LAC Reads Capacity Program

Final Report

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Abbreviations

DPG	Digital Public Goods
EDMU	Education Development Management Unit
EGL	Early Grade Literacy
ELP	Early Learners Programme
ICE	Instructional Content and Engagement
OER	Open Educational Resources
OECS	Organisation of Eastern Caribbean States
USAID	United States Agency for International Development
VLE	Virtual Learning Environment

1. Background

Since the onset of the pandemic, the Education Development Management Unit (EDMU) of the Organisation of Eastern Caribbean States (OECS) has supported the transition toward a distributed learning model. In doing so, the EDMU has instituted a regional content development strategy to provide learners in the Eastern Caribbean with high-quality, Open Educational Resources (OER). A key component of this strategy involves the development of a curriculum-aligned content repository.

In this context, Open Development and Education (hereafter referred to as 'we') was working with the EDMU to:

- increase the availability of curriculum-aligned OER for early grade literacy;
- provide evidence-based training on the use and adaptation of OER.

In line with the vision of the OECS' regional content development strategy, we focused on OER for pre-primary and primary-level students. The programme was structured in four phases:

- **Activity 1**: needs assessment to identify existing OER, resource gaps, and content housing requirements;
- **Activity 2A**: mapping OER for early grade literacy;
- **Activity 2B**: reviewing and testing OER housing options;
- **Activity 3:** categorisation and curriculum alignment of OER;
- **Activity 4:** capacity strengthening programme for teachers.

This document includes a summary of all activities (1, 2A, 2B, 3, and 4), emphasising developments since the Midterm Report. The Midterm Report details Activities 1 and 2A. This report, therefore, focuses on activities 2B, 3, and 4.

Here, we will build on the details contained in our work plan and report our approach to the remainder of this consultancy following the delivery of the Midterm Report. A package of programme outputs can be found in Appendix 1.

2. Needs assessment

This section presents a summary of the findings of the needs assessment from the Midterm Report. The aim of the needs assessment was to understand the educational resource gaps and learning objectives set out during distance learning. To conduct this assessment, semi-structured interviews were carried out with focal points from each participating member state. The focal points were key stakeholders in the respective member states, nominated by the OECS' EDMU. We had intended to update this with the needs assessment from Montserrat, but we never heard back from their focal point. For details on the findings of the needs assessment for each member state, please refer to Section 2 of the Midterm Report.

2.1. Overview of findings

From our interviews, it was evident that some OECS Member States either had content repositories or intended to build one. Islands with repositories were at different points in terms of their development and usage. Similarly, we found that many teachers (and in some cases, ministries of education) had developed resources that could be housed in a regional learning hub.

In terms of repositories, the British Virgin Island was the most advanced. First efforts at building a repository were initiated in 2017 after Hurricane Irma forced school closures. Since then, the island has invested in various repositories including Houghton Mifflin Harcourt for Grades K–6, Fortuna Pix for Grades 7–9, and CXC and Notesmaster (2017) for upper secondary students.

A key insight from interviews with teachers was the overall lack of digital content across the OECS Member States; however, at the time of the interview, a number of countries were creating content for use in national repositories.

2.2. Considerations for a regional learning hub

Even though a number of governments had begun to establish content repositories, Member States recognised the value of a regional initiative, particularly the production and publication of local content for the Eastern Caribbean. In addition to the recognition of the value of a regional hub, focal

points broadly agreed that in time, the hub could potentially replace printed resources.

Although focal points were optimistic about the establishment of a regional hub, they also identified obstacles that may affect the effectiveness of such an initiative. Access to power, hardware, or stable internet connectivity among both students and teachers were identified as the top challenges. In Grenada, for example, a small percentage of learners were identified as having no access to electricity. Moreover, teachers may be unable to access resources in the absence of a guide on how to use the learning hub and integrate content into lessons. As such, the regional learning hub must provide content and guidance to support users. Multiple focal points also noted that parents will need to have access to the regional learning hub so that they can continue to support their children as key partners in instruction.

Finally, country focal points were quick to point out that content must be diverse to capture the range of cultures and student experiences across the region. The need for context-appropriate and culturally relevant resources inspired some islands to collaborate with publishers to align resources with the OECS' literacy curriculum for primary schools.

3. Curriculum mapping

Curriculum mapping took place in three main phases. Section 3 of the Midterm Report details the procedures of identifying OER repositories, as well as the coding scheme to map the resources. This section elaborates on the curriculum mapping and uploading process.

3.1. Identifying early grade literacy OER content repositories

In the first step, we reviewed a list of 640 consolidated early grade literacy (EGL) OER content repositories in search of EGL resources for Grades K–3. We then narrowed this list of repositories to 63, based on language, grade level, subject focus, and the format in which the resources were available. Using a traffic lights classification framework and based on a more in-depth review of the repositories, we further streamlined the list down to 23. Details on the process are outlined in Section 3 of the Midterm Report.

3.2. Aligning OER with the OECS Curriculum

For the second phase of the audit, we reviewed the curriculum for Language Arts for EGL resources in the Eastern Caribbean. In doing so, we analysed the following documents (as identified in conversations with the OECS' EDMU):

- OECS Harmonised Curriculum for Primary School Language Arts;
- OECS Primary Grades' Learning Standards for Language Arts;
- Global Proficiency Framework for Reading.

Based on this analysis, we developed a coding system to align OER to specific skills and competencies. Table 1, below, elaborates on the coding system. For a more detailed version, see Appendix 5 of the Midterm Report.

Table 1. Classification breakdown of curriculum coding system

Classifications	Definition	Breakdown
Grade Level	K–3	Grade K, Grade 1, Grade 2, Grade 3

Language	English and Spanish	
Modality*	Content format	PDF, MP3, MP4
Activity*	Types of student activity or work arrangement	Individual, group, or partner work
General Skills Covered	Literacy skills	Reading, grammar, vocabulary
Decoding and Word Recognition	Applying knowledge of letter–sound relationship	Syllables, letters, words
Print Element and Features	Key features of content	Paragraphs, illustrations, author, title page, content
Grammar and Vocabulary	The set of rules that are to be followed while speaking or writing in a language, as well as the number of words known and used by a person	Pronouns, verbs, nouns
Reading Comprehension Skills	Relevant knowledge and skills related to reading comprehension	Main idea, inference, cause and effect, sequencing, elements of a story, etc.
Writing Skills	The knowledge and abilities related to expressing oneself through the written word	Prewriting, drafting, revision, editing, publishing, writing standard
Listening Skills	The ability to accurately receive and interpret messages in the communication process	Sounds of letters, origin of sounds, types of sounds, conventional listening
Speaking Skills	Basic speaking skills and types of expressions	Pronunciation, intonation, formal and informal expression
Type of Text	Includes various formats that texts can take	Fiction and nonfiction, dialogue, descriptive, information, persuasive, poem, song, journal, messages, diaries, emails, etc.
Topic or Category of Content	Basic or familiar topics and subjects that students are taught	Science, maths, geography, basic topics, familiar topics

The 14 classifications listed above were chosen based on the following considerations:

- country focal points and OECS counterparts suggested that we align OER to higher-level skills and competencies rather than focusing on granular learning outcomes;
- the classifications align with the Global Proficiency Framework for Reading, which accounts for globally recognised literacy standards;
- the classifications align with the required skill sets and learning outcomes by the grades under consideration in the OECS;
- the classifications were not likely to change with the expected curriculum revision.

3.3. Content selection and mapping

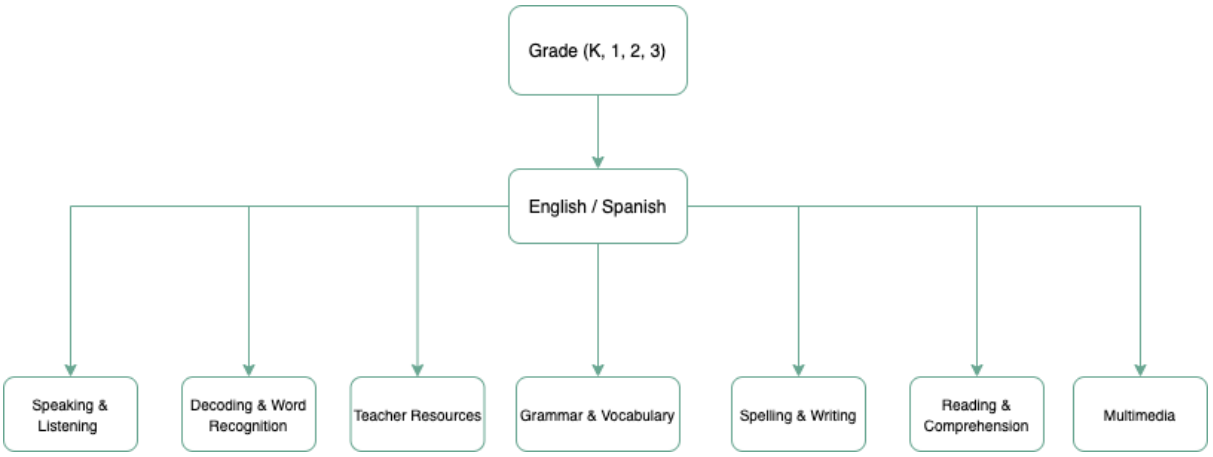
We mapped the 23 repositories outlined in the identification process. Content was selected based on three criteria:

1. The literacy skills, which included reading comprehension, decoding, and word recognition, spelling and writing, grammar and vocabulary, speaking and listening, multimedia and teacher resources;
2. The grade level — Grade K, 1, 2 and 3;
3. Language — English or Spanish.

These items were mapped and reorganised on a spreadsheet (see Output 8 in Appendix 1 for more details). Some of the repositories initially identified were replaced with others because they were either inaccessible or not grade-appropriate. One of such examples is Pratham Books, which could not be accessed on Pratham's website but was available on Kolibri. In cases where the repositories were already on Kolibri, we mapped them directly from there. Thus, as we mapped, we also reviewed and replaced repositories where appropriate.

After mapping the resources on the spreadsheet, the next step involved mapping them on Kolibri Studio. This was done by uploading individual content items to the different literacy skills they aligned to. Importantly, during the mapping exercise, we adjusted the layout of the resources to one that is more seamless and user-friendly, as illustrated in the diagram below.

Figure 1. Kolibri layout plan[1]



In this diagram, we adjusted the content layout to one where the major folders are labelled 'grades' with all the other subcategories listed underneath. We also included appropriate illustrations on each grade folder and subcategories for aesthetic purposes.

3.4. Overview of mapped content

Overall, 2,916 resources were mapped for both Spanish and English with 2,515 resources mapped for English, and 401 for Spanish. Resources were mapped per grade level for 7 classifications, namely: reading comprehension, speaking and listening, decoding and word recognition, teacher resource, spelling and writing, grammar and vocabulary, and multimedia. The table below provides a summary of the items mapped for Grades K–3.

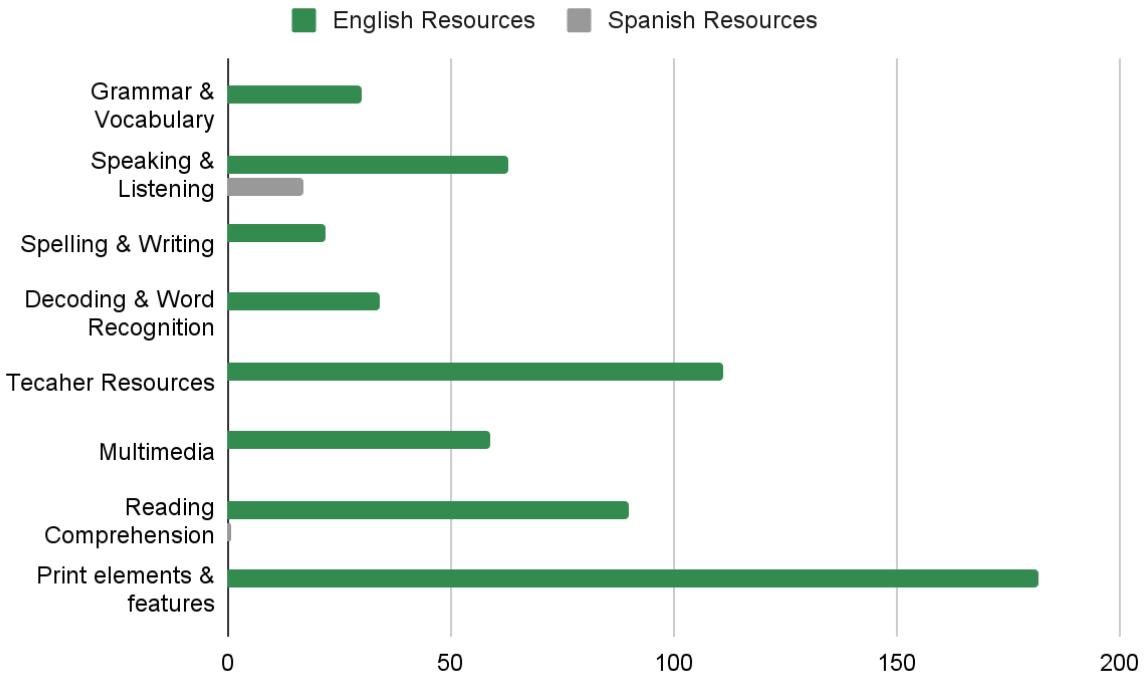
Table 2. Summary of items mapped in English and Spanish for Grades K–3

Grade	English Resources	Spanish Resources	Total
Grade K	591	18	609
Grade 1	635	115	750
Grade 2	465	87	552
Grade 3	824	181	1005
Total	2515	401	2916

[1] The original classifications outlined in Table 2, above, are included in the revised classification.

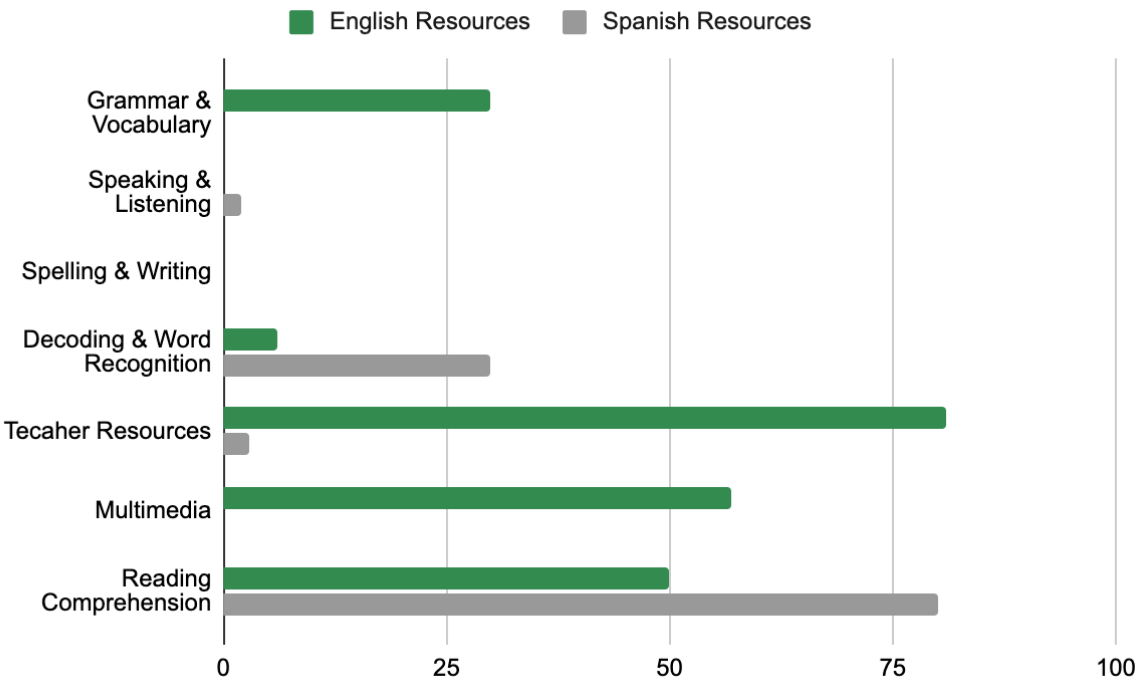
A further breakdown of the items mapped is illustrated in the bar graphs below. The bar graphs demonstrate the resources per grade level mapped in accordance with item classifications. A brief map analysis, which identifies mapping gaps, is provided below.

Figure 2. Grade K resource breakdown



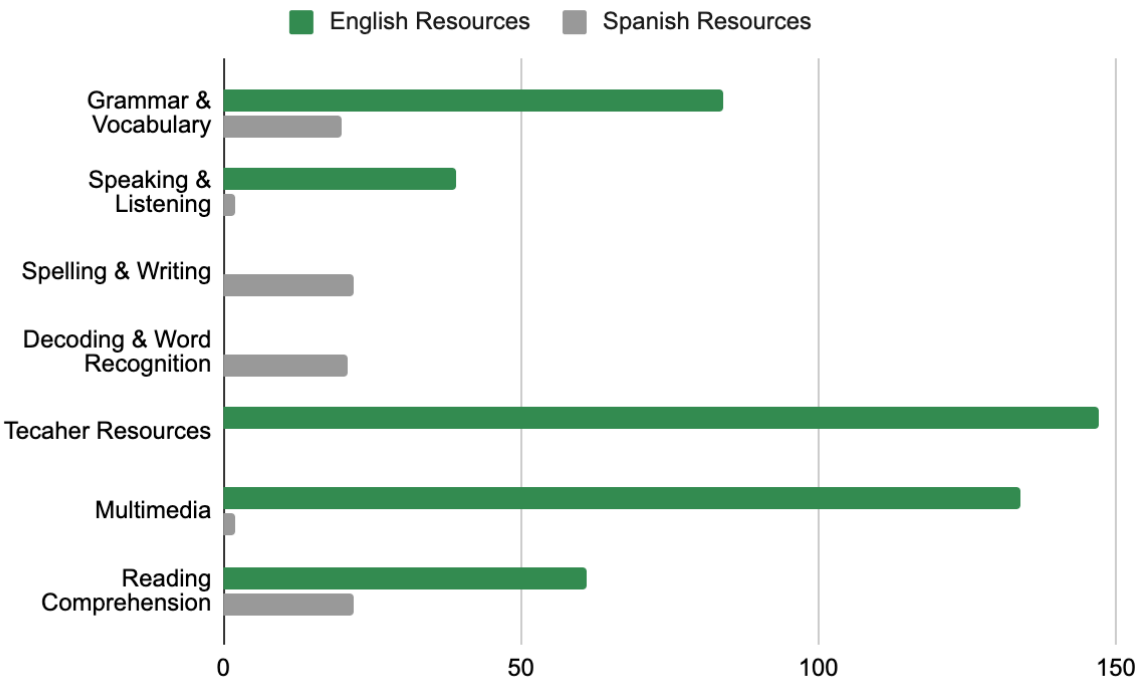
For Grade K, we found fewer resources (fewer than 50) in spelling and writing, decoding and word recognition, and grammar and vocabulary for English. While there were 63 for speaking and listening, 59 for multimedia, 90 for reading comprehension, 111 for teacher resources, and 182 print elements and features. For Spanish, there were only 17 resources for speaking and listening and 1 for reading comprehension. Based on the gaps identified, we recommend building more content for English in spelling and writing, decoding and word recognition, and grammar and vocabulary. For Spanish, we recommend building content in every category except speaking and listening.

Figure 3. Grade 1 resource breakdown



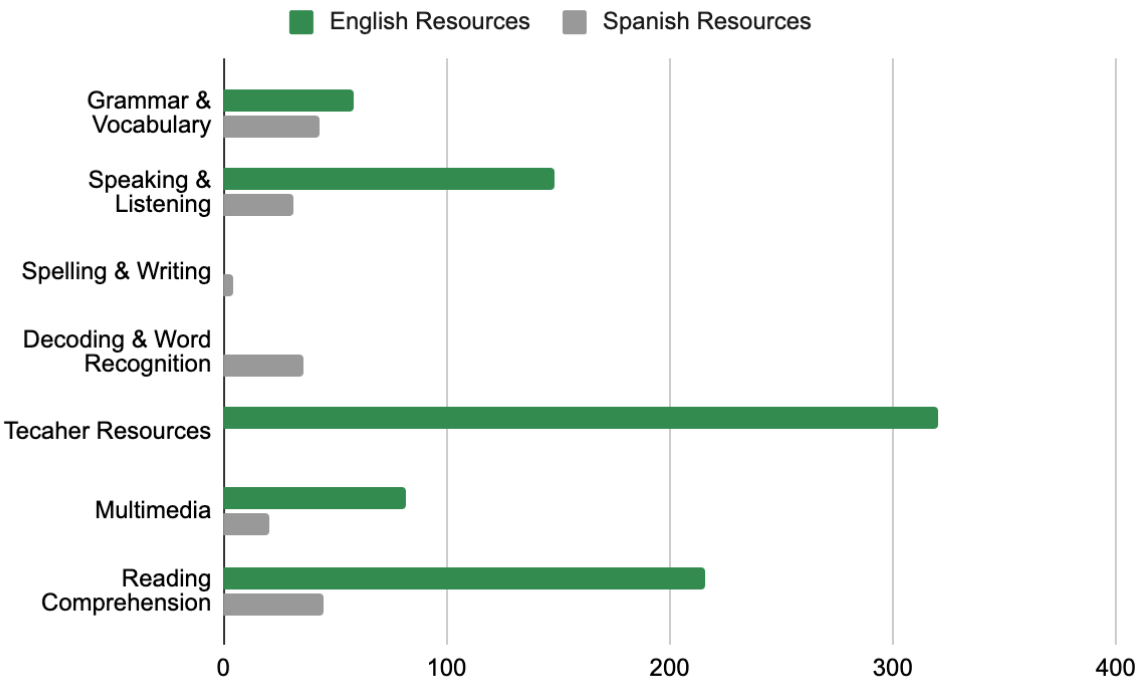
For Grade 1 English resources, there were no items for spelling and writing, none for speaking and listening, 6 for decoding and word recognition, and 30 for grammar and vocabulary. Conversely, we found 81 teacher resources, 57 multimedia, and 50 reading comprehension resources. It was slightly different for Spanish where we found 80 resources for reading comprehension, no resources for grammar and vocabulary, none for spelling and writing, none for multimedia, 3 teacher resources, and 2 items for speaking and listening. Based on preliminary analysis, we suggest building content for the following categories in English: grammar and vocabulary, spelling and writing, decoding and word recognition, and speaking and listening. For Spanish, more content is needed in grammar and vocabulary, speaking and listening, spelling and writing, teacher resources and multimedia.

Figure 4. Grade 2 resource breakdown



Most of the resources for English in Grade 2 were in teacher resources (147) and multimedia(134). In addition, we found 84 items for grammar and vocabulary, 39 for speaking and listening, 61 for reading comprehension, and no resources for spelling and writing and decoding and word recognition. For Spanish, there were 22 resources for reading comprehension and spelling and writing. We found 20 resources for grammar and vocabulary, 2 for reading comprehension, 21 for decoding and word recognition, 2 for multimedia, and no teacher resources. In examining the above pattern, we suggest extra content for the following categories in English: speaking and listening, reading comprehension, spelling and writing, and decoding and word recognition. Likewise, for Spanish, we suggest creating content on reading comprehension, multimedia, and teacher resources.

Figure 5. Grade 3 resource breakdown



Grade 3 had the highest number of teacher resources (320) of all the grades. There were 216 reading comprehension, 148 speaking and listening, 58 grammar and vocabulary, 82 multimedia, and none for spelling and writing and decoding and word recognition. Similarly, for Spanish, we found 101 grammar and vocabulary items, 31 speaking and listening, 4 spelling and writing, 36 decoding and word recognition, no teacher resources, 21 multimedia, and 45 reading comprehension resources. We found gaps in the following categories for English and recommend building more content in spelling and writing and decoding and word recognition. For Spanish, we recommend building more content in spelling and writing.

3.5. Mapping gaps

Table 3. Gaps identified for English and Spanish resources in Grades K–3

Grade	Gaps in English Items	Gaps in Spanish Items
K	Spelling and writing, decoding and word recognition, grammar and vocabulary	Spelling and writing, decoding and word recognition, grammar and vocabulary, multimedia, reading comprehension, teacher resources

1	Grammar and vocabulary, spelling and writing, decoding and word recognition, speaking and listening	Grammar and vocabulary, speaking and listening, spelling and writing, decoding and word recognition, multimedia and teacher resources
2	Speaking and listening, spelling and writing, decoding and word recognition	Teacher resources, multimedia
3	Spelling and writing, decoding and word recognition	Spelling and writing

Initially, we planned to map at least 100 resources per category for English; however, the chosen repositories had more content for some categories and less for others. Based on these considerations, we identified categories with 0–49 resources as having gaps. In such instances, we recommend more content upload. Below is a further breakdown of the mapping gaps according to grade level. Similarly, for Spanish, we aimed for approximately 20 resources per category; however, we found limited resources for several categories. In Table 3, above, and the description below, we highlight the categories with less than 10 resources as having gaps. More specific details on the gaps were examined in Figures 2–5.

3.6. Content repurposing

During the mapping and alignment exercise, some content was identified for repurposing. Some of this content was used for illustration purposes during the capacity building workshops. Time constraints did not permit us to repurpose any of the mapped content; however, we curated a list of resources for repurposing. This can be found in Output 9 in Appendix 1.

3.7. Challenges in mapping and uploading resources

Mapping the resources on Kolibri Studio was full of challenges, which significantly affected our progress. This was especially acute during the publishing phase, primarily due to a slow publishing rate. In addition, the resource upload process took longer than anticipated as Kolibri Studio was not optimised to accommodate concurrent users. There were also instances where uploaded resources were not saved, or they were lost or duplicated several times. We also encountered

difficulties when uploading bulk content. Finally, we found that sometimes resources were not deleted even after we had removed them. This resulted in an inaccurate representation of the number of items in the category concerned and the total number of resources. The challenges we encountered had a negative impact on our progress. However, we found ways to address the challenges. For example, to address issues with bulk content uploads, we uploaded in smaller chunks. Further, to ensure that resources were appropriately synched, we logged out, cleared the cache and reloaded the page each time we encountered the issue. Similarly, to address issues with duplications and inconsistencies with resources being saved, we reviewed our work after each session and deleted duplicates.

The publishing issues were resolved following email communication with Kolibri. However, speed of uploads and other issues identified above persisted. Through communication with Kolibri, we were informed that the issues were triggered by a rogue user who had overwhelmed the system. We also discovered that Kolibri is not set up to handle multiple users across various browser settings. Consequently, we adjusted our approach to using a schedule that allowed no more than one user to log on at a time. This approach was put in place to increase speed of uploads and overall productivity.

3.8. Lessons learnt and recommendations

We learned many valuable lessons during the mapping exercise.

1. **Kolibri Studio does not permit asynchronous use.** We found that only one user at a time could work on Kolibri, as it significantly slowed progress. This should be taken into account if future access to the repository is delegated to multiple users, especially those working in different locations.
2. **We should have begun the mapping process earlier on Kolibri Studio.** It would have given us more time to address unexpected issues encountered.
3. **For bulk content uploads on Kolibri Studio, consider using the API uploader.** Uploading content individually and mapping these items to different curriculum objectives was very time-consuming.
4. **Not all OER are available in editable or readable formats**. We encountered difficulties downloading OER from some repositories. In

addition, some OER available under permissive licences to edit were not available in editable format.

5. T**o synch newly uploaded resources to Kolibri Studio**, log out, clear your cache and reload the webpage. When resources did not synch, other users were unable to see the changes, which in turn gave an inaccurate representation of the current state of the content uploaded.
6. **Lastly, some repositories such as Pratham Books were inaccessible on the suggested website but available on Kolibri Studio**. In such situations, resources were not mapped on the spreadsheet prior to mapping on Kolibri Studio.

4. Reviewing and testing OER housing options

We adopted an agile approach to selecting the appropriate housing options for the content (for a full explanation of agile development, see Section 4.2 of the Midterm Report). Agile development occurs in four stages:

1. **Discovery**: the implementer defines and unpacks the problem, identifying different users and investigating constraints and opportunities;
2. **Alpha**: the implementer tests and evaluates two or three prototype products to find the solution that best addresses the identified problem;
3. **Beta:** the implementer tests the most effective prototype product at a larger scale;
4. **Live:** the implementer releases the product at scale while continuing to improve it iteratively (↑UK Government Digital Service, 2021).

4.1. Criteria for identifying prototype OER housing options

During the discovery stage, we aimed to identify OER housing platforms for alpha testing. In doing so, we developed criteria to inform the platform selection process (see Table 12 in Section 4.3 of the Midterm Report for our OER housing options criteria).

4.2. A review of existing OER housing options

To reduce time and cost, we identified widely used platforms that are available for free or on a freemium basis (for the application of selection criteria to demonstrate the advantages and disadvantages of different OER housing options, see Table 13 in Section 4.4 of the Midterm Report). Notably, our needs assessment identified no local content repositories that met all the selection criteria. As such, we selected the following OER housing platforms for alpha testing: Kerko, Kolibri, and D-Space.

4.3. Set-up of the alpha stage

During the alpha stage, we aimed to identify (a) the most suitable approach for organising content and (b) the platform that teachers find most user-friendly. We

collaborated with the EDMU to identify 20 teachers to participate in three virtual sessions, as below.

1) Programme orientation: an opportunity for teachers to understand the LAC Reads Capacity Programme and the aims of the alpha stage and what was required of them.
2) Categorisation workshop: in this session, teachers were asked to work in groups and rank the core categories and their associated subdomains that they would use to structure content (see Output 5 in Appendix 1 for an overview of the categorisation framework).
3) Housing platform trial: we used the proposed content taxonomy to organise a limited selection of OER on Kerko and Kolibri. In one-to-one user testing sessions with teachers, we asked participants to use each platform to find specific content items, while taking us through their thought processes and instincts. Based on the outcomes of the testing, we selected Kolibri to trial in the beta stage. We selected Kolibri because participants demonstrated they were able to complete the required tasks faster and more accurately on Kolibri than on Kerko. An overview of the testing results for each platform is available as Table 14 in Action 4.5 of the Midterm Report.

4.4. Set up of the beta stage

The aim of the beta stage was to test the platform selected in the alpha stage (Kolibri) and to identify commonalities and differences across schools and regions to understand the following.

- To what extent does the selected housing solution remain effective at a larger scale?
- How can the selected housing solution be improved?
- Is the categorisation taxonomy from the alpha stage still relevant for a larger group of teachers and parents?

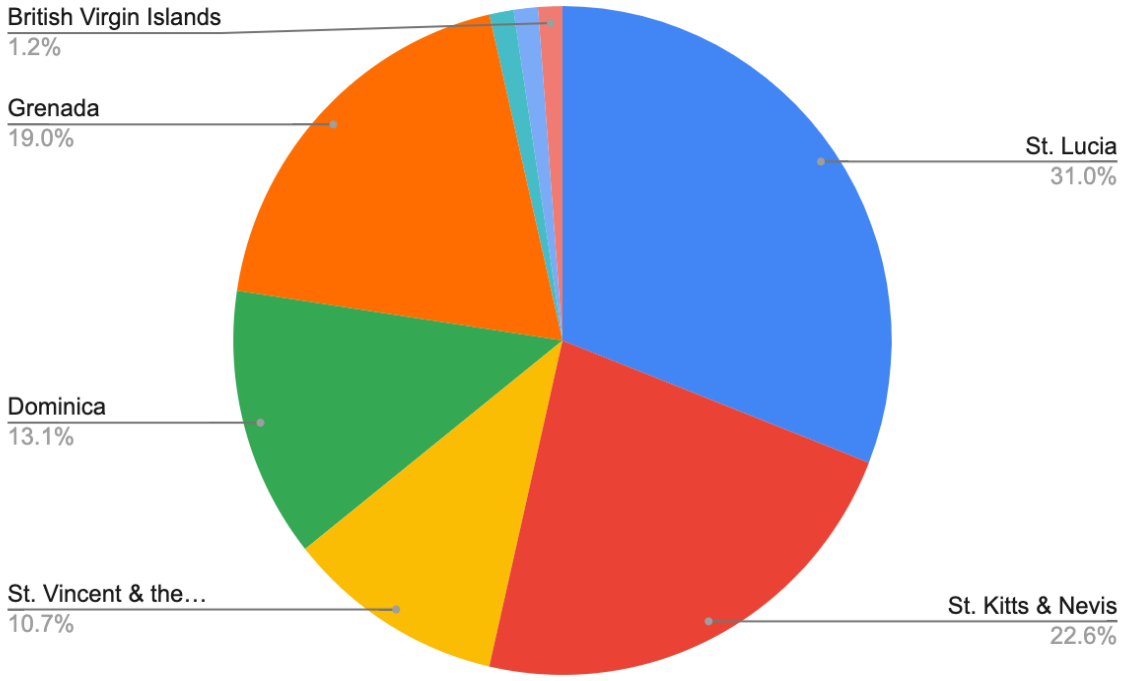
4.4.1. Process / methodology

The beta stage was conducted in collaboration with the EDMU. Over 3,000 content items were mapped to the curriculum and shared on our server, in addition to a

feedback survey. The survey required both open-ended and structured questions. The EDMU disseminated these materials to teachers in the participating Member States and followed up with the participants to secure feedback. We required teachers and parents to use the platform to search for content relevant to their respective subject matters and provide feedback on their experience by answering an online survey. The trial ran for a period of two weeks, with the aim of 500 parents and teachers from across all nine member states trialling the platform.

4.4.2. Overview of participants

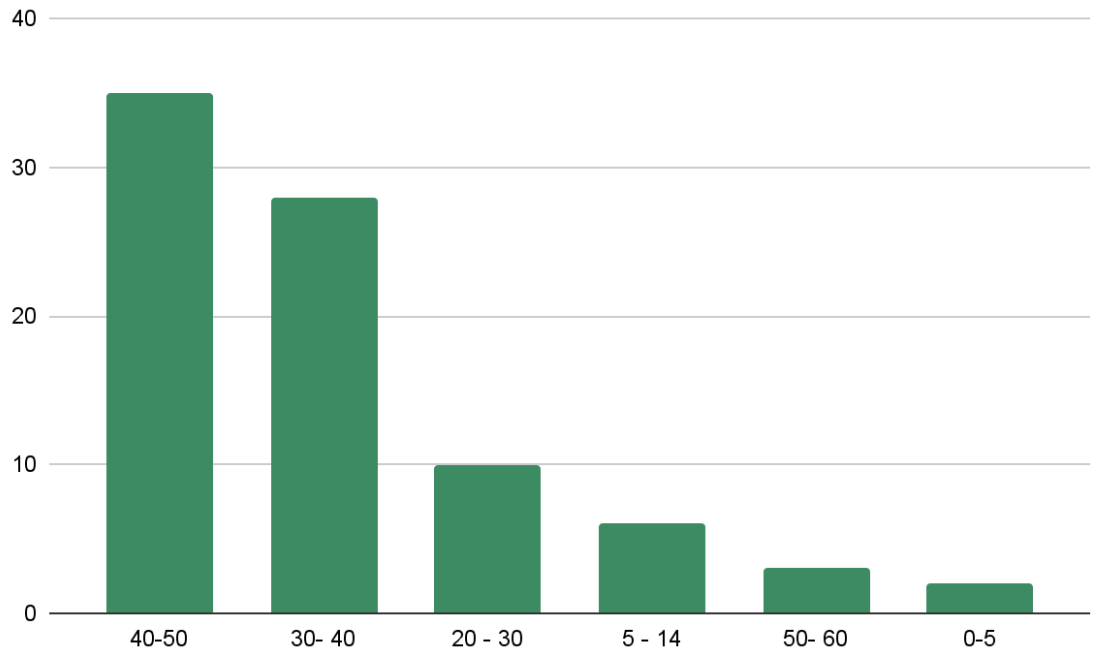
Figure 6. Percentage of total participants by Member States



A total of 85 participants trialled the platform, with 91.7% of the participants being teachers and 2% principals. Geographically, 31% were from Saint Lucia, 22% from St. Kitts & Nevis, 19% from Grenada, 13% from Dominica, and 10% from St. Vincent and the Grenadines.

The British Virgin Islands, Anguilla, and Antigua and Barbuda each had a participation rate of 1.2%, with only one candidate trialling the platform from each of these Member States. No participants from Montserrat attended the second phase of testing.

Figure 7. Participant age groups



Of the participants, 41% fell within the age group of 40–50, followed by the 30–40 age group, comprising 33.3% of the participants, while 12% were aged between 20 and 30 years old, with the remaining 14% aged under 20 or over 50 years old.

4.5. Findings of the beta stage

This section summarises the key findings and results of the beta testing. Prior to the testing, 94% of the participants reported that they had never used Kolibri to source content.

4.5.1. Overall metrics

After using the platform to find content, we asked the participants to rate the platform using four overall criteria:

1. Ease of use;
2. Availability of content relevant to their needs and context;
3. Likelihood of using the platform in the future;
4. Likelihood of recommending the platform to peers and colleagues.

We also included a section on the survey with open-ended questions on how participants felt about the platform, what they liked and disliked about it, and how we could improve it.

4.5.1.1. Ease of use

The majority of the participants (64%) found the platform easy to use, with only 13% of participants indicating they required technical support to access the platform, suggesting that the platform is easy to use autonomously. Indeed, 55% agreed that they felt very comfortable using Kolibri. However, while 24% of the participants reported that they found the platform unnecessarily complex to navigate and access, only 7% of the participants agreed that the platform was very difficult to use.

4.5.1.2. Availability of content relevant to needs and context

In terms of relevance of the content, 41% of the participants found the content they were looking for, 40% gave neutral responses and 19% gave negative responses. We suspect that the negative responses came from participants who wanted content on other grade levels and subjects that were not available on the platform. Almost half of the participants (49%) stated that the content was contextually relevant, and 36% provided neutral responses.

4.5.1.3. Likelihood of using the platform in the future

Most participants (64%) agreed that they would like to use the platform to access teaching and learning materials. Further, 58% expressed that they are very likely to continue using the platform in the future to source teaching and learning materials.

4.5.1.4. Likelihood of recommending the platform to peers and colleagues

More than half of the participants (57%) indicated that they are very likely to recommend the platform to their peers and colleagues.

Full survey results are summarised in Table 4 below.

Table 4. Post-task survey responses, evaluating the platform

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean Rating	Agree (%)
I would like to use the platform to access teaching and learning resources	2	4	24	28	26	3.9	64%
I found the platform unnecessarily complex to navigate and access	21	22	21	17	3	2.5	24%
I thought the platform was easy to use	4	4	22	33	21	3.8	64%
I require support of a technical person to be able to use the platform	25	21	19	13	6	2.5	13%
I would imagine that most people would learn to use this platform very easily	2	6	30	26	20	3.7	55%
I found the platform very difficult to use	35	20	23	5	1	2.0	7%
I felt very confident using the platform	4	7	27	26	20	3.6	55%
I am very likely to recommend this platform to peers and colleagues	2	3	31	30	18	3.7	57%
I found content relevant to teaching and learning needs	8	5	28	27	16	3.5	51%
I am very likely to use this platform to source for content in the future	6	5	24	25	24	3.7	58%
I found the content I was looking for	12	5	33	23	11	3.2	41%
I felt the content was relevant to my context	8	4	30	22	19	3.5	49%

***** *Agree (%) = Agree & Strongly Agree responses combined*

** The table above represents just one section of the survey. The other section required qualitative feedback in the form of text.*

4.5.1.5. What participants liked most about the platform

The open-ended qualitative feedback given provides a number of key takeaways.

- **Variety of Resources.** Participants recognised the variety of resources available on the platform. They also enjoyed the variety of formats such as videos, text, and the activities in which the content was available.
- **Appropriateness of the content.** Some participants commented on the appropriateness of the resources and the resources' relevance to their classroom settings and curriculum.
- **Categorisation.** Participants commended the categorisation and organisation of resources, as they were easy to visualise and access.
- **Quantity of resources.** Some participants mentioned that they were impressed with the quantity of content available on the platform.
- **Ease of access.** Some participants appreciated the platform's ease of access. This could be because there were no login requirements.

Table 5. What participants disliked about the platform, how we incorporated feedback, and how we used the feedback for the version of the platform

Issue	Feedback	Solution
User interface	The platform was not colourful and engaging enough	We included cover icons for each of the categories and topics
	There were too many folders to browse through, which could be confusing	We reorganised the content by grade level to reduce the number of folders on the landing page
	The colour of the landing page	We could not change the colour of the page
	The landing page did not have a cultural feel to it	Adding culturally relevant cover pictures to the folders
Features	A chatroom for teacher–student interaction	This was outside the scope of the programme
Content	Not enough content in English	We uploaded more content in English
	No content for Grades 4, 5, and 6, secondary level, and TVET students	This was outside the scope of the programme
	Not enough content in each of the categories	We uploaded more content into each of the sub-categories
	Not enough teaching resources	We uploaded more content where

		possible
	Too much Spanish content	We stopped uploading Spanish content
	Not enough Caribbean content	We could not address this issue as we could not find Caribbean OER
Organisation	In some folders, English and Spanish content were mixed	We created sub-folders for all the Spanish content to ensure a clear demarcation
Accessibility	Some participants mentioned they were required to download the platform to access it	We will include instructions on how to access the platform.

4.6. Challenges

Reluctance from teachers to participate in the testing. Despite the EDMU's efforts to mobilise teachers to participate in the training, we were unable to reach our target of at least 500 teachers.

Administrative and technical delays. The testing started the week after the expected start date because the OECS needed to review and validate the documents for the testing internally before sharing them with the respective Member States. In addition, the Kolibri Studio platform was temporarily down for three days, which significantly slowed progress.

4.7. Lessons learnt from the testing

E-mail is not the best way to mobilise teachers and parents to participate in a platform trial. The OECS EDMU shared the questionnaire and platform link with 2,277 teachers across all 9 participating Member States. However, only 892 opened the email and only 95 teachers clicked on the links.

Teachers are overloaded with too many surveys. At the time we were pushing the test, several other surveys were ongoing throughout the region. It is important to coordinate efforts so that teachers can participate effectively without feeling like too much of their time is being taken up by surveys.

Member States should coordinate and communicate closely with principals to ensure that teachers respond to surveys. A major reason advanced as to why

most teachers did not trial the platform was that the principals were not aware of the testing and thus did not allocate time for teachers to respond to the surveys.

4.8. Conclusion

Overall, participants found the platform comprehensive, useful, and easy to use. Having a centralised platform with curriculum-aligned teaching and learning materials is very important to many of the participants. We addressed all the concerns raised in the beta testing, and we are confident that users would have a better user experience using the platform to source content.

5. Capacity strengthening

In this phase, we designed an evidence-based OER training programme in collaboration with the OECS EDMU. In designing the training sessions, we placed a strong emphasis on content adaptation and content creation to align with the OECS content creation and engagement strategy (↑OECS Commission, 2021). We also drew on our previous work on OER Guidance for Schools (↑Haßler, 2016; ↑Haßler et al., 2014) and used other OER materials where necessary. We designed all workshop resources for replication and adaptation; the learning objectives, tools, and materials were made available, drawing on open content and open-source material where possible. Below are some features of the programme.

- A bite-sized approach, utilising one-hour sessions, twice a week, spread out over three weeks.
- A strong emphasis on integration with teaching practice, not only discovering OER but also concretely embedding OER into lessons.
- A strong emphasis on adapting learning materials that support effective teaching and learning.
- Integrated support for facilitators, making it much easier for the first cohort of teachers to replicate the training for other teachers.

5.1. Capacity strengthening learning objectives

The learning objectives of the sessions were as follows.

- Understand open licences
- Understand the OECS Instructional Content and Engagement (ICE) framework and practical applications
- Find and evaluate high-quality content using various search engines and OER repositories in line with the OECS ICE framework
- Create or remix OER to be in line with the OECS ICE framework and the OECS Core Learning Standards
- Plan lessons using OER
- Openly licence newly created resources.

5.2. Sessions outline

The following topics were covered in the sessions.

Session 1	**Introduction to Digital Public Goods (DPG) and Open Educational Resources (OER)** In this session we explored key concepts linked with OERs and DPGs. We also covered how to use different search engines such as Flikr, Google, Wikipedia, YouTube, and OER repositories to find relevant OER to use in teaching.
Session 2	**Creative Commons Licences** In this session we explored basic attribution and how to use the Creative Commons Licence. We also provided teachers with basic examples of how to use the Creative Commons Licence.
Session 3	**The OECS Instructional Content Framework** In this session, we explored how to evaluate the quality and usability of content within the OECS context. We also explored the standards and requirements needed to adapt and repurpose content.
Session 4	**Remixing Content I: Remixing Images** In this session, we showed teachers how to create remixed content by adapting images to suit their respective classroom contexts and requirements, in line with the OECS ICE Framework.
Session 5	**Remixing Content II: Remixing Text** In this session teachers learnt how to adapt text to suit their respective classroom contexts, ensuring they are in line with the OECS ICE Framework.
Session 6	**Applying a licence to your content** In this session, teachers explored how to apply an open licence to newly created and remixed content.

5.3. Organisation of the sessions

For the training programme, we delivered 6 modules in a schedule of 18 sessions. The sessions were planned and delivered in close collaboration with Ms Melody Williams, an LAC Reads consultant. For maximum flexibility, we organised three sessions per day for each module on Tuesdays and Thursdays, over a three-week period. Teachers were therefore able to choose a preferred slot based on their availability, and they could only participate in one session per module. The number of people per session was limited to a maximum of 20 to ensure the active engagement of all participants. Each session was supported by two facilitators from Open Development and Education and the LAC Reads Consultant. Each session had one lead facilitator and two other facilitators assisting with technical issues and facilitating breakout sessions. Prior to each session, teachers received an email detailing the outline for the session and providing any useful resources. All workshop materials and resources were shared with the participants via email and WhatsApp, and teachers who struggled with grasping some concepts or those who joined the sessions late were offered one-to-one catch up sessions. Certificates of completion will be awarded to participants upon the creation of an OER.

5.4. Attendance and participation

We had initially planned the sessions for 60 teachers. All Member States submitted the names and contact details of teachers selected to participate in the training, except Montserrat. The table below indicates the number of participants put forward by each Member State to participate in the training.

Table 6. Number of participants from each OECS Member State

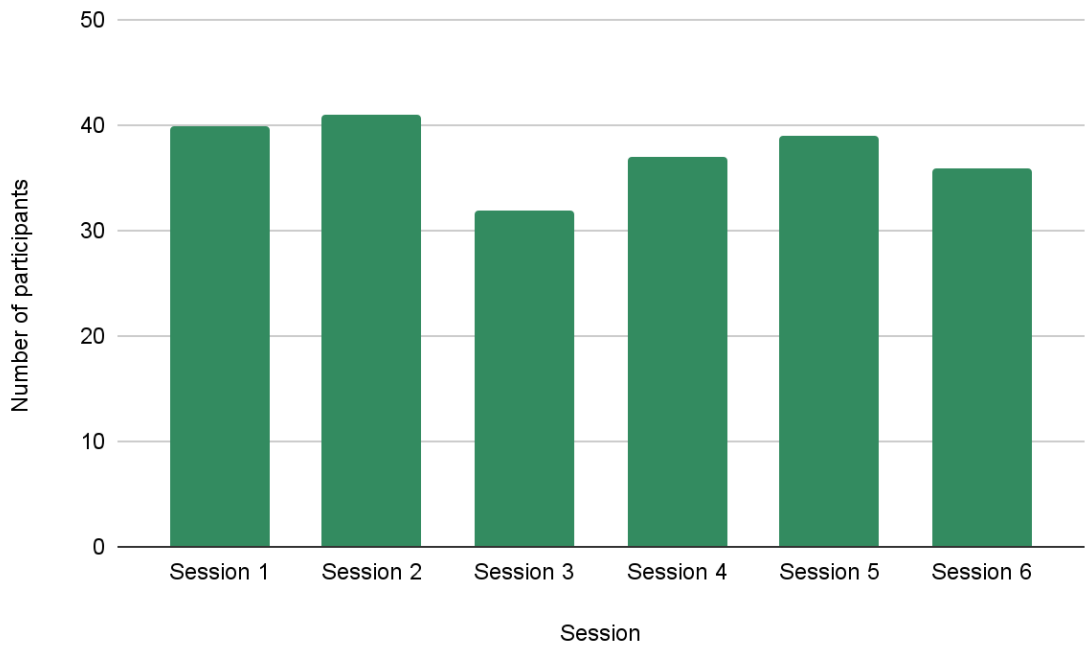
Member State	Number of participants put forward
Anguilla	3
Antigua & Barbuda	6
British Virgin Islands	3
Dominica	10
Grenada	10

Montserrat	0
Saint Kitts and Nevis	5
Saint Lucia	10
Saint Vincent and the Grenadines	13
Total	**60**

5.4.1. Participation

Participation across the sessions averaged 40 participants per training day, which was not as high as we had hoped to achieve. Figure 4 details the number of participants per session.

Figure 4. Number of participants per session



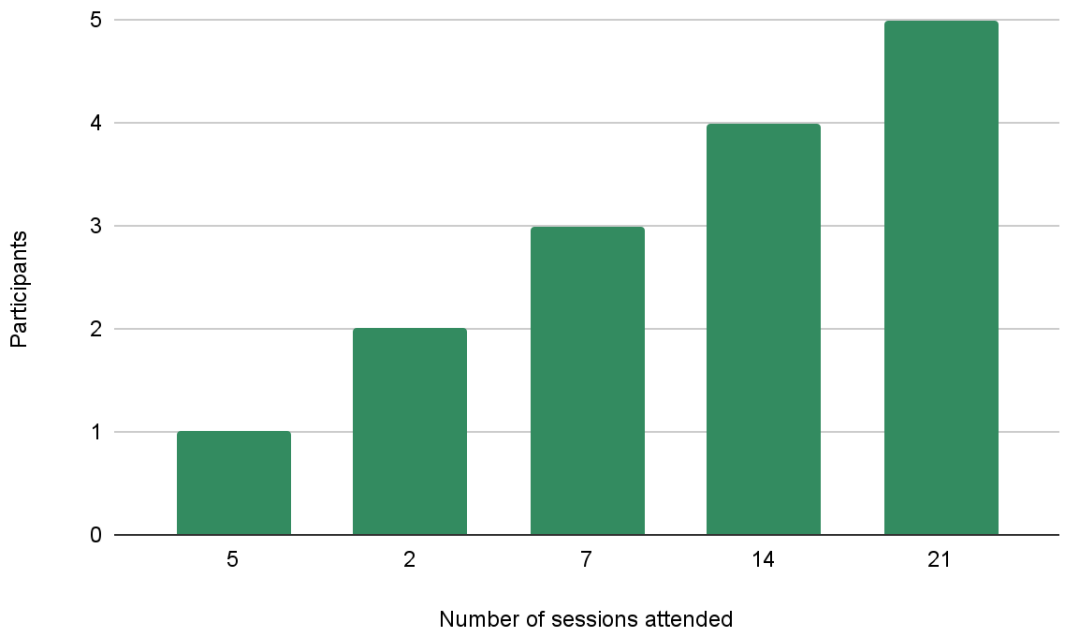
Some reasons for the low number of participants are as follows.

- Some Member States only decided who was going to be participating in the training after the programme had already commenced — they sent the lists late.
- Some participants' contact details shared by the focal points were not up-to-date. These participants never received any correspondence from us.

- Some participants contacted us indicating that they were already participating in other professional development programmes and that they could not participate in the OER training due to existing time commitment constraints.
- Some participants reported connectivity issues, meaning that their participation in sessions was only partial, or in extreme cases, not possible.

Figure 5 illustrates engagement throughout the programme.

Figure 5. Session engagement



Over 40% of participants attended all five sessions where attendance was tracked, and 70% attended at least four sessions.

5.5. What teachers liked about the sessions

The timeliness of the sessions. Teachers appreciated that the sessions were only scheduled for an hour and the time was respected.

The structure and practicality of the sessions. Participants appreciated the way the sessions were structured, as they focused more on collaboration and content adaptation. In addition, they appreciated the bite-size nature of the information provided to them during the sessions.

The facilitators. Participants commended the skills and technical know-how of the facilitators and their willingness to always support participants' learning and engage with them during the sessions. This also contributed to the retention rates, as some participants favoured some facilitators.

The content. The concept of OER was fairly new to teachers prior to the sessions; therefore, they learnt valuable concepts that could be applied immediately to their teaching and learning practice.

Collaboration. The workshops provided opportunities for teachers to collaborate with their peers from the other Member States, share resources, and learn from each other.

5.6. What teachers disliked about the sessions

The timing. Teachers constantly complained that one-hour slots did not give them enough time to express themselves or engage with the facilitator(s) more.

5.7. Lessons learnt from the capacity strengthening sessions

- **September is generally a very busy month for teachers,** as they prepare for the new academic year. For this reason, capacity building opportunities for teachers should be scheduled at a less busy time.
- **One-hour sessions are too short for teachers.** Therefore, we recommended increasing the duration by an extra 30 minutes to enable teachers to engage and ask questions.
- **Several concurrent training programmes were ongoing in the other Member States.** This made it difficult for teachers to attend or engage actively in the sessions. Some teachers were attending our virtual sessions while participating in another training session. It is therefore important for the OECS, in collaboration with the respective Member States, to establish a schedule for professional development.
- **Teachers are not content creators.** The overall quality of content submitted by teachers in the OER adaptation sessions was inadequate for publishing. We therefore strongly recommend that any content creation or adaptation needs to be scaffolded and guided. Teachers require support

with illustrations, copy-editing, writing, and an overall content creation framework to which they can align their content and guide their creations.

- **Teachers require help with internet access.** Limited internet access does not only limit the opportunities teachers have to participate in virtual professional development but also limits the contact which teachers could otherwise have with one another and thus deprives teachers of opportunities to learn from each other and share practices that work.

5.8. Continuity and sustainability plans for capacity strengthening

To ensure continuity and sustainability after the training, we created a WhatsApp group with over 40 participants from the participating Member States. The aim of this group was to create an environment where teachers can collaborate and discuss OER and share relevant resources. In addition, we are providing one-to-one mentorship opportunities for teachers to help them either create or adapt OER. The aim is to publish this content on the OECS Learning Hub. We intend to continue providing this support until the end of the year. We also shared all training materials and resources with teachers via WhatsApp and email to enable them to facilitate OER sessions with their colleagues.

6. Recommendations for scaling

This section outlines some recommendations for the OECS EDMU to scale and sustain the programme, as well as to inform future content repository initiatives.

6.1. There is a need for more platform testing

The programme's beta phase intended to target at least 500 teachers, parents, and principals across all participating member states. However, we were only able to obtain 85 responses from participants; those responses were neither equally distributed nor proportionate to the target populations of each Member State. Therefore, we strongly recommend that the EDMU continues the beta testing to obtain further insights on the platform and understand how teachers use the platform. Beta testing should take place on a larger scale to obtain more reliable results. Such further beta testing would also give an indication of which settings the platform might not be suitable for.

6.2. There is a need for content development

A major challenge is the scarcity of curriculum-aligned content. This became evident through the mapping process undertaken in this project. Specifically, there were no resources or repositories (available under an open licence) that featured local content. We therefore suggest that efforts be made to increase the availability of locally relevant content, not only for early grades, but also for Grades 4–6, secondary, and technical schools. We also recommend that materials produced by previous, different programmes, such as the Early Learners Programme and Hands Across the Sea, should be made available for publishing under open licences.

As demonstrated in the content adaptation workshop, it is possible to identify content that can be repurposed to suit the local context. This is a great starting point for content development efforts. Where content is created from scratch, we recommend that content development be undertaken by content specialists such as instructional designers, illustrators, and qualified writers and ideally checked by copy editors to ensure that high-quality content is made available. There is also a

need for a foundational content creation framework, which could serve as a guide to content creation and evaluation.

To ensure reuse and adaptation, we reiterate that all content should be made available under an open licence.

6.3. Develop an open curriculum

To accelerate the efforts towards a regional content repository, it is paramount that all Member States move towards an open modular curriculum. Very often, discussions about regional content repositories end with selecting the appropriate curriculum, learning outcomes and standards to which the content should be aligned. An open curriculum will simplify future mapping efforts and will ensure a fluid, flexible, and individualised education model which promotes student-led learning. The OECS should therefore consider convening Member States for implementing an open curriculum and an associated set of resources that are aligned with the curriculum.

6.4. Finalise the hosting infrastructure

The EDMU needs to implement appropriate hosting for the content hub, as well as decide Domain Name System entries. Further, associate issues such as software updates, server maintenance, and security need to be considered in the medium term. A forthcoming OECS-commissioned report offers guidance on selecting learning management systems (↑OECS Commission, 2021); the report also offers insights regarding the technology infrastructure.

Management of the server and the platform will be handed over to the OECS at the end of the programme. We therefore recommend that the EDMU assign a specialist who will manage the backend of the platform and maintain and frequently update it with relevant curriculum-aligned OER. Details on how to maintain the platform are outlined in the front / backend guide of the platform (see Output 10 in Appendix 1).

6.4.1. Maintaining the platform

The following requirements are needed to maintain the platform.

- **Kolibri Studio:** There are no additional costs required to maintain the content repository on Kolibri Studio.
- **Server specifications:** Regarding maintenance of the server, we recommend the following server specifications: 1 vCPU, 2GB RAM, 50GB Disk. The cost may vary depending on the provider, but the average cost is USD 12 a month.
- **Domain name:** We recommend getting a domain name that best represents the OECS and the platform. The average cost is USD 15 a year.
- **Updating security patches on the server:** We recommend that the server is updated on a yearly basis.
- **Uploading content:** For details on uploading more content to the platform, see Output 12 in Appendix 1.

6.5. Continue OER training for teachers

The feedback from the capacity building sessions indicated that teachers were very enthusiastic to learn about OER, and about creating and adapting OER. In addition, teachers enjoyed collaborating with peers from other Member States. Given the time allocated to the workshop, several aspects of OER could not be covered (including further details on licences and additional kinds of media, such as video). We therefore recommend that further OER adaptation workshops should be offered by the EDMU; such workshops should be spaced out over time, relevant to teaching and learning, and structured to subjects and grades. We strongly recommend that such sessions should be very structured, guided, and scaffolded; ideally, such sessions should be designed by experienced instructional designers. Online learning modules on OER adaptation could be developed to reach a larger group of teachers.

6.6. Need for advocacy

We recommend sustained and deliberate awareness raising across Member States, targeting officials, principals, schools, and teachers to build open educational content and create a regional online repository. We also recommend raising awareness among parents. The needs assessment highlighted that most Member States already had local content initiatives in place. Further investigations revealed

that the content was not available under an open licence. Efforts to convince local publishers in some Member States to share their books under a more permissive licence were futile. In addition, the content development initiatives varied across Member States as some were much more advanced than others; it was therefore impossible to utilise the content for this programme. Greater awareness for OER and open licensing is desperately needed to accelerate education provision among Member States.

6.7. Promoting visibility of the learning hub

Teachers need to know that the content repository is available and ready for use. The EDMU, therefore, needs to launch new creative ways to notify teachers about the platform and ensure that teachers use this platform. The beta testing demonstrated that basic notification by email or WhatsApp did not engage teachers sufficiently for them to explore the content repository. The EDMU needs to consider creating ways of generating awareness for the platform. Ultimately, the OECS needs to determine how teachers can be incentivised to use the repository — without tangible benefits, it is unlikely that the repository will be heavily used. One way to do this might be to get buy-in from principals; principals can advocate for the platform, and even allocate time for the platform to be used. We do note that the content repository is not the only platform teachers have access to; teachers are already using different platforms to obtain content and ultimately will use the platforms that have the best content and are most convenient to use. For the content repository to be successful, it needs to be further developed — including the development of additional content.

7. Replication of the programme

The programme was designed and implemented for replication in the creation and adaptation of other content initiatives in other regions around the world. Appendix 2 outlines the procedures necessary to replicate this programme. The lessons learnt throughout the process, as well as the recommendations, have been documented in this report, to ensure a seamless replication process in other countries.

The platform can serve as a repository in several other early grade learning contexts because it is mapped to literacy skills and the global proficiency framework for reading. The platform is therefore relevant for several literacy initiatives globally, where English is the main language of instruction and Spanish is the second language. In addition, the content on Kolibri Studio can be shared simultaneously on multiple servers. It can therefore serve as a repository in other contexts.

8. References

Haßler, B. (2016). *Open Educational Resources Guide for Colleges of Education* (Handbook for Professional Development Coordinators). Transforming Teacher Education and Learning, Ministry of Education (Ghana).

Haßler, B., Neo, H., & Fraser, J. (2014). *OER Guidance for Schools*. Leicester City Council.

OECS Commission. (2021). *Draft Outline for LMS Selection and Implementation Tool Kit*. Open Development & Education.

OECS Commission. (2021, August). *OECS Instructional Content and Engagement Framework*. https://docs.google.com/presentation/d/1_LhgcqiRV0aib-iGcQ0lUviq4_LwqM6ty1tKu8H_rGc

Appendix 1. Package of programme outputs

OpenDevEd produced the following outputs to provide further information on our work for this assignment. Please note that all programme outputs are available under a Creative Commons Attribution 4.0 International licence.

#	Output title	Link to accessible output
1a	Work Plan and Capacity Building Plan	Google Document
1b	Work Plan and Capacity Building Plan Timeline	Google Sheet
2a	The Use of Virtual Learning Environments and Learning Management Systems: A Desk-based Literature & Programme Review	Google Document
2b	Rolling Out a Virtual Learning Environment: An Agile Delivery Approach	Google Document
3	Audit of Content Repositories for Early Grade Literacy Resource	Google Sheet
4	Curriculum Coding Scheme	Google Sheet
5	Teacher Categorisation Inputs	Google Jamboard
6	User Testing Results	Google Sheet
7	Midterm Report	Google Document
8	OECS Curriculum Mapping	Google Sheet
9	Beta Testing Results	Google Sheet
10	List of OER to be repurposed	Google Document
11	Capacity Building Attendance Records	Google Sheet
12	Kolibri User Guides (front and backend)	Google Drive

Appendix 2. Replication blueprint