Review of the SABIER MoodleBox Project

Funded by the Creative Commons Foundation

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Description of the project and Indicators

For this project the following indicators were defined:

1. **Creating, curating, sourcing OER** content that meets the needs of elementary students and is aligned with Ghanaian Education standards as well as South African standards. A special emphasis will be on incorporating materials edited and adapted for and translated into the local languages in addition to the use of English language materials. The courses will be openly licensed and shared via MoodleNet.
2. **Implementing the OER** content on open source MoodleBox software on a portable server that does not require internet access.
3. **Creating professional development** courses for teachers to support their implementation of the OER curriculum. These Prof Dev courses will be conducted on an open source Moodle system; the courses will be openly licensed and shared via MoodleNet.
4. By December 31, 2023, teachers at the **three schools** (two in rural Ghana and one in a township in the Western Cape, SA, will be participating in the ongoing professional development. Nomvuyo Mgoqi, who was an Education Specialist at the University of Cape Town, will be the lead teacher for professional development in the Western Cape with support from Kathryn Kure of the STEAM Foundation NPC. Peter Amoabil will be the lead teacher for both schools in Ghana with support from Dan McGuire of SABIER.

To reach these goals the following technical setup was chosen

- Central Moodle instance: For central content collection and delivery by simple backup and restore Moodle course. (https://sabier.moodlecloud.com/)
- Hardware: Using the standard MoodleBox setup based on Raspberry Pi .

Result

For this review, we analysed the courses on the central Moodle Instance and collected Feedback via survey from the involved teachers, where Peter Amoabil, Kanvilli Nuriya Primary School, Ghana and Nomvuyo Mgoqi, Khulisani Child Development Academic, South Africa answered.

Material: The courses we observed provide material and quizzes and forums. (https://sabier.moodlecloud.com/course/view.php?id=149).

This material is available in english and local languages, especially in isiXhosa (https://sabier.moodlecloud.com/pluginfile.php/11931/mod_resource/content/1/Abahlobo%20%281%29.pdf). This material is provided by SAIDE and marke das Creative Commons Attribution 4.0.

There is also one training course in creating courses using OER: https://sabier.moodlecloud.com/course/view.php?id=87

Implementation: It is confirmed, that the courses were carried out in all three schools throughout 2023 using the MoodleBox and the developed courses, which were developed by the leading teachers and supported by SABIER and SAIDE. Some images are attached to this report. In total around 100 Students were using the MoodleBox, where 65 are confirmed in the feedback from the teachers.

Especially Peter Amoabil, Kanvilli Nuriya Primary School, Ghana developed a more complex course design including course completion. This allows the teacher to follow up on learning results and can include the MoodleBox into their grading system.

At this moment, these courses are not deployed on moodle.net, because of resource challenges regarding reviewing the courses.

Professional development: On the cantral SABIER moodle, there is a collection of 26 courses related to professional development of teachers.
(https://sabier.moodlecloud.com/course/index.php?categoryid=30)

Based on the feedback, the following conclusion can be made:

The teachers and the students confirm a good learning experience using digital learning methods. There were no Usabilityproblems reported regarding the MoodleBox itself and also no issues regarding access fort he students.

Other positive aspects are the Substitution of textbooks, which may not be available at some schools.

Challenges

Teachers reported the availability of devices for students may be a challenge. Sometimes deviced needed to be shared amongst students.

Other than that, no challenges were encountered.

Image 1 Peter Amoabil - Kanvilli Nuriya Primary School, Ghana

Image 2 Peter Amoabil - Kanvilli Nuriya Primary School, Ghana

Image 3 Nomvuyo Mgoqi - Khulisani Child Development Academic, South Africa

Perspective

This very simple setup may allow teachers ans schools with even little ICT facilities and skills to use digital Learning interventions. For a large rollout these aspects should be taken in considerations:

Technical Maintenance: The Raspberry Pi uses SD Cards, which are sensitive to heat and have a certain life span. It would be very important to establish a technical support structure, which is capeable to repair broken boxes.

Device strategies: To consume the courses and content, end devices are necessary. Therefore, the provision of sufficient end devices is crucial. Strategies like BYOD, sharing or others need tob e taken in consideration, when developing courses, especially when it comes to 1:1 or 1:n interactions.

OER Material: OER Material is not always available in different languages. When choosing Material, it is important, that it is available in the destination languages.

Device context: Especially OER Content needs to be tested against the preferred devices, which may be mobile-first.

ANNEX

Answers to the Survey

First answer: Peter Amoabil, Kanvilli Nuriya Primary School, Ghana

How long or how often was the MoodleBox used in class?

We started using MoodleBox about a year and a half ago, when it was introduced to us by Dan McGuire from Sabier organisation. Since then, we have been using it to access OER materials in all subjects and also in the children mother tongue, the Dagbani. In Ghana, textbooks to schools have been a national problem, so the MoodleBox has really helped us to not only rely on textbooks that are not even available, but also to get our own OER resources aligned to the Ghana standards. We use MoodleBox in class every week for about two hours, where we can access the online courses and activities that are relevant to our curriculum and learning objectives. MoodleBox has enabled us to enhance our teaching and learning experience with more flexibility, creativity and collaboration.

Which subjects were supported by the MoodleBox? (if possible, add the links to the courses)

English, Mathematics, Social Emotional Learning and Ghanaian Language (Dagbani)

https://sabier.moodlecloud.com/course/view.php?id=149

How many students/schoolkids did access the MoodleBox (approximately)?

50

Which main benefits did you observe using the MoodleBox?

One of the benefits I observe about the Moodlebox, is that it provides a offline learning environment that can be accessed by the learners and teachers without relying on the Internet. This is very useful in Ghana here as 99% of schools are not connected to the Internet. Hence its ability for us to access OER content without internet is one thing I like about the Moodlebox.

What were the main challenges using the MoodleBox?

The main challenge is using the Moodlebox is insufficient wifi devices like Tablets,phones , laptops etc to acces the moodlebox. We have cases where we have to pair two children per a WiFi device to access the Moodlebox.

Second Answer: Nomvuyo Mgoqi, Khulisani Child Development Academic, South Africa

How long or how often was the MoodleBox used in class?

I used it for couple of months

Which subjects were supported by the MoodleBox? (if possible, add the links to the courses)

Languages (IsiXhosa and English)

How many students/schoolkids did access the MoodleBox (approximately)?

12

Which main benefits did you observe using the MoodleBox?

Every child had access to a reader. They had multiple opportunities to read and engaged in discussions

What were the main challenges using the MoodleBox?

Non thus far

Other comments

I see this approach as game changer in terms of exposing every child into learning materials and better learning.

Proposal

CC Grant Proposal (draft)

Summarize your proposed activity. Please identify what your deliverables will be by December 31, 2023. Please also identify how you will measure the success of your activity.

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Kathryn and Nomvuyo each have extensive experience leading teacher professional development in South Africa. Nomvuyo is an author of this book chapter on "Formative Assessment for Quality Environmental Learning in Natural Sciences Classrooms" and is a co-founder and a Principal of an elementary school in Langa township in the Western Cape. Peter founded and is the Executive Director of Rural Literacy Solutions, a Ghanaian nonprofit whose mission is to increase literacy and STEM education in rural Northern Region of Ghana. He has degrees from University For Development Studies,Tamale, Ghana and St John Bosco's Teacher Training College. Peter is a full time teacher at a primary school in Northern Ghana specializing in Basic Education curriculum. He is also the assistant head teacher of Kanvilli Nuriya Primary School. Dan has supported teachers in the use of OER with digital tools for more than twenty years.

Reflections on the Professional Development process, summaries of student learning growth, and recommendations for further professional development courses will be released as openly licensed documents by December 31, 2023. The deliverables will be reviewed by education researchers and analysts from the University of Graz, AT.

How would CC Open Education Platform funding help your activity?

CC Open Education Platform funding will help us pay stipends to the teachers and professional development providers and cover some expenses for adding additional technology to implement the open source software in the classrooms. All educational materials will be CC licensed and software will be open source.

Share any considerations or potential challenges you anticipate in completing your activity work. How will you overcome these challenges?

One of the biggest challenges will be the effective use of teacher time, which is always the case especially in K-12 classrooms. Initial professional development has already been initiated by SABIER

at one school in Ghana, and we will be able to apply lessons learned there with the teachers at the other two schools.

Additionally, there could be some challenges in creating the assessments in the local languages, isiXhosa for the Western Cape and Dagbani in the Northern Region of Ghana. Some texts exist in both languages at the appropriate grade levels, but teachers will need to create the assessments and do some translation of math and science materials. All of the teachers at the schools have expressed an eagerness to take on the challenge, though. OER materials for Instruction and assessment in English will also be included at the schools. English will be used for teacher professional development. All finished assessments and materials created will be Creative Commons licensed and shared via MoodleNet and other repositories.