Republic of the Philippines
Department of Education
REGION VI – WESTERN VISAYAS
DIVISION OF AKLAN

September 2, 2021

DIVISION MEMORANDUM
No. 334, s. 2021

OFFLINE DIGITAL DISTRIBUTION MODALITY USING PROJECT MAC (MODULE ACCESS CARDS)

To: **Chief Education Supervisors**
Education Program Supervisors/Coordinators
Public Schools District Supervisors
Heads of Public Elementary, Secondary and Integrated Schools
All Others Concerned

1. This is to inform the field on the implementation of DepEd Aklan's **Project MAC (Module Access Cards)** for the implementation of offline digital distribution of modules.

2. Attached are the project innovation charter and the tutorial on the use and implementation of the project. An online webinar will be held at the DepEd Tayo Aklan Facebook Page on September 8, 2021, 9AM to further help the schools in the implementation of the project. School heads and teachers interested to implement the project are urged to attend.

3. Personnel concerned are encouraged to use the app for easy distribution of learning resources to the learners through their device, substantially minimizing the time, effort, and expenses consumed for printing.

4. Immediate and widest dissemination of this Memorandum is desired.

MIGUEL MAC D. APOSIN EdD, CESO V
Schools Division Superintendent

Enclosure: None
Reference: None
To be indicated in the Perpetual Index
under the following subjects:

CURRICULUM	**EDUCATION**	**SCHOOLS**	**TEACHERS**
FORMS	**MEETING**	**REPORTS**	

/mqt

Poblacion, Numancia, Aklan
Tel/Fax No.: (036) 265 3744 | (036) 265 3737 | (036) 265 3738 | (036) 265 3740 | (036) 265 3741
Website: http://www.depedaklan.org
Email Address: aklan.1958@deped.gov.ph

1093

DepEd
Divis
REL
Date: AUG 2021
Time: 2:35pm
Signature:

Republic of the Philippines
Department of Education
Region VI – Western Visayas
DIVISION OF AKLAN
Numancia, Aklan

Title of Innovation: **Project MAC** (Module Access Cards)
Innovation Category: **Curriculum and Instruction Delivery**

Name of Innovator: **Mr. Mahnnie Q. Tolentino**
Project Development Officer II
LRMDS, Curriculum Implementation Division

Date of Implementation: May 2021 – May 2022

Contact No.: 265-3744 | 265-3737 | 265-3738 | 09123146858

OVERVIEW:

The COVID-19 pandemic has forced the Department of Education and its schools to adapt to distance education. As the schools were preparing for the school year, the agency released guidelines on the implementation of distance education to the learners (DM-CI-2020-00162: Suggested Strategies in Implementing Distance Learning Delivery Modalities (DLDM) for SY 2020-2021).

The Division of Aklan adopted the Printed Modular Distance Learning (PMDL) wherein the division and its schools will print modules for the consumption of the learners. The said modules are compliant to the standards set by the Bureau of Learning Resources and follows the Most Essential Learning Competencies (MELCs).

The said modality has created numerous strains on the delivery of learning resources, particularly on time. The agency's united efforts to ensure the delivery of modules to the learners on time has yielded several other problems as well, one of which is the effort and time spent by school personnel, particularly the teachers, in printing the said modules. The said problem has caused many teachers to stay late in their stations to print the modules. Therefore, depriving learners the needed time from the teachers to perform academic interventions to improve their learners' performance.
The printing equipment in the schools also gave up to the volume of printing, with many schools reporting broken printers within a matter of months. This has created further strain in the timely delivery of modules, as the teachers and school heads are forced to find other ways to print, including using their own printers, hire personnel, procure for printing services, and/or staying up late to finish the printing.

To address this issue, other modalities must be used to allow the teachers to have more time to perform academic interventions with the learners while maintaining the timely delivery of resources. This modality is already available. The previously referred memorandum also advocates the use of Digital Modular Distance Learning (DMDL) which allows electronic gadgets to access the modules.

However, one of the possibilities that may contribute to the failure of this modality is the number of modules that is placed inside the gadgets, which can lead to the learners to experience difficulties in accessing the right module. The Quarter 1 Grade 1 Mother Tongue Based-Multi-Lingual Education (MTB-MLE) modules alone have 38 modules. The total of Grade 1 modules for all subjects for the first quarter is 87, give or take a few. The sheer number of modules can easily overwhelm the learners and may result to them not using the modality at all.

Therefore, the LRMDS office proposes to develop a system that will lessen the printing load of the teachers and help the learners to easily access their modules. This type of system can help in ensuring that the teachers will have more time to attend to their academic interventions, and the learners to easily access their modules without them digging through the voluminous number of modules in their gadgets.

INNOVATION DESCRIPTION:

The schools of DepEd Aklan are using the Printed Modular Distance Learning modality. This modality has resulted to many teachers to spend an inordinate amount of effort to ensure the delivery of modules to the learners on time. This has resulted to lesser time in improving the learners' performance through academic interventions.

The Division of Aklan' LRMDS Unit hereby proposes to launch **Project MAC (Module Access Cards)** aimed to improve the module production time of the schools and to ensure that the learners will have an easier time accessing them, no matter how many were saved in their devices. The proposed project is an offline application that will be able to access the learning resources by scanning a module access card (MAC) generated by the teachers.

The project will be done in three (3) phases between May 2021 to July 2021. Many of the materials are already in place, and the softwares that will be used are open-source, requiring no cost at all on the development.

INNOVATION STATEMENT:

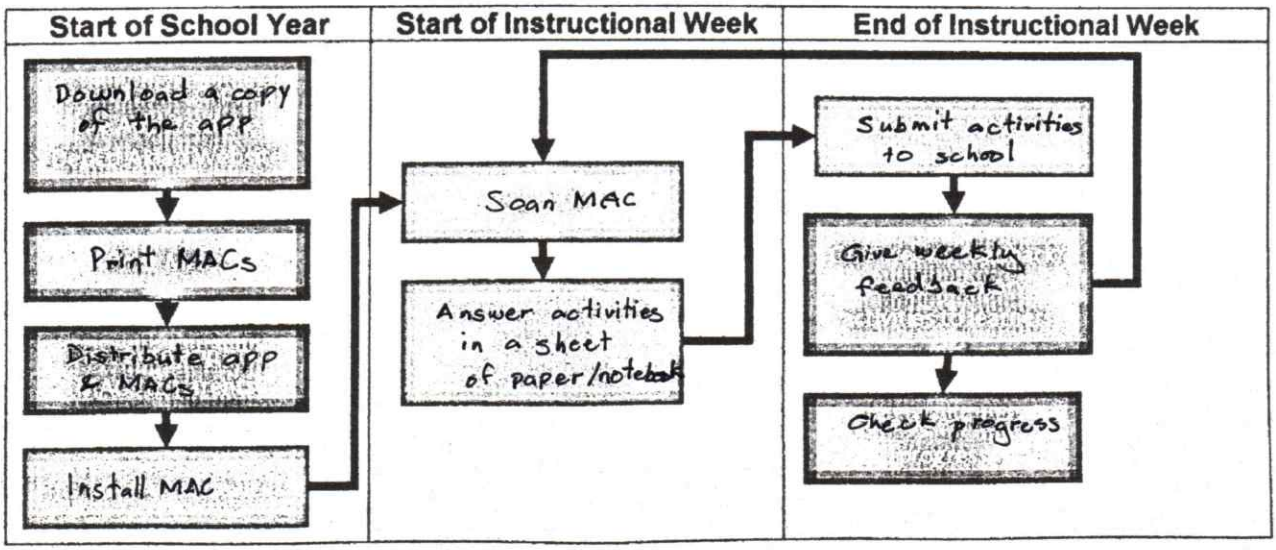
Upon the full implementation of **Project MAC,** the schools in the division will gradually reduce the time and effort it spends in printing the learning resources, giving the teachers back their time to perform their duties, specifically in providing academic interventions to their learners.

Specifically, the project aims to:

1. Improve the distribution time of modules to the learners;
2. Lessen the printing load of the teachers;
3. Provide the learners a system to easily access the loaded modules; and
4. Allow teachers to focus on learner-centric interventions to improve learners' performance.

IMPLEMENTATION PROCEDURE:

Process Flow: The following is the graphical representation of the process to the school upon the project's completion and implementation:



Project Management: The project will have three (3) phases, all handled by the proponent: the data gathering phase, development phase, and the implementation phase. The project aims for the schools to perform the following upon the completion of the project:

1. The teachers will download and prepare the modules for uploading to the learners' devices.
2. The teachers will create QR codes that contains the address of the module. The QR Codes will then be saved as documents. These collection of QR Codes (MACs) are now going to be used to scan the modules from the app.
3. The school must then prepare the app and the modules (saved in a computer), and the MACs (printed) before the parents' orientation.
4. At the start of the school year, the teacher/s are advised to orient the parents to download or give a copy of the application (APK file) to the parents. The parents will then install the app to their phones/tablets.
5. The learner will then use the MACs to access their modules through the app. Activities will then be submitted by the parents to the school.
6. Monitor the use of the app and its relevant effects to teacher time and school expenses.

Project Timeframe: Project MAC shall have a maximum implementation period of twelve (12) months from the official start-up date which is established to be within three (3) months from the official communication of the start-up of the project. The said 3-month period will cover the preparation of information to be entered, development of the application and website, among others.

The final evaluation of the project will start within a maximum of 1 month immediately after the end of the implementation period or upon completion of the project, whichever is earlier.

Work Detail

Tasks	Schedule	Deliverables
A. Preliminary Analysis	Week 1	
B. Conversion of test modules to digital format	Week 2	PDF files of test modules
C. App interface design	Week 3-4	App interface
D. Plugin testing	Week 5	
E. Development of mobile application	Week 5-8	Mobile app
F. Mobile app testing	Week 9	Fully tested mobile app
G. Debugging	Week 10	Fully debugged mobile app
H. Publishing of website and app online	Week 11	Online project website and tutorials
I. Implementation	Week 12	Division memorandum, Webinar schedule, and completed webinar on the use of the project
J. Evaluation	Month 12	Accomplished evaluation tool

Risk Assessment

Risk	Likelihood (1-5)	Severity (1-5)	Risk Score (1-25)	Category	Action
No internet connection to create MACs	1	3	3	**Acceptable risk**	**Monitor**
Repeated MACs	1	2	2	**Acceptable risk**	**Monitor**
No printed MACs	1	3	3	**Acceptable risk**	**Monitor**
Device can't accept OTG drives	2	4	8	**Intermediate risk**	**Take Action**
Scan doesn't retrieve module	2	5	10	**Intermediate risk**	**Take Action**

Response Strategy

Risk	Preventive Action	Corrective Action
No internet connection to create MACs	Ensure availability of internet in the area. Engage with other schools/teachers to help in the creation of MACs	Find a spot/computer to generate MAC. Ask for help from a teacher/school with better connectivity to help in generation of MAC.
Repeated MACs	Check/Scan MACs before release	Create MAC and distribute as soon as possible to parents. Provide parent/s with printed module.
No printed MACs	Check MACs prior to release.	Generate and print MACs. Provide parent/s with printed module.
Device can't accept OTG drives	Release app requirements to parents prior to release.	Attach gadget to school computer for direct copying of modules and app to it.
Scan doesn't retrieve module	Check/Scan MACs before release.	Check Android version (Must be Android 10 and below). Advise parent/s to install to another gadget. Provide parent/s with printed module.

Resource Utilization: The first and second phase of the project will not produce any expenses since the personnel are from the LRMDS office and the software used are open-source.

The third phase (Implementation) however, will yield the following expenses:

Quantity	Particulars	Cost	Amount	Source
10 pax	Food for members of the support and development team during the one-day webinar	600.00	6,000.00	Division HRTD/ MOOE

Moreover, the schools which will implement the project will have the following cost (for 1 Quarter):

Factors:

School is using Epson Printers

Grade 4-6 (300 learners for 8 learning areas) = 8 sets of MACs per learner

Quantity	Particulars	Cost	Amount	Source
5 reams	1. Long bond paper (sub 20)	250.00	1,250.00	School MOOE
3 pieces	2. USB Data cable for Android (Micro USB)	50.00	150.00	
2 pieces	3. USB Data cable for Android (Type C)	50.00	150.00	
1 bottle	4. Epson Ink (black)	250.00	250.00	
1 bottle	5. Epson Ink (cyan)	250.00	250.00	
1 bottle	6. Epson Ink (magenta)	250.00	250.00	
1 bottle	7. Epson Ink (yellow)	250.00	250.00	
TOTAL			**2,550.00**	

Progress Monitoring: The division and the schools concerned will monitor the expenses for a class using PMDL against a class using DMDL. The school will also monitor the time spent by the teachers for class interaction and intervention to a PMDL class and a DMDL class.

This data will be retrieved every end of the quarter for the school to make adjustments. The monitoring form will be released by the division through a division memorandum.

INNOVATION OUTPUT/OUTCOMES

Outputs/Outcomes	Beneficiary/ies
Easy distribution of modules	Teachers, School Heads, Learners
Less printing	Teachers, School Heads
More time for intervention	Teachers, School Heads, Learners
Easy access to modules	Learners

SUSTAINABILITY PLAN

This project is created to further explore the DMDL modality, which will further improve the teachers' engagement to the learners and intervention time. Upon the end of the pandemic, this project will be used to deliver the textbooks digitally to the learners, which will close, and eventually eliminate the shortage of textbooks in the schools.

PREPARED BY:

MAHNNIE Q. TOLENTINO
Proponent

RECOMMENDING APPROVAL:

RAFFY F. PALLER, PhD
SEPS P&R

APPROVED:

MIGUEL MAC D. APOSIN EdD, CESO V
Schools Division Superintendent

MODE OF VERIFICATION

Appendix A:	Project MAC Tutorial
Appendix B:	Project MAC Website (screenshot)
Appendix C:	Project MAC App (screenshot)
Appendix D:	Project MAC Video Tutorials (screenshot)

DepEd Aklan MAC (Module Access Cards)

What is it?

The DepEd Aklan MAC (Module Access Cards) is an innovation initiated by the DepEd Aklan LRMDS Section under Officer-In-Charge, PDO II Mahnnie Q. Tolentino, who also served as the programmer and app developer.

The application allows the learner to access modules, activity sheets, storybooks, and even textbooks by scanning a MAC, or Module Access Card. It is a pre-determined address of the learning resource in the device encoded through a QR (Quick Response) Code.

The project aims to easily distribute learning resources to the learners through their device by accessing the app and the MACs.

What are the Requirements

The app will run on any Android device, phone or tablet, with the following specifications:

1. Android version 5.0 (Lollipop) and above
2. OTG (On-the-Go) enabled

Why use it?

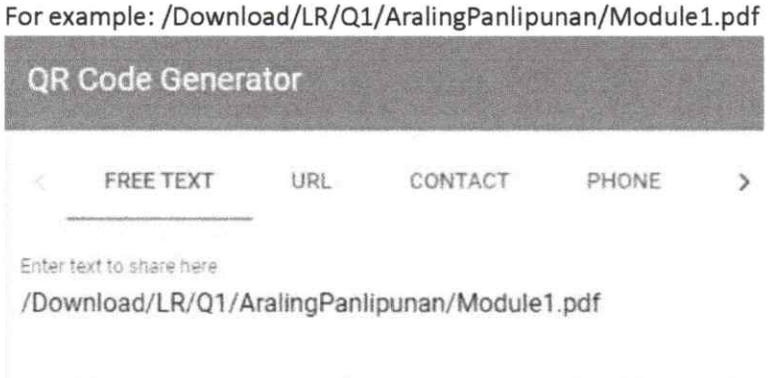
1. The app will allow easy access to the modules. Printing will not be necessary, therefore less effort and time wasted to the teachers and the school.
2. The teacher can be flexible in the presentation of his/her lesson. He/She can choose what LR can the learner use and access.
3. The number of LRs that can be uploaded is limited only by the space for each device. Therefore, the teacher can upload all modules up to the 4th quarter, and just ask the learner to open them through the MACs.

I want to teach using MAC. What should I prepare?

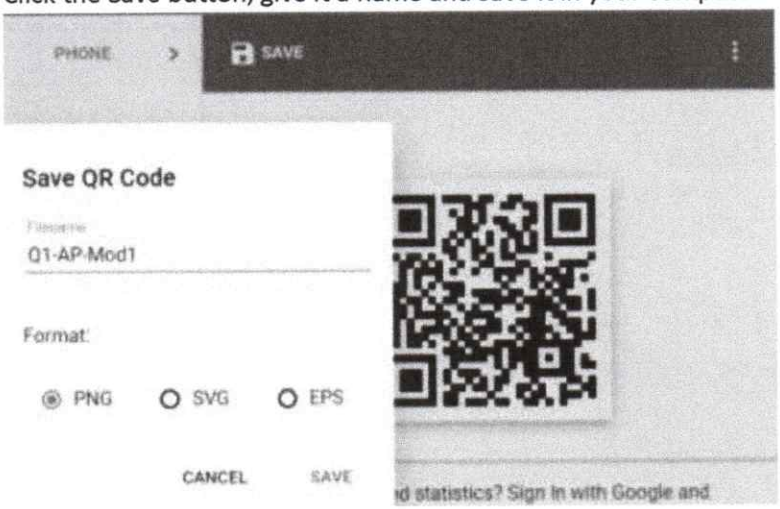
If you want more time to teach and less time to print, and if you think you can perform better as a teacher by concentrating on interventions instead of printing your modules, then MAC is for you! If you are interested to use MAC, please prepare the following:

A. Before the School Year Starts:

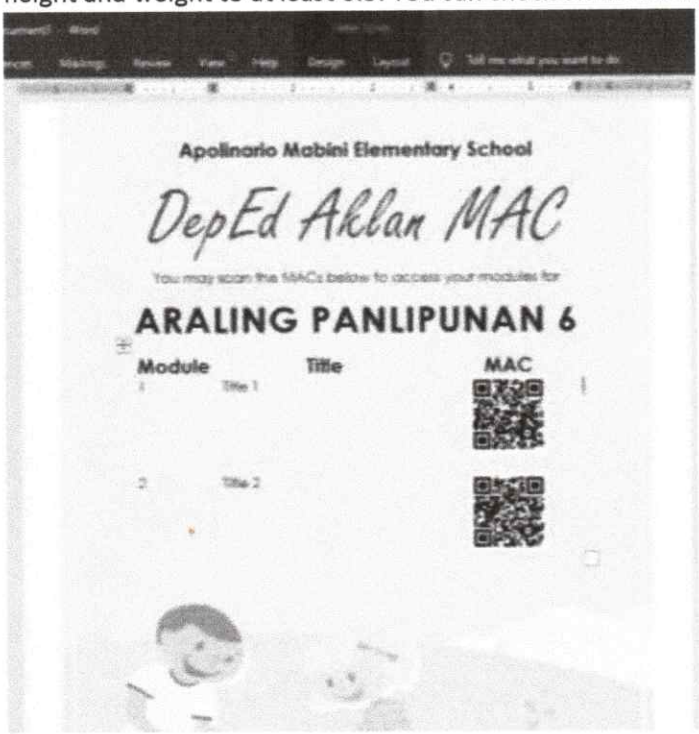
1. Download the app to your computer for distribution to the learners
2. Download the modules/LAS/other LRs that you will use for the period and save them in a folder named LR. The path should be, for example: D:\LR\Q1\AralingPanlipunan\Module1.pdf
3. Create MACs by going to https://www.the-qrcode-generator.com. Enter the path starting with /Download. For example: /Download/LR/Q1/AralingPanlipunan/Module1.pdf



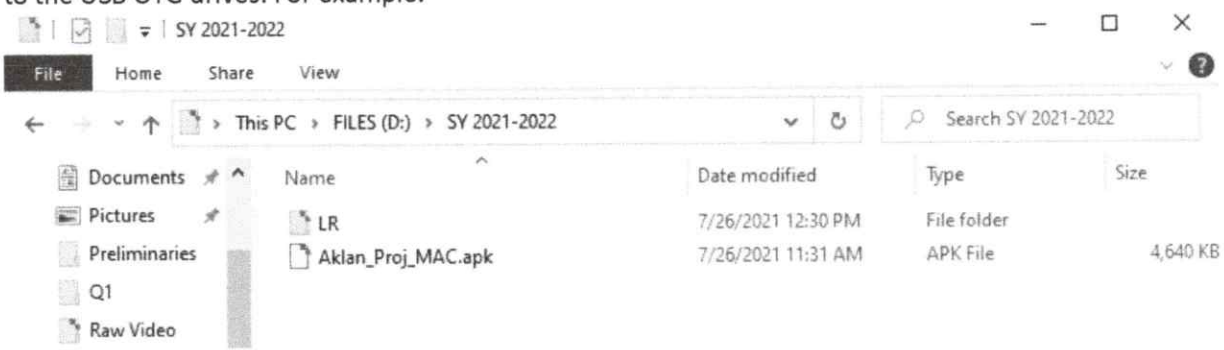
4. Click the Save button, give it a name and save it in your computer.



5. Open your Word processor, insert your MACs and add the Module names. You may add additional instructions to the parents/learners and you may design it according to your own choosing. Note: You may resize the MAC to 0.5 inches by 0.5 inches. Just right-click on the MAC and click the Size and Position. Choose the absolute height and weight to at least 0.5. You can check on the example below:



6. Print the MACs and save the app and the modules to an easily accessible area in your computer for copying to the USB OTG drives. For example:



B. Start of the School Year:

1. Copy the LR folder and the app to the USB OTG drives for distribution. Prepare the printed MACs for distribution as well.
2. Distribute the OTG drives and the MACs to the parents. Note: There may be devices that cannot access the OTG drives. Connect a data cable (the cable that connects the phone to the charger) from the phone to your PC and copy the LR folder and app file to the Downloads folder of the device.

Tips for Success

1. Prepare the MACs early. You will only do it at least once for the entire school year, depends on the number of modules you have prepared for the period. Print them and prepare at least 5% more in case the parent loses them.
2. Schedule an orientation to the parents on the installation and use of the MAC. It is better if you can demonstrate to them how to use it. Follow the steps at the MAC website (https://depedaklan.online/mac).
3. Choose the activities that can be done by the learners within the period and put them into a notebook. You may opt to ask the parents for two notebooks that will be switched every submission of the activities.
4. You may add videos as well into the OTG drives so the learner can see you teaching the subject. Remind the parents that you have added these videos so they can help their child to access them. Audio recordings are encouraged as well. Just put these additional LRs into a separate folder.
5. The app can also open storybooks. Save them as a PDF file, create a MAC for them and add them as supplementary material inside the LR folder.