concerns and insecurities and ensure that staff feel supported in the implementation of PDLP. Provide clarity on staff roles and responsibilities as well as deliverables in PDLP implementation. Establish platforms for ground-up initiatives for co-sharing of PDLP practices and learning points. Acknowledge efforts and celebrate achievement of planned milestone deliverables.
2. What information/ key ideas and support does staff need in order to feel supported and secure?	Regular engagement of staff could be planned to: a. Surface concerns and exchange strategies to address their challenges b. Clarify PDLP objectives and deliverables c. Encourage staff efforts through showcasing good practices Conversations at the Staff level could revolve around the following: ● How can PDLP be harnessed to better design the blended learning experiences for our students? (not limited to academic subjects, but also other areas like CCE, CCAs etc.) ● How can the data captured by the use of technology improve Assessment for Learning?	

	● How can opportunities for students to pick up Digital Literacies be weaved into the curriculum? ● What are the adjustments that need to be made with respect to classroom management? ● How can Cyber Wellness be strengthened in the school? Annex 2-3: Resources on Engaging Staff	

Focus Area 2: Empower Students		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Messages**

1. What is acceptable behaviour when using a PLD?
 	
2. What could students use PLDs for in school and at home?
	Students could be taught responsible use and care of their PLD. For example, schools can
	a. Emphasize the importance of Cyber Wellness and engage students on the following issues:
	  ● Internet Addiction
	  ● Cyberbullying
	  ● Computer Security and Handling of inappropriate online behaviour
	  ● (refer to CCE Syllabus documents on Cyber Wellness for more details)
	b. Reach a joint agreement with students and on class rules for device use and the Acceptable Use Policy (See Chapter 3.3)
	c. Facilitate discussions with students on how PLDs can be used to improve productivity (SLS lessons on use of productivity tools are now available in SLS MOE library under the subject Digital Literacy)
	
	Annex 2-4: Resources for Guiding Students
		Develop students' sense of responsibility in caring for and in using their PLDs.
		
		Guide students on how to use PLD productively (be it for learning or for leisure).

Focus Area 3: Partner Parents		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Messages**
1. What are the views of the parents on PDLP implementation? ● Concerns/ Challenges ● Expectations	Schools could tap on existing platforms to continue communicating and engaging parents. Parents might have concerns about a. Programme Intent and Scope; b. Device cost; c. Students' well-being (e.g. cyber wellness issues, myopia, weight of schoolbag etc.)	Inform parents on how PDLP provides opportunities to enhance teaching and learning, and helps students develop digital literacies.
2. How can parents support PDLP? ● Managing child's use of PLD at home	Parents who are new to the use of PLD for learning could also have questions on the use of PLD for learning. For example, a. How is learning with a PLD different from their own experience when they were in schools? b. How can they monitor a child's learning progress? c. How do they know if the child is engaged in meaningful and productive work when using their PLD?	Communicate regularly and openly with parents on their roles in motivating and guiding their child on the meaningful and responsible use of PLD.
3. How can we enlist parents to play a more active role in the partnership? ● Sharing of good practices	Schools could enlist their Parent Support Group to share good practices. Some suggestions are: a. Parent Advocates during Orientation Day b. Feature useful tips for Parents by Parents for school magazines	
4. What are the available platforms for parents' engagement? ● Parent – school meetings or briefing ● School website or Parents Gateway ● Parents Workshop	To alleviate parents' uncertainty and concerns, school could: a. Invite parents for a classroom learning experience with PLD b. Share the homework policy (including online / PLD work) with parents c. Provide parents with assessment plan and schedule d. Invite parents for talks and workshops related to technologies for learning/cyber wellness e. Provide timely and practical strategies for parents to adopt through a parents' kit f. Establish a common understanding of the use of devices through the AUP Annex 2-5: Resources on Partnering Parents	Partner parents in helping the child to develop the skills and dispositions necessary for an increasingly digitised world Maintain open channels of communication on PDLP related matters with parents.

3. CREATING AN ICT-ENRICHED ENVIRONMENT

A safe, conducive and efficient ICT- enriched environment will help teachers in using technology confidently and allow students to focus on learning. The ICT-enriched environment comprises the online and offline environment. With the use of PLDs, the home environment of the student would also be a critical factor.

3.1. DEVICE AND CORRESPONDING ECOSYSTEM

MOE has established a device bulk tender for schools to facilitate the procurement of the devices for PDLP. The devices made available in the bulk tender will be compatible with the Device Management Application (DMA) solution to manage the devices.

In order to ensure the optimum performance of student PLDs during teaching and learning, schools need to check that the devices procured for PDLP meet the requirements of the learning activities that students need to complete. Other considerations include central management of access to appropriate content via these devices, IT support for student devices as well as charging and secure storage of the devices.

Focus Area 1: Choosing a School Prescribed Device		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Messages**
1. How will the device be used? ● Learning scenarios (In-class learning, out-of-class learning, inking function, available functions) 2. What functions are required of the device?	Schools could consider the different learning scenarios envisioned. Possible scenarios could include use of device to: a. Access SLS extensively together with Web tools b. Collaborate with others via Web tools c. Write codes/programmes for Applied Learning Programme d. Access apps/software used by teachers for teaching and learning e. Draw/write by hand (e.g. Mathematics working, Art sketching etc.) f. Collect/record data on learning journeys g. Video recording and editing for project presentation	Review teaching and learning scenarios to ensure devices chosen will be able to meet all common use cases. (For special/ad hoc cases, alternatives can be considered) Consider the ecosystem that comes along with the device.
3. How do the schools compare across devices? ● Physical and technical specifications of the device (E.g. Screen size, weight form factor,	With the envisioned scenarios, schools could then consider the different physical and technical specifications: a. Screen size – For in class use, there would be scenarios where students have additional worksheets or manipulatives to use alongside their devices. Hence, the device should not cover the whole of the desk area. b. Weight – As the students will need to bring their devices to and from school, the weight of the device is of concern. Schools could	

operating system etc.) ● Peripherals (E.g. Stylus, keyboard etc.) ● Affordability (Device cost, peripherals required)	consider reviewing the number of items the student will need to bring for school each day. c. <u>Clamshell vs Convertible (or Tablet)</u> – While the hinges of the clamshell model is believed to be sturdier than the convertible model, it is harder for students to draw/write by hand on a clamshell model, as the screen cannot be placed flat. d. <u>Operating Systems (OS)</u> – Different operating systems will have their own capabilities and ecosystem. Chromebooks and mobile tablets tend to come with thinner operating systems which allow for faster start-up and processing but certain functions (e.g. installation of software) could be limited. Each OS will also come along with their proprietary functions (e.g. Play Store, iTunes, Edge etc.). e. <u>Peripherals</u> – Depending on device, school might decide to include additional items. For example, an external keyboard could be paired with a mobile tablet; a stylus could be paired with a device with touchscreen etc. f. <u>Affordability</u> – School should not prescribe a device with specifications much higher than what the planned curriculum requires. The cost of required peripherals will also add on to the cost of the device. Where possible, schools should tap on the MOE HQ bulk tender to purchase the devices and peripherals. School should be mindful that students would have more funds than usual in their Edusave for 2020 as COVID-19 has curtailed many enrichment programmes. Schools should ensure that their choice of device is sustainable for subsequent student cohorts when Edusave use returns to normal levels.	

Related Admin Support:

Procurement and Device Briefing
[Compulsory] For Vice-Principal, HOD ICT
Product Sharing and Procurement Training
[Compulsory] For Admin Manager, HOD ICT
Virtual Device Showcase
[Optional] For HOD ICT

Focus Area 2: Managing the Device Management Application (DMA)		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Messages**
1. How can management of students' PLDs be made easier?	In PDLP, students' devices are installed with a Device Management Application (DMA) to help schools in managing the devices. Schools have autonomy to manage the settings and operate the DMA solution, based on the baseline policies that MOE HQ will provide. A team should be set up to manage the application. While the choice of DMA (and hence its functionality) could be dependent on the device, there are 3 general levels of DMA: a. Mobile Device Management Facilitates the updating and management of the PLDs, protects PLDs from malicious software, and protects students from objectionable internet content. b. Usage Management Enables the school and/or parents to better supervise and set helpful limits for students' use of PLDs after school. c. Classroom Device Management Enables teachers to manage the student's use of the PLD during lesson time to improve classroom management and support effective teaching and learning.	Establish a team to manage the application and leverage on data obtained from the DMA. Customise the degree that DMA is used based on the needs and concerns of stakeholders.
2. What are concerns with the use of the device (e.g. cyber issues)? ● Teachers ● Parents ● Students	Needs and concerns of stakeholders need to be considered when setting up the DMA: a. Teachers – The DMA setting should not hinder teaching and learning and is not a replacement for inculcating positive online habits. For example, restricting access of websites/apps through a list of approved websites determined by the school's DMA team. Depending on school processes. It must be clearly communicated to teachers on who to approach (DMA administrator) and on what basis if they would like to request new sites/apps to be added. b. Parents – Worries about excessive use and misuse of devices could be minimised through usage of management (e.g. limit screen time) with the installation of DMA. Sites/apps related to games, gambling, pornography can also be restricted. CCE lessons guide students in making responsible	

decisions on the use of devices. Finally, Cyber Wellness Resources for parents will help reinforce positive online habits and cyber wellness at home.

c. <u>Students</u> – The PLD can be used for more than schoolwork. Students could use the PLD for leisure (e.g. music, sketching etc.) as well as exploration of interest (e.g. coding software, viewing how-to videos etc.)

Annex 3-11: DMA Overview (Key Functions) (To be updated)

Related Professional Development Support:

HOD ICT Workshop 3: DMA Policy and Management
[Compulsory] For HOD ICT, IT Manager
<u>Outcome:</u> Competency to set up and manage the DMA

Focus Area 3: Deciding on Support for Student's Device		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Messages**
1. How can device damages be minimised?	Students should be taught responsible use and care of their PLD (See Chapter 2.3). To provide further help: a. Peripherals (e.g. device sleeve, screen protector etc.) which might help with device care could also be recommended. b. Students could also be provided with simple self-help guides on how to care for and perform simple troubleshooting on their devices.	Develop students' sense of responsibility in caring for and in using their PLDs
2. What support can schools put in place to help students/parents if they face device issues? ● In-house support ● Vendor support	While the device is student-owned, schools should provide some technical help when students face technical issues, so as not to disrupt student's learning. Some examples of support could include: a. <u>In house service desk for students</u> – Consider having a manned service desk (by Desktop Engineers) at a designated location for specific opening hours (30mins before school, recess time, 1 hour after school), so that students are able to bring their devices for troubleshooting and to resolve connectivity/ account issues	Set up a support system for students facing technical issues to minimise disruption to their learning.

b. <u>Loan system for students</u> – When a student's device is not able to function or is lost, the school could have a loan system in place to provide a school device for short-term use. Schools could put in place a pool of devices for loan and have a loan system and processes in place.

c. <u>Liaison for vendor support</u> – Schools could help aggregate required hardware repairs and liaise with the vendor for support. For example, as part of a service desk, desktop engineers can help to liaise with the vendor.

Annex 3-1: PLD familiarisation for students
Annex 3-2: Device care guide for students
     [Sample]
Annex 3-3a: ICT Equipment Loan Policy and Form [Sample]
Annex 3-3b: Loan of School-Owned PLD – Daily Check-In & Out [Sample]

Focus Area 4: Establishing Device Storage and Power Management		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Messages**
1. How are the PLDs stored as students move between learning spaces?	Schools can provide secured places for students to store their devices when they are away for prolonged periods. Common practices for device storage include: a. <u>Dedicated storage with common lock</u> In the year of implementation, additional funding will be provided for schools to purchase metal cabinets for each class. These can be placed in classrooms or CCA rooms as common storage for the students. Plastic dividers can be added to ensure that the devices can be easily identified and retrieved. Routines of storing students' PLDs in the provided cabinets must be clearly communicated to students and staff b. <u>Locking up the classroom</u> To enhance security, besides locking PLDs in the metal cabinets, classrooms should also be locked to restrict students' access to their classroom during breaks. Schools could consider a digital lock system to reduce logistics issues.	Provide a secure place for students to store their PLDs.

	To facilitate student movement throughout the day, schools could develop a simple SOP to ensure security of the devices as students move in and out of their classrooms. Scenarios in which students will need to store their PLDs include:
	  a. Recess/ lunch time
	  b. PE lessons
	  c. CCA Practice
	  d. Lessons in special rooms
	  e. School external events (e.g. Learning journeys, competitions etc.)
		Establish a SOP to facilitate secure storage of PLDs to reduce transition time.

2. What is the policy for charging student devices in school?	Schools could establish routines for students to ensure that their devices are fully charged before the start of the day. For contingencies, schools could consider: a. Setting up charging stations at suitable, strategic locations around the school (for charging in the common areas (the points should have surge arrestor and should not be exposed to outdoor elements) b. Setting up a few power strips in class as back-ups for students to charge during lessons c. Loaning portable chargers to students (Dependent on individual school's funding)	Establish routines to ensure that students' devices are fully charged before the start of the day.

3.2.   DIGITAL ACCESSIBILITY MANAGEMENT

There is a need to allow for fair accessibility to technology as well as the ability to use it in order to enhance the learning process for all involved. In this context, digital accessibility refers to equitable opportunity to the same education for every student via the use of technology, in and out of school.

Focus Area 1: Ensuring Connectivity		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Messages**
1. Is the school's current wireless network infrastructure robust enough to support the PDLP?	Schools could review current wireless infrastructure to ensure that students can leverage on the school's network for learning using their PLDs. a. Wireless network coverage areas ● Schools with SSOE2 provision will have specific school-defined learning spaces with network coverage. For ad-hoc events like learning trails, which extend into areas of school with no coverage, school could further expand coverage areas using mobile routers. ● For programmes outside of school alternative Wi-Fi solutions (e.g. Wireless@SG, mobile routers etc.) can be considered. b. Network bandwidth Schools could have an estimated number of concurrent device connections for each access point and conduct network tests to check if allocated bandwidth is sufficient for whole-school's use.	Desktop Engineer to work with Network Engineer and resolve wireless Network issues. Use alternative Wi-Fi solutions (e.g. Wireless@SG, mobile routers etc.) to provide internet access for areas without wireless network.
2. Are students able to access the internet at home?	Schools could ascertain if students have access to the internet from home. For students on MOE FAS, application for home broadband can be made through IMDA Home Access Programme. Annex 3-4: Infrastructure Checklist	Ensure that students are able access the internet at home for learning using PLDs.

Focus Area 2: Providing Access to Resources and Tools		
Guiding Questions and Considerations	**Suggestion & Resources**	**Rationale**
1. How can schools ensure that students	In setting up a seamless online environment, schools would need to consider the following:	Ensure that students have ease

have ease of access to the designated resources?	a. Activation of Student iCON email addresses This could be required for registration into DMA and other accounts. This can also be a possible mode of official communication with the students. Do note that the collection and storage of students' email addresses should be treated with confidentiality. Access to such information should be kept within secure platforms (not on public cloud) and limited to relevant staff only. b. Work with ITD for seamless login to PDLP@SSOE during onboarding of PLDs. c. Prepare virtual learning environment Curate a list of commonly-used software/applications and ensure students have adequate access for a seamless learning experience, e.g. Google Classroom, Grammerly etc.	of access to resources and tools used for lessons.
2. How can schools support students in managing their digital learning more efficiently?	With a PLD, students will be able to leverage on the various productivity tools to: a. Manage time/ tasks/ ideas b. Collaborate with others c. Create digital products School PDLP team could consider the following approaches to provide students with information or skills: a. Conduct a Device & Software Familiarisation Programme for students at the start of PDLP b. Assign SLS lessons on Productivity Tools for student self-directed learning or Just-in-Time (JIT) learning. c. Conduct ICT-related post-exam programme Annex 3-5: SLS Lessons on Productivity Tools and Digital Literacies	Equip students with knowledge on use of productivity tools to truly harness the affordances of their PLDs. Level-up student digital literacies for teachers to integrate technology without worry of student's capabilities.

3.3. DIGITAL SECURITY AND SAFETY MANAGEMENT

Creating a safe digital environment for students will nip many issues that may arise. However, students should be able to make careful and well-considered decisions and take responsibility for their own well-being in cyberspace to develop as responsible digital learners.

Focus Area 1: Establish Structures and Processes for Safe Use of PLDs		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Messages**
1. What is the common understanding of acceptable and appropriate usage of the PLD?	Schools should establish a common understanding of acceptable and appropriate use of the PLD. A more educative approach in engaging students on the use of PLDs is recommended. Schools can leverage on existing resources to guide students in the use of PLDs: a. Student Kit on Cyberwellness and Learning with a Personal Learning Device To guide students on using technology and their PLD in a respectful and responsible way b. PDLP Student Device Information Kit To inform parents and students on the after-sales service provided by the relevant device contractor and SOP for reporting device issues c. Student Handbook To articulate the acceptable use of the PLD and school ICT resources as part of the school rules and regulations as per other school rules for special facilities.	Establish common understanding of acceptable and appropriate use of the PLD.
	Schools can also position this common understanding of acceptable and appropriate use of the PLD as a set of guidelines using an Acceptable Use Policy (AUP). The AUP can be incorporated into the school's Student Handbook and should not require students' and/or parents' signature.	Set aside common time for all students to go through the AUP so that expectations are consistent.
2. How do schools track and remedy errant behaviour?	With all precautions taken, there will still be possibilities of errant behaviour. School could consider the following actions: a. Keep a log of device's MAC address/ IMEI number as well as product number as part of asset management. This can help in tracking the source of errant behaviour b. Set up a strong support system for students involved in cyber issues	Establish how errant behaviours will be treated.

	c. Use data from DMA (for example, data for web content filtering include URLs accessed on the PLDs, date and time of the access and student profile) to tease our potential problems (See Chapter 3.1) Annex 3-6: Guidelines on Acceptable Use Policy (AUP) Implementation Annex 3-7: Acceptable Use Policy (AUP) – Revised 2021 [Sample]	

Focus Area 2: Establish Effective School-wide Cyber-Wellness Practices		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Message**
1. What are the key enablers to guide school in the planning and implementation of a holistic school-wide CW education effectively?	Putting a personal learning device (PLD) in the hands of the students is empowering, but there is a need to guide them in using the device and technology in a responsible way, paying attention to cyber wellness. The implementation of a holistic school-wide Cyber Wellness (CW) education for students is important. The CW Planning and Implementation Guide 2021 takes reference from CCE 2021 and is organised around five key enablers to help schools implement CCE and CW effectively. The Guide is not meant as an evaluation tool but as a set of considerations for School Leaders and the Student Development Team (SDT), which includes the HOD CCE, and CCE or CW teacher leaders or coordinators to facilitate planning and discussions. The five key enablers highlight five key aspects of a school's operating environment that contribute to effective school-wide CCE and CW practices. The enablers are inter-related and often implemented in connection to one another. Schools may refer to the following resources as a guide. Annex 3-8: CW Key enablers Annex 3-9: CW Planning and Implementation Guide 2021*	Establish a holistic CW education by considering the 5 key enablers.

3.4. LEARNING ENVIRONMENT ENHANCEMENT

With the introduction of PLDs into the classroom, routines will be needed to help teachers and students accomplish day-to-day tasks. Routines also help to create smoother transitions between activities. The physical classroom can also be reconfigured to enhance the use of PLDs.

Focus Area 1: Establishing Routines		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Messages**
1. What school-wide routines can be put in place?	In ensuring that students have access to a PLD or a replacement device for lessons, schools will have to put in place a set of routines for the students. For example a. IT support related routines (e.g. What students could do if devices fail in the middle of a lesson or at home? Where do students go to loan a replacement device? etc.) b. Routines for transition between learning spaces (See Chapter 3.1.) c. Routines for Home-Based Learning with PLD (e.g. attendance-taking etc.)	Establish a set of school-wide routines (SOPs) to help in managing day-to-day operation.
2. What classroom routines can help enhance learning?	Where possible schools should create a common set of classroom routines to guide student-behaviour and teacher-led instructions. There could also be subject specific routines (e.g. use of PLDs in a Science Lab, use of translators in language lessons etc.). Annex 3-10: Routines Kit	Establish a set of classroom routines to help enhance learning.
Related Professional Development Support: **HOD ICT Workshop 2: Learning Environment (School-wide Routines)** [Compulsory] For HOD ICT, ICT Manager Outcome: Develop structures and processes to create a safe and seamless learning environment for PLD		

Focus Area 2: Reconfiguring the Physical Learning Environment		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Message**
1. How can the physical classroom layout be reconfigured to facilitate learning plans such as: ● Group-work ● Pair-work ● Learning corners ● Presentation	Schools could consider moving beyond the traditional classroom setup. Consider the learning plans and reorganize classroom space where necessary. Desks can be set up: a. In clusters to allow for group-work or learning corners b. In U-shape to allow for screen monitoring School could explore wireless presentation solutions (i.e. Chromecast, Apple TV) for seamless presentations.	Reconfigure the classroom layout to magnify the effects of learning.

4. PROVIDING CURRICULUM LEADERSHIP FOR TECHNOLOGY INTEGRATION

With the changing context of learning in this digital age, leveraging the affordances of technology to develop the future-ready learner through the curriculum has become even more important than before. e-Pedagogy enables the transformation of teaching and learning practices to develop the future-ready learner in a blended learning environment with PLD. Curriculum leaders need to understand the learning experiences that will develop students as future-ready learners. As a result of the shifts in students' learning experiences, curriculum leaders would have to review their department vision, programmes and practices to achieve envisioned student outcomes enabled by PLD.

4.1. CURRICULUM PLANNING

Focus Area 1: Integrating Technology into Curriculum		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Messages**
Student Learning Outcomes 1. Are learning outcomes inclusive of those that define future ready learners?	Curriculum leaders could: a. Review their learning outcomes to include outcomes such as self-directed learners and connected learners	Context for learning has changed with PLDs and blended learning as part of normalcy thus the need to review learning outcomes and reframe the pedagogical practices.
Student Learning Experiences 2. What are the possible learning experiences that will bring about the envisioned student outcomes in a learning environment with PLD?	b. identify different student learning experiences that will develop them into future-ready learners with e-Pedagogy and PLD in a blended learning context	Use e-Pedagogy to guide design for a variety of learning experiences enabled by PLD.
Existing Practices 3. What existing department practices and programmes that are aligned to the envisioned student outcomes of a future-ready learner?	c. review department's current state by examining: ● how the student learning outcomes are achieved progressively across the different grade levels; and ● if there are new ways of assessment for learning with PLD that promote more self-directed learning; and ● what classroom routines must be put in place for effective use of PLD	Integrate processes to monitor the implementation of changed teaching and learning practices a learning context with PLD.

Changed Practices	● opportunities to design for learning in both the physical and digital environments	
4. What practices and programmes need to change to bring about the envisioned student outcomes? (pervasiveness and magnitude of practices and programmes)		
	d. articulate how teachers can leverage e-Pedagogy to design, facilitate and assess learning	
	e. develop teachers to review data and refine lessons	
5. How will HODs IP document these changed practices?	f. coach and role-model the use of e-pedagogy with PLD.	
	g. revise practices and programmes through the department's work plan and schemes of work.	

Related Professional Development Support:

HOD IP Workshop 1: Technology Integration into Curriculum Planning
[Compulsory] For HODs IP, Teacher Leaders
Outcome: Integrate technology into subject discipline in a learning context with PLD through curriculum planning

4.2. QUALITY CURRICULUM DESIGN

Focus Area 1: Designing Quality Lessons		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Message**

1. What are the opportune areas for the department to leverage the use of PLDs?
 	
2. How would Curriculum Leaders use the SLS Pedagogical Scaffold as a design tool to guide teachers in designing learning experiences enabled by PLD?
	Curriculum Leaders could consider how a learning environment with PLD can be leveraged to:
	a. develop future ready learner in context of subject discipline
	    E.g. process skills like perspective taking, hypothesis validation etc.
	
	b. design learning experiences with the active learning processes.
	
	c. facilitate learning interactions with technology, student-content, student-student, student-teacher, student-community.
	    E.g. student-student interactions through peer review/comment, student-
		Use SLS PS as a set of considerations to guide design and provide feedback to teachers.

3. How would Curriculum Leaders use students' work to guide discourse with teachers to design learning activities in the learning context with PLDs?	expert interactions through video conference etc. d. enhance assessment by making students' learning visible and use students' works and data. E.g. providing immediate feedback to students, allowing for multi-modal student artefacts, leveraging assessment data to review teaching and learning. Annex 4-1: e-Pedagogy Courses and Micro Learning Units (MLUs) on OPAL2.0 Annex 4-2: Resources on e-Pedagogy	

Related Professional Development Support:

HOD IP Workshop 2 - e-Pedagogy: Lesson Design for Active Learning with Technology
[Compulsory] For HODs IP, Teacher Leaders
Outcome: Develop competency to coach teachers in the design of technology-enabled learning experiences guided by e-Pedagogy

HOD IP Workshop 3 - e-Pedagogy: Giving Feedback for Quality Lesson with Technology
[Optional] For HODs IP, Teacher Leaders
Outcome: Develop competency to provide feedback to lesson design using the Criteria for Quality Lesson Design

5. SUPPORTING PROFESSIONAL LEARNING

Teachers need to be supported as they embark on this journey of teaching in a changing learning context. They need to be encouraged to embrace these changes and make the necessary modifications to their instructional practices. SSDs should plan their school professional development roadmap for teachers with reference to SkillsFuture for Educators (SFEd). e-Pedagogy is an area of practice that the SSD should plan for to enhance teachers' competencies in harnessing technology to deepen student learning in the learning context with PLDs.

Before planning professional development (PD) programmes for the teachers, it is important to have an understanding of the challenges faced by teachers. Apart from the need for e-Pedagogy competencies, teachers may also have concerns on classroom management (e.g. students become easily distracted) or technical competencies (e.g. managing different platforms/ devices simultaneously). Work with the teachers to help equip them with the necessary confidence, knowledge, skills and attitudes.

5.1. ALIGNMENT OF PROFESSIONAL DEVELOPMENT (PD) PLAN

In planning the school's directions for the PDLP, it is important to identify the necessary knowledge and skills that a teacher needs in order to achieve the learning outcomes in the technology plan. The school's professional development plan should support the school's vision for technology use and can take reference from SkillsFuture for Educators Levels of Practice for e-Pedagogy and the Learning Practices document.

Focus Area 1: Develop Training Road Map		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Messages**
1. What are the key aspects to consider in developing the school training road map in connection with the PDLP Learning Practices?	Schools could consider how to ride on the PDLP initiative and map the school training road map to support the levels of practices in e-Pedagogy under SkillsFuture for Educators.: a. clear articulation of teacher practices for PDLP. b. professional development of all teachers' competencies and skills in achieving at least a 'Proficiency' level of practice for e-pedagogy. c. development of certain teachers, teacher leaders and HODs to the accomplished and leading level of e-pedagogy. d. align department learning needs in integrating technology into curriculum planning and design to e-pedagogy with PLD.	Align school PD plan to vision for technology use. Develop all teachers to the proficient level of e-Pedagogy under SkillsFuture for Educators.
2. What resources can be tapped on to build teachers'	Schools could consider including the mandatory online modules courses on e-pedagogy on OPAL 2.0 for teachers and the	

competencies to reach SFEd proficiency level?	baseline PDLP workshops for Middle Managers into the school training road map.	
3. What can be done to help all teachers reach the SFEd proficiency level?	Schools could consider encouraging all teaching staff to join the online networked learning community, the Singapore Learning Designers Circle (SgLDC) and learning together as a community and with the community in designing lessons with technology. Schools could consider including the curated online units on e-pedagogy in SgLDC into the school training road map in accordance with staff learning needs or department learning needs. Annex 2-1: Resources for PDLP Learning Practices Annex 4-1: Resources on e-Pedagogy online modules on OPAL2.0 Annex 5-1: Infosheet on SFEd (e-Pedagogy) Annex 5-2: Resources to join SgLDC (Facebook)	

5.2. DEVELOPMENT OF STAFF COMPETENCIES

The readiness in embracing the use of ICT in teaching is likely to be uneven within school. This is where peer support can help to address the needs of different profiles of teachers. Effective and innovative use of PLDs could also be celebrated. Schools could initiate suitable platforms to recognise teachers for their efforts and for them to learn from one another.

Focus Area 1: Addressing Staff Learning Needs		
Guiding Questions and Considerations	**Suggestion & Resources**	**Key Message**
1. What are the teachers' knowledge and skills to build?	In profiling staff learning needs, school could leverage on: a. SkillsFuture for Educators Levels of Practice for e-Pedagogy b. PDLP Learning Practices document	Develop a tiered staff learning roadmap to cater to different competency levels.
2. What is the current competency level of the teachers with respect to the knowledge and skills?	School could profile staff, analyse their competencies according to the level of practices in e-Pedagogy and customised staff learning road map based on profile. a. Identify the competencies that teachers lack in when using technology and	

| | prioritise them in the PD plan. |
| | b. Provide structure for peer support to enable staff to support and mentor one another e.g. pairing of teachers skilled in content, pedagogical, and assessment practices but new to the use of ICT with beginning teachers skilled in use of ICT to create a multiplier effect. | |

Focus Area 2: Structuring PD By Role Profile

Guiding Questions and Considerations	Suggestion & Resources	Key Messages
1. How does school design PD for the different role profiles of staff?	Schools should develop a. <u>Middle managers</u> to be curriculum leaders with technology • Provide time and space for HODs IP & HOD ICT to have discussion/ conversation about integrating technology into curriculum • Provide training or support for HODs and teacher leaders in coaching teachers for e-Pedagogy • Identify key drivers (SH/ST/LT) in each department to drive profession discourse on PLD through subject-based PLC. b. <u>Teachers</u> as designers and facilitators of teaching and learning with technology • Guide and monitor teachers to complete OPAL modules/ online learning on e-pedagogy. • Provide a safe environment for teachers to be coached by HODs/ teacher leaders • Encourage teachers to join SgLDC to have further conversation with the greater community	Align the professional development needs and competencies to the role profile in leading technology use. Provide a safe environment for teachers to develop their competencies.

Focus Area 3: Creating PD Platforms/ Structures

Guiding Questions and Considerations	Suggestion & Resources	Key Messages
1. What are PD platforms/ structures that the school can put in place?	Schools could leverage existing platforms/structures for staff to share and learn about teaching and learning with technology. At the school level, schools could build a culture of collaborative professionalism and encourage staff to share their classroom practices with technology. a. Schools could factor in professional learning sharing on classroom practices during staff meeting b. Promote bite-sized sharing on use of technological tools in T&L. c. Provide opportunities for teachers to conduct or attend Open Classroom. d. Structured staff training day/PD day to include sharing on T&L with technology. e. Plan for school-wide conversation/training on Classroom Routines (See Chapter 3.4) & Cyber Wellness. (See Chapter 3.3) At the department level, a. Identify ICT Champions within each department for sharing of technological support/brown bag sessions (for the school community) b. Provide opportunities for departments to share their good practices for PLD during department meetings or subject PLT. c. Curate good practices and facilitate open classroom discussions on use of e-Pedagogy and PLD. d. Create professional learning teams to design lessons collaboratively Annex 5-3: Facilitation Toolkit to facilitate lesson design process	Tap on/ build various PD platforms and structures to engage all staff and meet the varying PD needs. Ensure that there is a holistic view on the use of technology when integrating technology into curriculum, pedagogy and assessment. e.g. Classroom management routines, Cyber wellness issues, IT self-help, productivity tools etc. Encourage teachers to model their own PD learning as that they would like to design for students to be more self-directed and collaborative.

6. LIST OF ANNEXES

Below is the list of annexes. You can access the annexes from the ETD Intranet Page:
http://intranet.moe.gov.sg/etd/Pages/PDLP_starter_kit.aspx.

Annex 2-1	Resources for PDLP Learning Practices
Annex 2-2	Resources on Technology Planning
Annex 2-3	Resources on Engaging Staff
Annex 2-4	Resources for Guiding Students
Annex 2-5	Resources on Partnering Parents
Annex 3-1	Personal Learning Device (PLD) familiarisation for students
Annex 3-2	Device care guide for students [Sample]
Annex 3-3a	ICT Equipment Loan Policy and Form [Sample]
Annex 3-3b	Loan of School-Owned PLD – Daily Check-In & Out [Sample]
Annex 3-4	Infrastructure Checklist
Annex 3-5	SLS Lessons on Productivity Tools and Digital Literacies
Annex 3-6	Guidelines on Acceptable Use Policy (AUP) Implementation
Annex 3-7	Acceptable Use Policy (AUP) – Revised 2021 [Sample]
Annex 3-8	Cyber Wellness (CW) Key enablers
Annex 3-9	Cyber Wellness (CW) Planning and Implementation Guide 2021
Annex 3-10	Routines Kit
Annex 3-11	DMA Overview (Key Functions) (To be updated)
Annex 4-1	e-Pedagogy Courses and Micro Learning Units (MLUs) on OPAL2.0
Annex 4-2	Resources on e-Pedagogy
Annex 5-1	Infosheet on SFEd (e-Pedagogy)
Annex 5-2	Resources to join SgLDC (Facebook)
Annex 5-3	Facilitation Toolkit to facilitate lesson design process