Navigating Digital Learning

Insights into the Pasaporte al Aprendizaje Programme in Mexico

Key messages

Almost 100,000 students utilized the *Pasaporte al Aprendizaje* in Mexico in upper secondary school courses from October 2021 to February 2023. Engagement with the platform increased over time in core subjects, such as mathematics and Spanish, with an increase in activities before school exams. The platform was used to respond to the challenges posed by the COVID-19 pandemic by serving as a complementary tool when schools returned to normal operations.

Student assessment scores improved as they progressed through courses on the *Pasaporte al Aprendizaje* as measured by assessments integrated within the platform. Scores improved for important subjects, such as mathematics, Spanish, chemistry and physics. Learning was measured through pre- and post-assessments for each course.

What factors drove the programme's success?

- **A clear use case to recover foundational learning with a phased approach and targeted users** allowed for effective implementation and provided room for improvements over time.

- **Curriculum-aligned flexible content** provided teachers and students with additional engaging resources and new interactive ways to learn and measure learning.

- **Teacher training and ongoing support** gave teachers the necessary skills, confidence and motivation to deliver and integrate the platform as part of their teaching practices.

- **Teacher-led implementation and flexibility** in the usage of the platform allowed teachers to adapt the use of the platform to meet their students' needs.

- **Strong coordination and involvement by government partners,** including the Center for Research and Advanced Studies of the National Polytechnic Institute (CINVESTAV), the Vice-Ministry for Upper-Secondary Education, the United Nations Children's Fund (UNICEF) and Microsoft ensured a well-rounded and comprehensive approach to the program design, development and implementation.

While research shows improvements in student assessment scores over time, further research is needed to understand the key factors driving these positive results at the classroom and school levels. This information can help guide improvements in implementation across schools to further improve children's learning outcomes.

Acknowledgements

Context

The [Learning Passport](#) (LP) is a digital learning programme introduced by UNICEF in 2018. It is based on a technology platform called Microsoft Community Training, managed by Microsoft, with a supporting ecosystem that can be adapted to meet the specific needs of learners and educators. It can be accessed online or offline through mobile devices, tablets and computers. The LP has been launched in 36 countries and another 25 countries are in the implementation planning stages across Central Asia, Central and Eastern Europe, Latin America, the Middle East and Northern Africa, South Asia and Southeast-Asia, and sub-Saharan Africa.[1] The platform is customized by ministries of education, education partners and UNICEF country offices to meet specific country needs. Educational content is uploaded to the platform and can take the form of videos, PDF files, presentations and websites.

In Mexico, the LP, locally called the *Pasaporte al Aprendizaje*, was launched in October 2021 to mitigate learning loss after widespread school closures due to the COVID-19 pandemic, which affected 36.5 million school children. Approximately 5 million students are enrolled in the upper secondary education level in Mexico across 21,000 schools. While not specific to upper secondary education, one study found learning loss in a standard deviation (SD) range from 0.34–0.45 SD in reading and 0.62–0.82 SD in numeracy related to the COVID-19 pandemic in the states of Campeche and Yucatan (Hevia, et al., 2022).

UNICEF Mexico, the Vice-Ministry for Upper-Secondary Education (*Subsecretaría de Educación Media Superior*, under the Mexican Ministry of Education [MoE], *Secretaría de Educación Publica*) and the Center for Research and Advanced Studies of the National Polytechnic Institute (*Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional* [CINVESTAV]) jointly developed and designed courses to strengthen students' skills in mathematics, Spanish, physics, chemistry and English through online remedial courses aligned with the official upper secondary (*educación media superior*) school curriculum for Grades 10–12.

The *Pasaporte al Aprendizaje* program incorporated components of digital education, including high-quality interactive content (videos and games), flexibility in usage and offering students more practice (via quizzes) (Ganimian, Vegas and Hess, 2020).

Research goals

This research brief explores the design, implementation and use of the *Pasaporte al Aprendizaje* to strengthen students' literacy, mathematics and science skills. It documents how the *Pasaporte al Aprendizaje* was implemented and shares key descriptive statistics and patterns stemming from user data generated from the platform. The major goal of this research is to inform improvements in the implementation of *Pasaporte al Aprendizaje* in Mexico and to provide key lessons on the use of digital learning for other countries and programmes globally.

Descriptive analysis of the data generated from the platform was undertaken to understand students' use of the platform and explore trends in registration, usage, quiz completions and assessment scores. In addition, consultations were conducted with UNICEF Mexico, CINVESTAV and MoE stakeholders to better understand the local educational context and key programme design elements.

The research has some limitations, due to the data available for the analysis. While the research shows positive improvements in learning outcomes as measured by pre- and post-assessments, the analysis only observes data from users who engage with the platform. Thus, there is no control group or data from a comparison group from classrooms not participating in the *Pasaporte al Aprendizaje* programme that would allow for experimental or quasi-experimental methods to infer causality.

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1. For an up-to-date list of countries in which the LP is live, please refer to <www.learningpassport.org/where-we-work>.

The remainder of this brief is organized as follows:

- Section 1 presents the key design and implementation steps undertaken for successful deployment and use of the *Pasaporte al Aprendizaje*, based on consultations and interviews with implementing partners.

- Section 2 summarizes findings from the analysis of data from the platform, exploring trends in course enrolment, user engagement and assessment scores.

- Section 3 concludes by outlining the key lessons learned from the implementation of the programme.

1. Design and implementation of the Pasaporte al Aprendizaje in Mexico

Based on qualitative interviews and consultations with UNICEF Mexico, CINVESTAV and MoE stakeholders throughout the implementation process, the following design and implementation steps were identified as important for effectively implementing and improving the *Pasaporte al Aprendizaje.*

1.1.   Staged approach

An iterative and phased approach was taken to improve the programme over time. *Pasaporte al Aprendizaje* was implemented in four phases between 2021 and 2023. The first phase was from October 2021 to 11 March 2022. Phase two started on 12 March 2022 and ended on 29 July 2022, followed by phase three from 30 July 2023 to 17 February 2023. Phase four was from March 2023 to July 2023. The *Pasaporte al Aprendizaje* program was launched as an innovation to address learning losses. The aim was to test the platform and program components, and improve upon the implementation in each subsequent phase. At the start of each phase, content on the platform was updated and teacher training was conducted, with feedback incorporated from previous phases. This iterative process of gathering feedback and making necessary adjustments helped refine the programme over time.

1.2.   Targeted use case

Schools in the first phase were chosen based on their need to mitigate low learning levels as well as the availability of the technological infrastructure required for the programme. During the planning process for phase one, target schools were selected and invited to participate based on scores from a national digital assessment of literacy and numeracy skills launched during the COVID-19 pandemic. Upper secondary schools were selected by ministry officials based on not only low assessment skills, but also having to meet a basic standard of technological infrastructure to support the *Pasaporte al Aprendizaje* platform. These requirements included functioning computer equipment and internet access for students and administrators to ensure that students could access digital devices and log into their unique accounts within the platform. This diagnosis of specific student needs and infrastructure is in line with recommendations for schools to consider when considering education technology (Ganimian, Vegas and Hess, 2020). After having many schools actively participating in phase one, and given that the content was curriculum-aligned, the MoE observed that it would be useful for all students. Therefore, the platform was offered to all schools that met the minimum infrastructure requirements that were interested in the programme, regardless of the national digital assessment.

1.3   Curriculum-aligned flexible and interactive content

Flexible and curriculum-aligned content and courses were developed for three upper secondary education models. Mexico has three upper secondary education models *(bachillerato general, bachillerato tecnológico and profesional técnico)* and 33 subsystems, each with different structures. The *Pasaporte al Aprendizaje* was implemented in eight subsystems. Experts from CINVESTAV designed course content jointly with the MoE by identifying the basic disciplinary competencies and foundational skills needed for each subject. The MoE selected

12 subjects based on teacher demand. While the courses followed a sequence of topics for different subjects, they were made to be flexible and not designed to align precisely with the school semester. In a brief survey of 15,000 users on the platform, two-thirds of respondents mentioned that the learning material on the platform met their needs. This built-in flexibility of the platform was by design to allow teachers within each subsystem the autonomy to determine the implementation strategy that best suited their needs and circumstances (see Section 1.5).

Courses for the *Pasaporte al Aprendizaje* platform were designed thoughtfully, incorporating interactive elements and engaging resources and assessments to support students' learning. The content for each course was conceived jointly by experts within CINVESTAV and the MoE. Each course contained numerous links to resources and specialized content from global content providers, such as GeoGebra, Khan Academy, PhET and others. Furthermore, the courses were strategically designed to reinforce students' learning by revisiting previously studied content. To assess students' progress, each course had an initial diagnostic assessment and a final assessment, which were designed by assessment experts within CINVESTAV and the MoE. These assessments allowed teachers to compare students' progress at the start and end of a course. Students were able to access these courses remotely from home and at computer labs in schools.

1.4   Teacher training and ongoing support

Teachers received training and continuous support on how to effectively incorporate the platform into their classroom instruction. Trainings were conducted virtually, lasting two hours on average. The focus of the training was to introduce the platform, present key features, how to create and assign students to groups and how to incorporate the *Pasaporte al Aprendizaje* in the classroom. The last 30 minutes of the training was dedicated to addressing participant questions. The training did not provide any prescriptive guidance on how frequently or intensively teachers and students should engage with the platform, leaving teachers with the option to adapt the use according to their needs. Video recordings of the trainings were shared afterwards, but the main trainings were all conducted synchronously. Additionally, right after the training, the full syllabus of the courses was provided to the teachers. This was fundamental for them to plan how to incorporate the content of the *Pasaporte al Aprendizaje* as part of their semester plans. To ensure ongoing support, CINVESTAV also provided help desk assistance to teachers and administrators, addressing questions they encountered, such as those related to platform registration. The help desk was available every day throughout the four phases. Over 2,000 cases were received by the help desk, with a higher number of requests at the beginning of each phase. Teachers were also provided with online tutorials and a [web page](#) with useful resources that they could access at their convenience. These resources were designed to provide teachers with access to detailed instructions and support when they faced technical challenges.

To encourage continued teacher engagement, CINVESTAV facilitated consistent communication with teachers throughout the implementation. For example, in phase two, teachers received email updates every two weeks with detailed course descriptions as a reminder for how they could incorporate the *Pasaporte al Aprendizaje* platform in their instruction. Teachers were also encouraged to diversify their classroom activities by incorporating the available readings, videos and infographics within the platform.

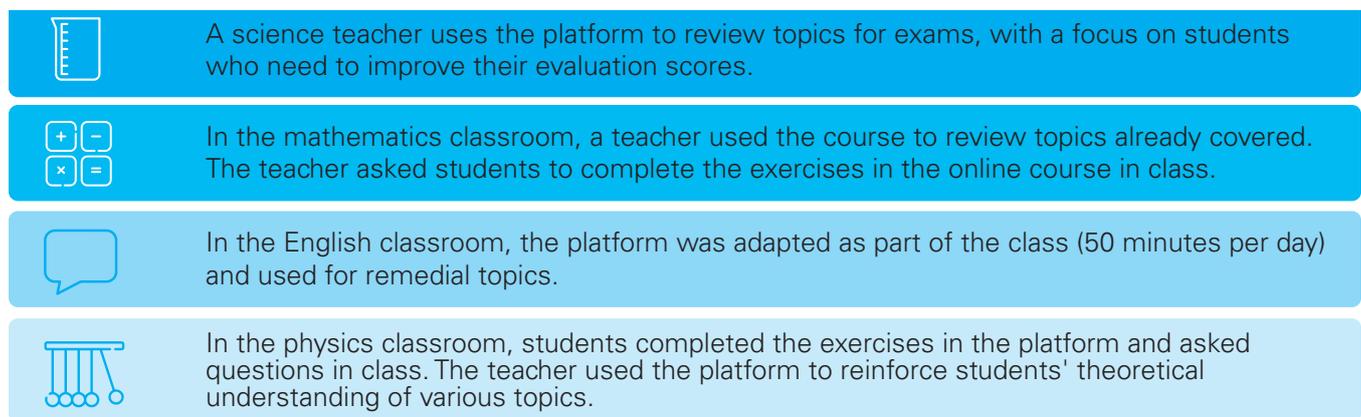## 1.5   Flexible implementation modalities for teachers

Teachers were provided with flexible options to customize their instructional approach in the classroom and cater to the unique needs of their students. The platform served as a versatile support tool that teachers could employ according to their discretion. Teachers could create groups for their classes, register students and assign different courses to students. Around 40 per cent of registered teachers (3,800) actively created groups of students and assigned students to specific courses and tasks. During training, teachers were encouraged to select courses and lessons from the platform that they believed would best reinforce learning in their classrooms, particularly from school closures.

A few recommended ways in which teachers could use the platform included:

- Using the course content for lesson planning and integrating course activities in classroom teaching.

- Encouraging students to take specific courses to review content for general exams, with time at the end of class to answer questions, reinforce content and monitor course progress on the platform.

- Targeting students with lagging performance and enrolling them in specific courses, either during the year or during the break, and monitoring their progress.

Figure 1 shows the various ways that teachers utilized the *Pasaporte al Aprendizaje* in classrooms.

Figure 1: Use of *Pasaporte al Aprendizaje* in the classroom as reported by teachers

	A science teacher uses the platform to review topics for exams, with a focus on students who need to improve their evaluation scores.
	In the mathematics classroom, a teacher used the course to review topics already covered. The teacher asked students to complete the exercises in the online course in class.
	In the English classroom, the platform was adapted as part of the class (50 minutes per day) and used for remedial topics.
	In the physics classroom, students completed the exercises in the platform and asked questions in class. The teacher used the platform to reinforce students' theoretical understanding of various topics.

Integration within lesson plans and clear programme goals were important factors for teachers. Feedback was collected from teachers in phases one and two, which showed that clarity of use was important for teachers. Teachers wanted flexibility in how they incorporated the platform into their teaching and to know whether its usage was mandatory for students. Teachers viewed mandatory use as critical for ensuring consistent engagement and progress with the learning materials. While some teachers chose voluntary participation, others linked engagement with the platform to students' grades. In these cases, teachers awarded points to a student's final grade to incentivize progress and encourage active participation in the courses.

Dashboards were created to allow teachers to track student progress and understand their needs. In three out of the eight subsystems, the *Pasaporte al Aprendizaje* programme provided real-time dashboards on platform usage to teachers and officials. The dashboards were intended to help teachers target students in need of remedial learning and assign relevant lessons and courses. Teachers could track student and group activity, and progress through courses either directly on the platform or via dashboards.

1.6   Close coordination with implementing partners

UNICEF Mexico played a central coordinating role with implementation partners in planning and implementing the *Pasaporte al Aprendizaje* programme. UNICEF Mexico served as the focal point for communicating across the various ministry offices and Microsoft. It met with CINVESTAV once a week and the Vice-Ministry for Upper-Secondary Education every month, and held quarterly meetings with Microsoft Mexico. UNICEF Mexico also facilitated feedback between teachers and Microsoft, e.g. when teachers had an issue with the platform, they would report the issue to CINVESTAV, which UNICEF Mexico would flag to the UNICEF headquarters and Microsoft. This coordinating role helped establish more accountability and find quick resolutions for any challenges faced during the programme.

2. Findings from platform back-end data

An overview of the use of the *Pasaporte al Aprendizaje* is summarized below, using back-end data from user activity during phases one to three (October 2021 to February 2023). The back-end data includes information on user registration and usage, such as completed courses, lessons and quizzes, frequency of usage and timestamps of user activity. The LP platform is powered by Microsoft Community Training,[2] which captures this back-end data. The summary statistics presented in this section focus on three key topics:

1. Student and teacher registrations

2. Engagement with platform content

3. Gains in learning

The findings are based on data availability and user data that is collected and stored on the platform, and is consistent for all LP platforms globally. The findings are also complemented by insights gained from consultations with experts and partners as well as interviewing teachers using the *Pasaporte al Aprendizaje*, which helped provide a rounded analysis beyond the back-end data itself.

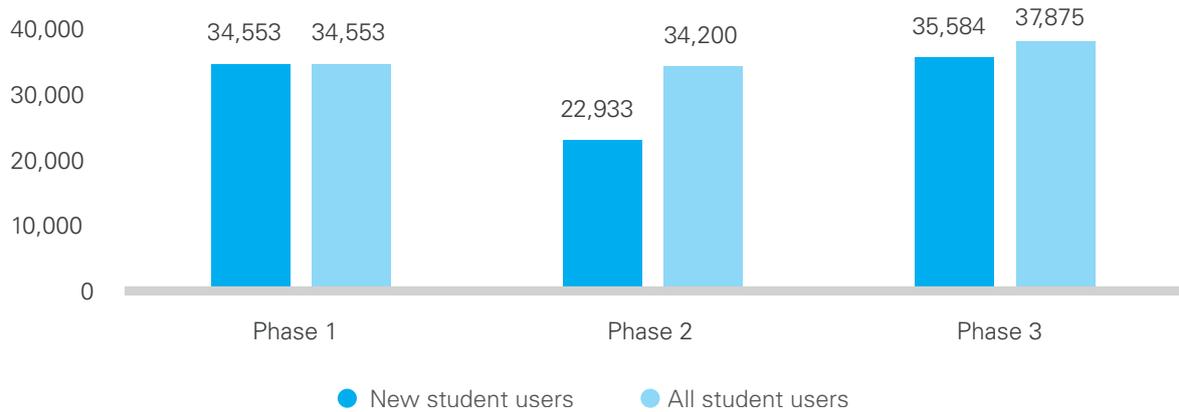### 2.1. Teacher and student registration

The programme registered 3,800 teachers during phases one to three and a total of 300,000 students were registered by teachers. Teachers were invited to a training workshop around the start of each phase, where they registered as platform users. Following the training, teachers registered their students on the *Pasaporte al Aprendizaje* platform, so peaks of student registrations typically followed teacher training. In feedback collected from teachers after phase one, teachers mentioned that training workshops and an adequate lead time before in-person classroom activities enabled them to register their students. Teachers explained that if the platform were introduced only after the semester started, there would be insufficient time to learn how to use the platform and integrate it into their pedagogical approaches. This is because not only do teachers need to familiarize themselves with the content on the platform, but they also need to identify students most in need of remedial learning courses and for which subjects. When teachers register a new batch of students, they create groups of students and assign them to specific courses. On average, each teacher created around five groups. Appendix 1 shows the distribution of groups created by teachers. The figure in Appendix 1 indicates that there was notable variation among teachers in terms of the number of groups they created. Some teachers created fewer groups, suggesting that they utilized the *Pasaporte al Aprendizaje* for a few specific activities or focused on specific groups of students. On the other hand, some teachers created a higher number of groups, indicating that they used the platform across a broader range of learning activities and potentially assigned different courses to various groups of students.

2.2 Platform engagement

Around 93,000 students actively engaged with the platform across phases one to three, completing at least one lesson or quiz in a course. More than 30,000 students actively used the platform during each phase of implementation. Moreover, in phase two, approximately 11,000 users continued to use the platform from the previous phase, even when the implementation focused on different schools in phases two and three. This could also reflect continued use by teachers to assign courses to their students even after the phase is over, despite participation being voluntary. Figure 2 shows both the total number of new active users in a phase as well as all users who interacted with the *Pasaporte al Aprendizaje* in that phase.

2. Further information on Microsoft Community Based Training is available at <https://communitytraining.microsoft.com/>.

Figure 2: Student users

	New student users	All student users
Phase 1	34,553	34,553
Phase 2	22,933	34,200
Phase 3	35,584	37,875

● New student users   ● All student users

Student use of the platform varied by week, gaining momentum at the start of a new phase.
Figure 3 shows the number of users that engaged with the platform each week. The first red line denotes the start of phase two, and the second, phase three. Use of the platform varied markedly by week, with an average of 2,500 users per week and a peak of more than 7,000 users in phases two and three. Figure 3 shows peaks of users after each teacher training. This confirms that teacher training not only facilitated teacher registration, but also led to engagement with the platform.

## Figure 3: Active users, by week and phase
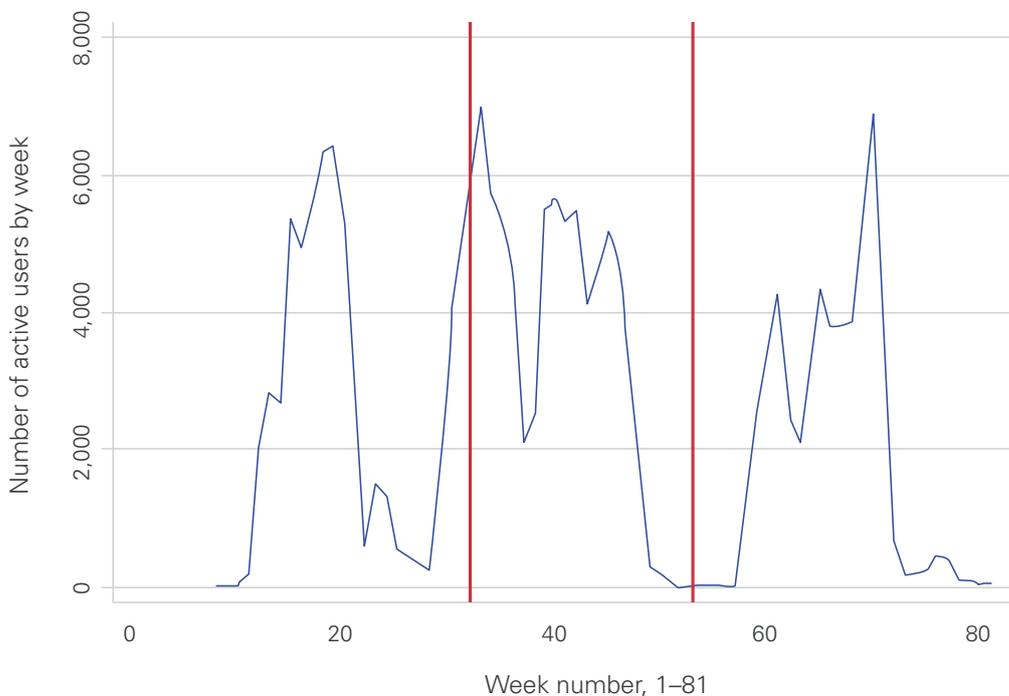
Note: Across the weeks, there were a total of 188,937 active days across all users.

Student engagement and time spent using the *Pasaporte al Aprendizaje* platform increased notably between phases. Figure 4 shows that more than 20 per cent of students engaged with the platform for a week or more. In the early phase of the program, as it was being improved, half of the students used the platform

only once or twice, but had high levels of activity within the day they logged on as they completed many lessons within a course. In phase three, students started to engage more frequently with the platform. On average, students were active for three to five days during a phase. Phases typically lasted three to four months, depending on the school calendar, which included 84 days in phase one, 85 days in phase two and 110 days in phase three. Activity increased on the platform before school exams, specifically for mathematics and Spanish, indicating that it was used for exam preparation in core subjects. Among all the available courses, mathematics, Spanish and English were the most popular courses.

Figure 4: Percentage of students, by the number of active days across phases
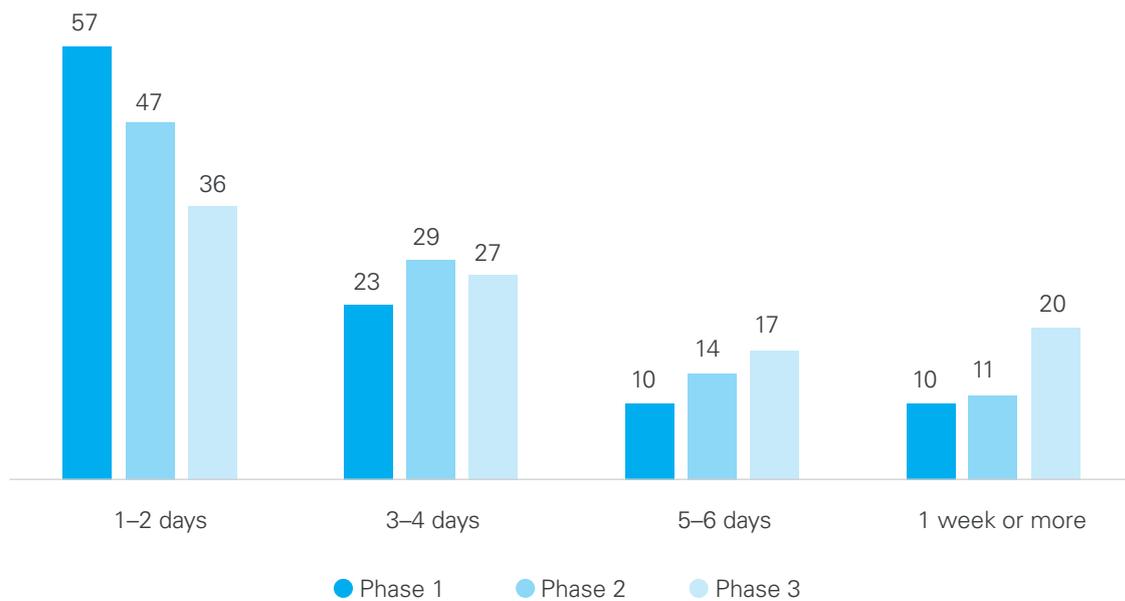
Course completion rates vary across each phase, with an average progress rate ranging from 60 per cent to 70 per cent. Mathematics 6 and Spanish 2 courses stand out with the highest overall completion rates, as indicated in Figure 5.[3] This suggests that teachers may be utilizing and incorporating the *Pasaporte al Aprendizaje* into core subjects. To gain a deeper understanding of the progress made by users throughout the phases, Figure 6 shows the mean progress across phases. Progress rate is defined as the number of lessons or quizzes completed by a user within each course out of the total lessons in the course. Each course had between 60 to 300 lessons, with some courses being longer than others such as English 3 and 4. Appendix 2 provides information on the number of lessons within each course. On average, users had progressed through at least 60 per cent of different courses. Further analysis and exploration of the factors contributing to course progress and completion could provide valuable insights for future phases and digital content development.

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3. The numbers following the subject name of a course are used to organize course content, but do not refer to a grade level. Each subsystem administrator can use courses and course content as they prefer, according to their syllabus. In general, courses taught in Grade 10 include Mathematics 1 and 2, English 3, Chemistry 1 and Spanish 1. Grade 11 courses generally include Mathematics 3 and 4, English 4, Spanish 2 and Chemistry 2. Grade 12 students are generally directed to Mathematics 6 and Physics 1.

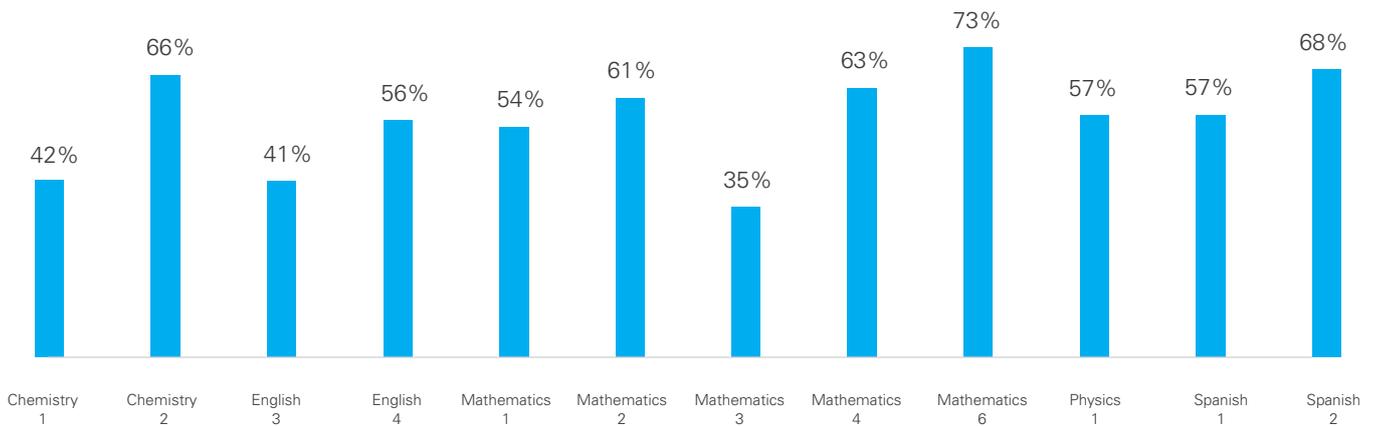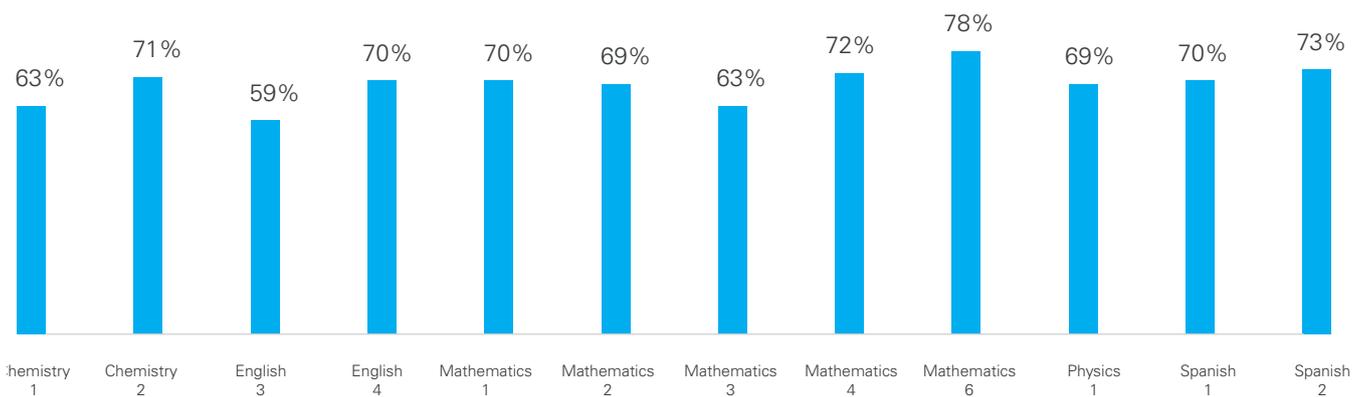## Figure 5: Per cent of enrolments who finish a course

Course	Value
Chemistry 1	42%
Chemistry 2	66%
English 3	41%
English 4	56%
Mathematics 1	54%
Mathematics 2	61%
Mathematics 3	35%
Mathematics 4	63%
Mathematics 6	73%
Physics 1	57%
Spanish 1	57%
Spanish 2	68%

Figure 6: Mean progress through the course

| Course	Value
Chemistry 1	63%
Chemistry 2	71%
English 3	59%
English 4	70%
Mathematics 1	70%
Mathematics 2	69%
Mathematics 3	63%
Mathematics 4	72%
Mathematics 6	78%
Physics 1	69%
Spanish 1	70%
Spanish 2	73%

2.3.   Learning

Scores between the initial and final course assessments improved on average. Each course contains pre- and post-learning assessments consisting of either 20 or 40 multiple-choice questions. All courses also have many shorter practice quizzes dispersed within the course. Out of the 93,075 active student users in phases one to three, 87 per cent of them (81,243 students) completed at least one assessment (either pre- or post-), while 75 per cent (70,140 students) completed at least one practice quiz. Students showed high engagement in quizzes, completing on average 8.2 quizzes per course. Among students who took both pre- and post-assessments, an average improvement in test scores was observed. It is important to note that the initial and final assessments within a course are identical, making them comparable. The platform does not show students which questions they answered incorrectly nor does it show the correct response for any questions. The graph on the left in Figure 7 illustrates the average improvement among students who took both tests. Large improvements in test scores are seen in courses such as Physics 1 and Chemistry 2. The graph on the right shows the total number of students who completed both pre- and post-assessments in each course.

The highest completion numbers are for Spanish 1 and Mathematics 1, both courses typically introduced to Grade 10 students, the youngest of the three grades. Conducting further analysis, such as further interviews with teachers, may provide insights into the reasons behind these patterns.

Figure 7. Improvements in scores between pre- and post-assessments as well as total assessment completions, by course

Exam scores by course, phases one to three

Students who completed both pre- and post-assessments
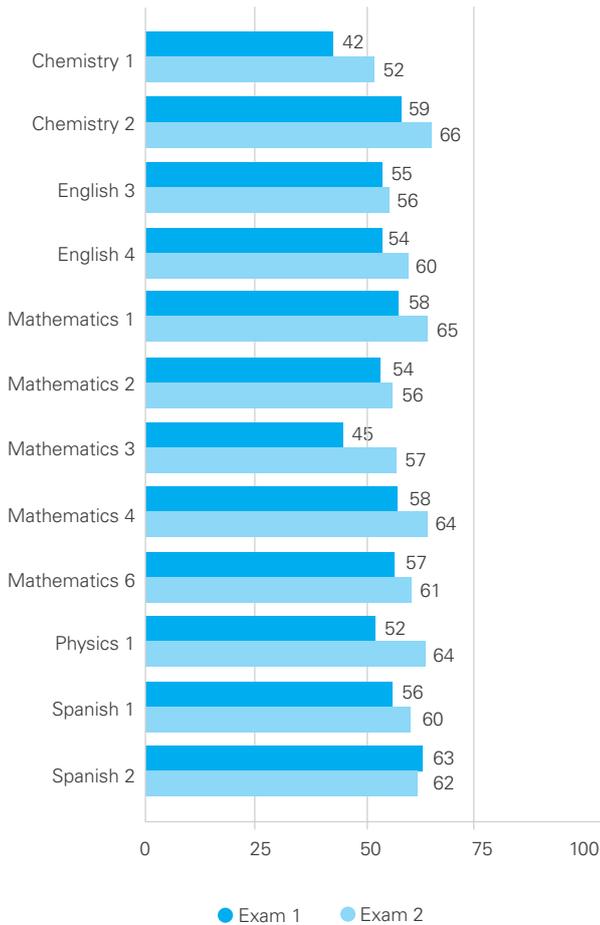
Note: In phases one to three, courses were still in the process of being developed and finalized.
59,331 students took both pre- and post-assessments, accounting for around 73% of all students (81,243) who took exams.
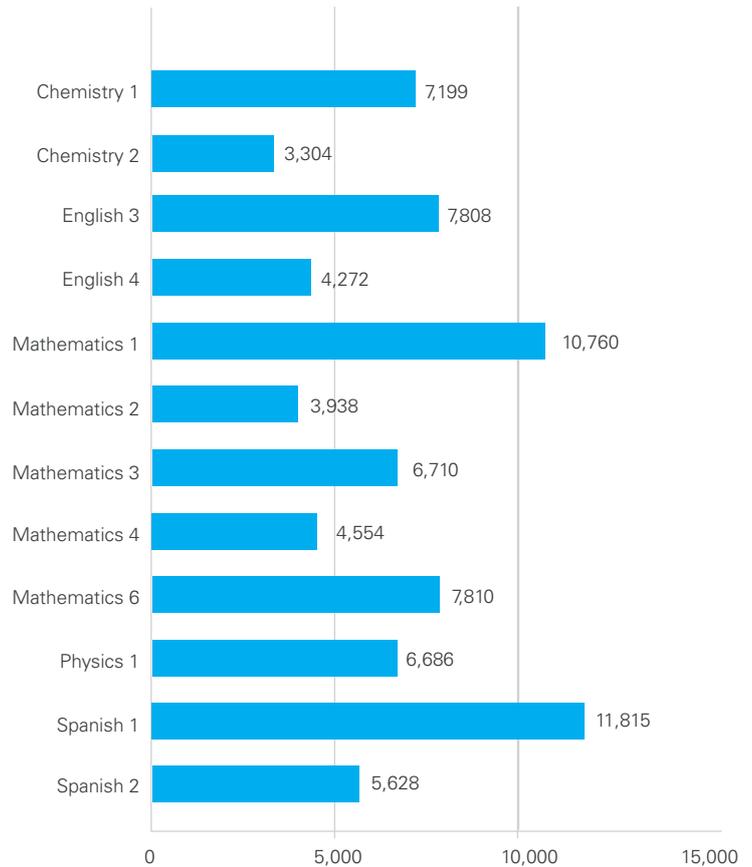
Note: In phases one to two, courses were still in the process of being developed and finalized. Each bar represents the total number of students who completed both the pre- and post-assessment in each course, in phases one to three.

Conclusions and recommendations

Findings from back-end data indicate that the implementation of the *Pasaporte al Aprendizaje* in Mexico not only served as a valuable response to the COVID-19 pandemic, but also proved to be an effective complementary tool after schools returned to normal operations.

1. **Student and teacher engagement increased over time.** While progress on many national digital learning platforms stalled after COVID-19 (UNICEF, 2022), the use of Pasaporte de Aprendizaje increased after COVID-19. With buy-in and support from the MoE and partners, the Pasaporte al Aprendizaje registered more than 93,000 active users and increased engagement with lessons and courses over time.

2. **Assessment scores improved after completing courses.** As measured by pre- and post-assessments integrated within the platform, students' scores improved in core subjects including mathematics, Spanish and science. Further insights into the positive results could be obtained by additional research on the key drivers of these positive results and testing different types of implementation modalities.

3. **Multiple implementation and design choices were identified as critical for the implementation of the *Pasaporte al Aprendizaje* in Mexico, and should be considered by other countries developing similar digital learning programmes.**

   - **A clear use case to recover foundational learning with a phased approach and targeted users** provided room for improvements over time.
   - **Curriculum-aligned flexible content** provided teachers and students with additional engaging resources and new interactive ways to learn and measure learning.
   - **Teacher training and ongoing support** gave teachers the necessary skills, confidence and motivation to deliver and integrate the platform as part of their teaching practices.
   - **Teacher-led implementation and flexibility** in the usage of the platform allowed teachers to adapt the use of the platform to meet their students' needs.
   - **Strong coordination and involvement by government partners,** including CINVESTAV, the Vice-Ministry for Upper-Secondary Education, UNICEF and Microsoft ensured a well-rounded and comprehensive approach to the programme design, development and implementation.

While the initial phases of the programme implementation highlighted these critical factors for success, to ensure the program's continued success and effective scalability, there are several recommendations for further research to inform improvements in the programme:

1. **Conducting qualitative research in schools to understand teacher practices,** for both highly engaged and less engaged teachers, would provide valuable insights. This understanding could inform strategies to better support teachers' integration of the platform into their teaching practices and improve overall engagement.

2. **Investigating motivation levels and digital skills among both teachers and students** can offer insights into the drivers behind engagement. This information can help tailor strategies to enhance motivation and participation, ultimately leading to better learning outcomes.

3. **Rigorously measuring the impact of the platform** and how its use and the improved scores on the platform translate into tangible improvements in learning outcomes at classroom level.

As the *Pasaporte al Aprendizaje* programme expands, an offline version will soon be available in Mexico. This offline version aims to offer the same learning experience to students who may not have an internet connection, ensuring wider access to the programme and its benefits. A similar analysis with built-in monitoring mechanisms will play a key part in the successful implementation of the offline model. This will benefit not just improved programme delivery in Mexico, but across regions as blended learning programmes are mainstreamed in the education system.

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United Nations Children's Fund (UNICEF), 2022, Pulse Check on Digital Learning, UNICEF, New York, <www.unicef.org/media/132096/file/Pulse%20Check.pdf>.

UNICEF and the Undersecretary of Higher Secondary Education, n.d., 'Pasaporte al Aprendizaje Mexico', Microsoft, <https://mexico.learningpassport.org/>, accessed 6 September 2023.

Appendices

Appendix 1: Number of groups created, by teacher
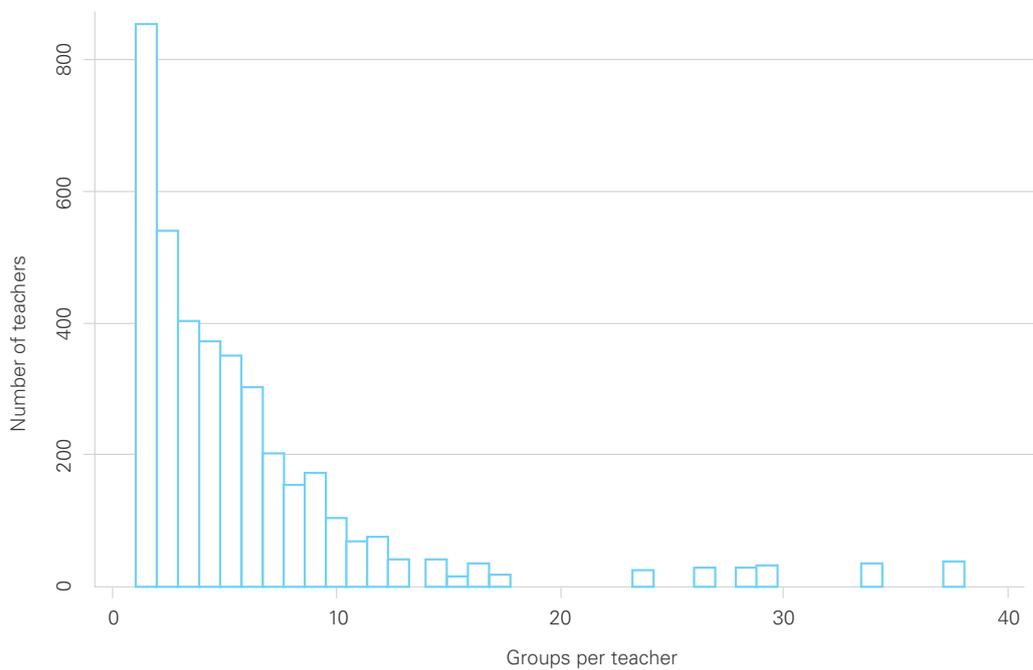
Note: A total of 7,965 groups were created by 1,574 teachers for an average of 5 groups per teacher.
Around 22% of teachers created 1 group while around 90% created 11 groups or less.

Appendix 2: Number of lessons and quizzes in each course

Course name	Number of published lessons and quizzes
Chemistry 1	88
Chemistry 2	100
English 3	299
English 4	193
Mathematics 1	68
Mathematics 2	101
Mathematics 3	63
Mathematics 4	91
Mathematics 6	106
Physics 1	113
Spanish 1	79
Spanish 2	81

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