



LEARNING BRIDGES

IMPACT STUDY

JANUARY 2022

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LEARNING BRIDGES

Impact Study

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Executive Summary



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The result of school closures across the world has led to countries reviewing their educational offer with a greater emphasis on blended learning. This is to ensure that students can continue learning remotely, with support from their teachers and, where possible, for learning to be combined with face-to-face teaching in school. Provision also needs to be made for students who do not have access to technology, and who are often among the most vulnerable.

In Jordan, the Ministry of Education (MOE), with UNICEF support, launched [Learning Bridges](#) in September 2020. Learning Bridges is a national blended learning programme, to help students from Grades 4 to 9 recover and accelerate their learning following the disruption caused by the COVID-19 pandemic. The programme links printed materials with online resources to provide weekly activities based on core curricula. This innovative approach links textbooks and technology, school and home, and subject knowledge with applied learning. Every child in Grades 4 to 9 receives an A3 printed activity pack weekly with guidance on how parents can support. Every activity pack has its own QR code linking to additional online resources. Audio files are embedded to provide accessibility for children with visual impairments or that have difficulty reading.

This blended and remote learning programme

is designed to support students to recover lost learning from the previous year, and accelerate learning in the new academic year, regardless of the availability of face-to-face teaching. Learning is accelerated by using a cross curricular approach where the activity pack provided to students links together the key learning outcomes in the core subjects of Arabic, English, Mathematics and Science for that week's planned curriculum. Learning is recovered as students have access to a range of carefully chosen media resources that ensures they can work at their own pace, selecting resources where they need to build up understanding from the previous year's curriculum. Life skills are embedded in each of the weekly activities.

To support teachers and community facilitators, UNICEF and the MOE developed an [online training programme](#) to strengthen teachers' pedagogical understanding of blended learning, as well as providing practical ways to utilise the Learning Bridges resources. For every activity pack, teachers receive a guidance sheet on how to introduce the activity, support the student's learning and give feedback. By using the QR code, teachers also have access to [extra resources](#) to help them and their students. Learning Bridges Champions selected from among teachers and supervisors, encourage teachers to take part in the programme and to share good practices.

Parents are essential in supporting their children to learn and develop proactive study habits. Every student activity pack comes with instructions for parents on how they can help and become involved in their child's learning, without expecting parents to replace the role of the teacher. UNICEF has also developed a short series of videos and social media messages to encourage parents to support their children's love of learning.

Aims and Methodology

This study is not an evaluation, but rather a study undertaken to capture lessons learned from the design and implementation of the Ministry of Education Learning Bridges programme.

The report is structured around six main themes which emerged from questions that informed the surveys and interviews:

- What was the reach and engagement of Learning Bridges?
- What was the response to the cross-curricular approach?
- Was it possible for students to apply learning from the curriculum to practical application in the home environment?
- To what extent did technology play a role in the Learning Bridges programme?
- Was Learning Bridges able to link home and school effectively?
- What were the benefits and challenges of implementing the programme?

The impact study was designed by Education Development Trust (EDT) as a mixed-methods approach including surveys, interviews and

focus group discussions with a variety of key stakeholders, as well as drawing on data already collected by UNICEF and the MOE. The below findings and recommendations are based on the outcomes of this study.

The report aims to build an understanding of the impact that Learning Bridges has had on Jordan's education system, considering the benefits, challenges and opportunities encountered by the MOE, parents, teachers and students. It also reflects on how the programme could be sustained and have wider impact in the future.

Key Findings

Reach and Engagement

In the first year of implementation, Learning Bridges reached almost half a million children and was implemented in over 70 per cent of public schools with Grades 4 to 9, representing 61 per cent of all children in the targeted grade groups. Initially only 24 per cent of students that participated in semester one were boys, increasing to 35 per cent in the second semester.

Learning Bridges was designed as a programme that could be fully paper-based, with QR codes providing links to additional resources provided online. This was intended to overcome the lack of technology faced by low-income families and families living in remote areas. In the first semester, 392,284 students (54 per cent girls) including all children in refugee camps received printed Learning Bridges materials. UNICEF also provided monthly 10GB data packages to over 1,000 teachers and all 33,000 students across 54 schools in Syrian refugee camps, to support access to remote learning.

Between March and May 2021, there were

By February 2021



30,000

TEACHERS

have enrolled in the online training for Learning Bridges



20,000

TEACHERS

have received a certificate on completion

61%

OF STUDENTS

in Grades 4 to 9 engaged in Learning Bridges activities.

over 432,000 visitors to the UNICEF Learning Bridges page. Materials were also available through the MOE website and their DARSAK online learning platform.

The Learning Bridges materials were based on the principle of universal design for learning, to enable children of a wide range of abilities to engage and learn.

Open-ended activities allowed children to work at their own level based on what they knew and could do. The project-based approach also allowed students to investigate and experience their surroundings and integrate gained knowledge into their daily lives, bringing their theoretical knowledge into action which contributed to building children's critical and problem-solving skills. Audio recorded resources ensured accessibility for children with visual impairments or poor literacy skills.

Learning Bridges Champions, selected from among teachers and supervisors, provided vital support to principals and helped secure the engagement of schools, particularly to increase participation of teachers in boys' schools. The Learning Bridges Champions interviewed all commented on their strong belief in the value of Learning Bridges, and their efforts made to encourage school principal participation.

The impact of Learning Bridges on teaching and learning

While Learning Bridges provided continuity of learning for nearly half a million children during school closures, the more lasting impact may be on the quality of teaching and learning in Jordan. The Learning Bridges programme has enabled teacher innovation and introduced the integration of subjects through a cross-curricular approach. The programme is now included in the MOE's Education During

Emergency Plan – with budget committed – as a key strategy to support children's learning recovery.

For the Learning Bridges concept to work, it had to be based on key curricular outcomes. The MOE reviewed the curriculum and identified key learning outcomes across the four core subjects for each of the grade groups 4 to 9. Cross curricular weekly Learning Bridges activities are aligned directly to weekly taught content for each grade group and learning outcomes are detailed on activity sheets for teachers, students and families. This contributes to making curriculum delivery more effective and accelerates learning.

This approach created the space and opportunity to re-imagine the delivery of the curriculum. All respondents at the MOE level noted this to be one of the most appealing design features of Learning Bridges and the integration of subjects was viewed as one of the greatest successes of the programme. Respondents felt this was beneficial to their own practice, exposing them to alternate ways of creating learning content, and encouraging them to think in new ways.

Teachers have been challenged through Learning Bridges to think and act creatively towards the curriculum – to provide alternatives to complement the textbook. The programme has introduced supervisors, principals, teachers and students in Jordan to new ways of teaching and learning. These included problem-solving, investigation, research and experimental skills, as well as technology skills needed to engage in more innovative and participatory pedagogy. Over 30,000 teachers enrolled in online training for Learning Bridges, gaining skills on interactive pedagogies needed to support distance education, and 20,000 teachers received a certificate upon completion.



Recommendations

Given that Learning Bridges was designed as an emergency response, there are numerous opportunities to further strengthen and adapt the programme for the 2021/22 academic year and beyond. The following recommendations were identified through the impact survey:

Reach and Engagement

- **Lack of technology, connectivity and/or parental support:** Many children in Jordan lack the technology, connectivity and/or parental support to enable them to engage in Learning Bridges when studying from home. To increase engagement among poorer households,

one solution could be to create linkages with Community Centres to establish Learning Bridges Clubs which can provide additional support to the most vulnerable children.

- **Ensure appropriate resources and timely access to printed materials:** In the first year of implementation, the weekly activities were designed in real time. In year two, resources can be provided in one booklet for students with an accompanying teacher guide. The experiments and activities in the Learning Bridges programme should be reviewed to ensure that they are suitable for students from all backgrounds.

- **Consider further inclusion, scaffolding and differentiation:** In year two of implementation, Learning Bridges resources can continue to be used as a resource for teachers to accelerate and scaffold learning. There is also an opportunity to develop online resources further, with more scaffolded activities given the scale of learning loss after school closures. The programme could also consider developing additional accessible material suitable for a greater range of (dis)abilities.
- **Strengthen the linkage between school and home:** The links between school, home and community could be strengthened further to ensure all children are supported. This can be done through the continued use of social media and other channels to explain the Learning Bridges programme and to show how parents can support it. Referrals can also be made between schools and Learning Bridges Clubs established in community centres for vulnerable children.
- **Strengthen feedback loops:** Learning Bridges can continue to support the development of teacher's skills in formative assessment and to create spaces for discussion on the benefits of feedback for students.
- **Further embed the cross-curricular approach:** The MOE should continue to ensure that schools and learners can use Learning Bridges in a cross-curricular way and that teachers can identify the curriculum links.
- **Enabling teacher innovation:** The MOE could continue the practice of nominating Learning Bridges Champions in each Directorate to ensure effective implementation of activities is promoted and the continuation of sharing good practices. This has been shown to have particular value in motivating the engagement of male teachers and schools.
- **Expand the scope of Learning Bridges:** Learning Bridges could be expanded to cover more subjects and to be accessible to more grades, particularly Grade 10. Learning Bridges activities for older students can be designed to help students reflect on what career options they have, needed given gender biases in career pathways and low female rates of participation in the work place.

Strengthening the impact of Learning Bridges on teaching and learning

A number of opportunities were identified to further strengthen the impact of Learning Bridges on teacher innovation, use of technology and cross-curricula delivery.

- **Expanding the use of technology:** Learning Bridges has provided an opportunity to integrate technology into teaching and learning and has upskilled teachers. This was an aspect of Learning Bridges which teachers, parents and students hoped would continue.

Responding to COVID-19 school closures in Jordan





Jordan, like all countries around the world, took a quick decision to implement a lockdown when COVID-19 broke out, bringing almost all social and economic activity to a halt. On 15 March 2020 the Government of Jordan closed all schools, kindergartens and universities, a move that impacted 2.37 million learners. Schools reopened partially on 1 September 2020 but were once again fully closed later that month. The closure affected all schools, whether public or private sector, or United Nations Relief and Works Agency for Palestinian Refugees (UNRWA). But closing schools should not stop teaching and learning, and the Ministry of Education (MOE) moved fast to ensure education could continue for students from Grade 1 to Grade 12. Education moved to online spaces and was delivered via remote modalities.

Working through the Ministry of Digital Economy and Entrepreneurship, and collaborating with other civil society organizations that provide online platforms including Edraak and Abwaab, the government quickly established an online learning platform. The MOE launched low-tech and high-tech teaching and learning materials, such as introducing [DARSAK](#), an online platform, and TV channels to share educational content covering core subjects for all grades.

The MOE also developed an [Education During Emergency Plan](#), and UNICEF, alongside other agencies and donors, was quick to put in place solutions to keep students learning. UNICEF's role was to work with the MOE to find a way to enable all 1 million children enrolled in Grades 4 to 9 to keep engaging and learning for the duration of the school closures.



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Grades 4 to 9 were the target age group as the MOE was more able to support Grades 10 to 12 through Microsoft teams - the more mature children were better able to manage online learning - while Grades 1 to 3 were supported by USAID through the well-established Reading And Mathematics Programme (RAMP).

The Ministry of Education launched low-tech and high-tech teaching and learning materials, such as introducing DARSAK, an online platform, and TV channels to share educational content covering core subjects for all grades.





The MOE also set out to support teachers during the school closures by providing much-needed professional development to help them manage online and remote learning. The MOE set up teachers.gov.jo, a platform developed for teachers which contained relevant and available online content. The content introduced teachers to distance-teaching tools, key concepts (such as blended learning) and appropriate teaching strategies, and the application of education technology to support learning.

UNICEF supported the MOE's efforts by providing technical as well as direct financial and programmatic support from the onset of the crisis. In spite of all these efforts, and perhaps because of the pressing need to provide an immediate response, there were a number of challenges that hindered provision of and access to quality education: First, most marginalized students were unable to access DARSAK and other platforms due to lack of smart devices or laptops, and limited data or connectivity. Second, teachers had minimal skills or preparation time to enable them to make the sudden move to online education. Third, the rote and didactic pedagogies which are typically part of some teachers' classroom practices are difficult to recreate online. Fourth, the curriculum was difficult to translate to an online and remote learning modality.

School was expected to resume in September 2020, but due to the need for physical distancing the plan was that students would rotate between a day of remote learning and a day of face-to-face. This hybrid model was initiated but lasted only a few weeks, when all schools were again closed for fear of an escalation in COVID-19 cases and insufficient medical resources to handle the pandemic. Grades 4 to 9 remained studying through a remote learning modality until September 2021, when face-to-face learning resumed. As of December 2021, almost fifty per cent of schools were still implementing partial or full rotation to ensure COVID-19 protocols for physical distancing. In addition, classes or schools close for a period of 5 days when positive cases reach ten per cent of the class or school population.

The Learning Bridges story





UNICEF took up the challenge to develop materials for Grades 4 to 9, as identified in Jordan's Education During Emergency Plan. The materials were to be developed for schools on the assumption that they would resume in September 2020 on a hybrid rotation model, where students would continue to work through the textbooks with their teachers when face-to-face, and work on the supporting activities remotely to apply knowledge learned from the textbook when they were at home.

2.1 Challenges in designing a Grade 4 to 9 programme

UNICEF identified some key challenges that would be involved in developing the materials. Given that students would have less time in school, the activities developed would have to speed up the curriculum and cover only key concepts. All children needed to be engaged with the materials, but since many students did not have access to technology, connectivity and data, this meant activities would have to be printed and distributed. However, the majority of students did have some access to technology and data bundles were distributed by UNICEF to many vulnerable students, so it was also possible to use technology as a platform to further support students with their learning.

To address the above points, UNICEF made a draft design of a potential programme that would be cross-curricular, intended to accelerate learning and to be applicable to daily life, so that students could develop life- and 21st-Century skills. The activities would need to be developed based on the typical materials a child would have at home and in the local environment, and if support was needed this would be provided by parents. Working with the Connected Learning

Centre in London, the idea of a 'padlet' was suggested, and this was developed as the basis for providing additional support to both children and teachers online.

2.2 The beginning of Learning Bridges

On 23rd June 2020 UNICEF and the Department for Curriculum at the MOE met to discuss how the Grade 4 to 9 programme could be developed. There was immediate agreement that a cross-curricular programme that integrated the application of skills to daily life and developed 21st-Century skills would be an approach everyone was willing to try. Over the next few weeks the Curriculum Department prepared the key learning concepts, and UNICEF, with an international consultancy, worked on possible templates to construct the activities. The first draft activities were then proposed.

The eventual form of the activities came as a full-colour A3 sheet (11¾ x 16½ inches) that folded into four sides. All of the activity sheets were in the same format. They started with learning outcomes for each of the core subjects, Arabic, English, Mathematics and Science, and listed the materials needed for students to complete them. Each activity sheet also provided a QR code to a padlet so students could get additional support. On the back of the activity sheet there was guidance for parents on how to support their children, but not teach them. A double-sided A4 (8¼ x 11¾ inches) guidance sheet was developed for teachers at the same time. This explained how to introduce the activities, identified different forms of assessment that could be used, and set out the typical misconceptions a student might have. It also had a QR code so teachers could find additional resources for teaching online.

In the early discussions between the MOE and UNICEF it was decided that the programme needed its own brand with a clear strap line that all could relate to. The programme was eventually named 'Learning Bridges', with the strap line and brand as shown in Figure 1.

2.3 The Learning Bridges concept

The idea of Learning Bridges came as a response to an immediate need to keep students engaged in the education process in such a way that their knowledge could be applied in their daily lives. Learning Bridges became a blended and then entirely remote learning programme designed to support students to recover lost learning from the previous year, and accelerate learning in the new academic year, regardless of the availability of face-to-face teaching.


Learning Bridges was launched by the MOE on 20 September 2020, billed as an innovative blended learning programme, supported by UNICEF, designed to help one million students recover and accelerate their learning following the disruption caused by the COVID-19 pandemic. Learning Bridges engaged with

existing spaces such as DARSAK and ensured a wide reach to students regardless of their nationality or socio-economic status and ability. It also engaged teachers, parents and the wider community. Findings (cited later in this report) demonstrate how it enabled half a million children to continue their engagement with education during school closures.


For the Learning Bridges concept to work, it had to be based on key curricular content. The Curriculum Department in the MOE led on a review of the curriculum and identified key learning objectives across the four core subjects for each of the grade groups 4 to 9. The plan was to accelerate by using a cross-curricular approach, where students are given an activity pack that links together the key learning outcomes in the core subjects of Arabic, English, Mathematics and Science for that week's planned curriculum. Learning is recovered as students have access to a range of carefully chosen media resources, ensuring they can work at their own pace, selecting resources where they need to build up understanding from the previous year's curriculum.

Learning Bridges

Learning Bridges was launched by the MOE on **20 September 2020** billed as an innovative blended learning programme, supported by UNICEF



designed to help



1,000,000
one million students

recover and accelerate their learning following the disruption caused by the COVID-19 pandemic.

Figure 1: Learning Bridges Theory of Change



2.3.1 Engaging all learners

Learning Bridges was designed to be a participatory, cross-curricular and inclusive programme. To ensure that students with no or limited access to technology could be reached, each activity pack was printed in hard copy and distributed by the school. A careful delivery mechanism was planned to support schools in being able to give the students the instructions needed to do the activities. Every student activity pack had instructions for parents on what they could do to help and become involved in the learning, without expecting them to replace the role of the teacher. Learning Bridges activities were designed to be completed off-line as practical activities using easily available resources in the home, garden or neighbourhood. Students were not required to have their own tablets, smartphones or laptops. Students were able to access the instructions for the activities and the resources at any time of the day using the online resource base, called a padlet.

Every activity pack has a QR code which links students to a padlet where their learning experience is scaffolded. Although the activities were at grade level, some children, due to lost learning, may not have understood the previous concepts on which the grade level was drawing. The padlet provided the extra resources to allow students to re-visit areas of lost learning to build up their understanding. It also gave them access to additional explanations and resources that would build understanding. The programme provided links to DARSAK videos and educational material; the design therefore aimed at scaffolding learning. Where possible, materials were placed on DARSAK and [UNICEF's Learning Passport website](#), as there were contracts already in place that allowed students free access to

these sites, and they were set up so that students incurred no costs for downloading data.

For Grades 4 to 6 the padlet also included full audio versions of the activities. Children had the option of having the activity read to them in smaller sections to support learning. Additionally, audio recorded resources enabled the inclusion of children with visual impairments.

2.3.2 A programme developed in partnership

'The idea of Learning Bridges came up because of COVID-19, but it is important to go on after the pandemic.' (MOE Official, Curriculum Department)

Learning Bridges was designed with and through the MOE. Initially, existing donor funds were reallocated by the MOE to enable project writers to be hired by the Curriculum Department and finance the initial print runs of Learning Bridges materials. Funding for the second year of Learning Bridges has been included in the MOE annual budget and work plan. The MOE is enthusiastic and committed to the programme, which guarantees buy-in by this key governmental institution, and hence the allocation of time and resources throughout the process of design and implementation.

During the second year the revision and writing of Grades 6 and 8 for the new school curriculum has been using a different approach. The project writers no longer require the support of an external consultancy, providing evidence that the approach has enabled all the writers involved to develop technical expertise.

Learning Bridges not only builds on existing work and initiatives created by the MOE and its departments, but also improves on the accessibility and relevance of the curriculum and pedagogical approach. This in turn enhances the possibility of long-term sustainable development of the education system. For example, Learning Bridges uses lessons recorded by the MOE and hosted by DARSAK. However, it was noted that DARSAK videos are often very long. Learning Bridges writers were therefore able to edit sections of these videos down to the most relevant points and ensure they were attractive to the learner. This also helped mitigate the challenge that links to videos on DARSAK are not always easy to find or access. The project writers selected the relevant sections of the videos that will scaffold the student's learning and reinforce the week's curriculum objectives. The selected videos were placed on the padlets, with the aim of introducing the concepts in previous grades, so as to scaffold learning where needed.

2.3.3 The stakeholders

All those engaged in the teaching and learning process were involved in each step of the programme, from teachers to parents, and from MOE staff to members of the community. This wide and active engagement required bridging skills and creating spaces to share knowledge and experiences. To support teachers and community facilitators, an online training programme has been developed by UNICEF with support from the MOE Education and Training Centre (ETC).

Because the programme developed in real-time, rather than being completely designed and finalized prior to its launch, new solutions were able to be put in place as challenges arose. For example, 126 Learning Bridges Champions were recruited in all 46 districts,

along with one Learning Bridges Focal point for each of the schools in refugee camps. Online notice boards showing teachers' and children's work were created using the padlet platform. This feature was added to the programme to promote creativity and share good practice, and the boards are now used by teachers and supervisors, with quality assurance provided by the Learning Bridges Champions. Additionally, many schools and districts have had Learning Bridges exhibitions to share their students' work.

All the templates of the Learning Bridges activity packs were originally designed by subject experts hired by Education Development Trust (EDT), the firm contracted by UNICEF to provide technical assistance to the MOE in programme design. The templates were sent to the curriculum department at the MOE, where the writers developed their own content and activities. This content was sent back to EDT for quality assurance. Within the produced material, there was a clear feedback loop to help teachers assess students' achievements and to provide guidelines on what are expected to be the most common misconceptions. The weekly activity themes are largely cross-curricular and open-ended. Some are project-based and others are related to a real-life context. All of the activity packs were designed to stimulate students' thinking and engagement in education as a real and life-long learning process.

Parents are essential in supporting their children to engage in learning and develop good study habits. UNICEF has developed a short series of videos and social media messages to guide parents to support their children's love of learning. These were used at the start of each semester to encourage families to engage with Learning Bridges.



All of the activity packs were designed to stimulate students' thinking and engagement in education as a real and life-long learning process.

To support teachers and community facilitators, UNICEF and the MOE produced online training to develop pedagogical understanding of blended learning, as well as to offer practical ways to utilize the Learning Bridges resources. Over 30,000 teachers have enrolled in the online training and 20,000 have received a certificate on completion.

With every activity pack, teachers receive instructions on how to introduce the activity, support student learning, and give feedback. Guidelines for teachers are printed in hard copy, and they also have access through the QR code to the guidelines, with additional resources to help them provide clear explanations to students. When schools began to work entirely remotely, the MOE and UNICEF worked together to create a video for each of the Learning Bridges padlets to introduce the activities to students, as teachers were no longer able to do this in school.

2.3.4 Research questions

This report has the following aims. Firstly, it is an investigation designed to understand the extent to which Learning Bridges enabled the MOE and UNICEF to meet the challenges identified in 2.1. There are six main themes that must be addressed in this respect:

- » What was the reach and engagement of Learning Bridges?
- » What was the response to the cross-curricular approach?
- » Was it possible for students to apply learning from the curriculum to practical application in the home environment?

- » To what extent did technology play a role in the Learning Bridges programme?
- » Was Learning Bridges able to link home and school effectively?
- » What were the benefits and challenges of implementing the programme?

Secondly, the report builds an understanding of the impact that Learning Bridges has had on teachers, students, parents and the MOE.

The report lays out the benefits, challenges and opportunities encountered over the duration of the programme, during the period when it was operating entirely on a remote basis, and sheds light on ways in which the programme can be sustained and have a wider and more significant impact in the future.

Methodology



3.1 Monitoring activities

During the implementation of Learning Bridges, the staff at the MOE and UNICEF wanted to understand how many students, teachers and parents were engaging with the activities and what more could be done to increase that engagement. To this end, a number of monitoring activities were set up.

Working with the MOE, UNICEF monitored the distribution and engagement of the printed activity packs in the districts through two surveys. The first Learning Bridges Directorate survey was conducted between late November and early December, 2020 in semester one of the 2020/2021 academic year, and a second survey was conducted from late April to early May, 2021 in semester two of the 2020/2021 academic year. UNICEF analysed these results, which are discussed in the findings. The district survey was designed to find out how many students and schools were engaging with Learning Bridges. In the first semester the survey also included questions about the extent to which teachers were engaging in the Learning Bridges training. The Learning Bridges Champions network was created to support the implementation of Learning Bridges, and the Champions were focal points for ensuring the surveys reached all schools.

UNICEF was able to track how many teachers had enrolled for the teacher training developed for Learning Bridges, as this was hosted on the Queen Rania Foundation professional development platform Edraak. However, the information available was limited to the number of people that had enrolled and the numbers of certificates that had been created.



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UNICEF was also able to monitor the views for each activity set up on the padlet tool. These figures were collected on a weekly basis and gave an indication of how much engagement there was with the technology. When the Directorate padlets were set up for the Learning Bridges Champions and schools it was also possible to monitor the activity on them.

Additionally, UNICEF was able to monitor the number of clicks on the materials based on UNICEF sites as well as the digital outreach generated from videos and other materials shared on social media.

These activities gave UNICEF a good indication of the broad level of engagement as the Learning Bridges programme was implemented, but did not give any real detail of how stakeholders were reacting to the programme and its content, nor what were the challenges and successes; this required a more in-depth impact study. UNICEF therefore hired EDT to design and implement an impact study.

Table 1. Sample and data collection approach by participants

Stakeholder	Data collection approach	Sample size
UNICEF and EDT	Interview	2
MOE Curriculum Department officials	Interview	4
Learning Bridges subject project writers	Interview	3
Learning Bridges Champions – supervisors	Interview	4
Learning Bridges Champions – teachers	Interview	4
Teachers	Focus groups	14
	Survey	4,368
Parents	Focus groups	14
	Survey	11,443
Students	Focus groups	14
	Survey	13,530

3.2 Design of the impact study

This study is not an evaluation, but rather a study undertaken to capture lessons learned from the design and implementation of the Ministry of Education Learning Bridges programme.

EDT designed the impact study as a mixed-methods approach. The study included conducting surveys, interviews and focus groups with a variety of key stakeholders (outlined in Table 1), as well as drawing on the data already collected by UNICEF.

Interviews were conducted between May and July 2021 and in September 2021. The impact study surveys were organized in coordination with the Directorates of Education and public schools in 12 governorates.

Due to ongoing COVID-19 restrictions across Jordan at the time the interviews and focus

groups took place, all data collection took place remotely.

3.3 Tools used in the impact study

All data generation tools were developed collaboratively between the UNICEF Jordan country office team, the MOE Curriculum Department and EDT, via a series of workshops.

3.3.1 Interviews and focus groups

Interviews were conducted by EDT consultants via video conferencing, and where necessary included an interpreter should the participant not speak English. Interviews lasted between 30 and 60 minutes. Focus groups were facilitated by MOE officials from the Curriculum Department.

3.3.2 Surveys with parents/ caregivers, teachers and students





Surveys were conducted using the Survey AnyPlace online platform. The link to the surveys was distributed to stakeholders via Learning Bridges Champions WhatsApp groups. The survey was open for 14 days.

3.3.3 Data collected from UNICEF

UNICEF generated quantitative data through two sources: accurate data from tracking of websites and padlets, and perception data from the district surveys. There is in fact a mismatch in the information collected during the district surveys, namely that the total number of Grade 4 to 9 pupils does not match: however, this does not affect the engagement statistics in the separate semesters.

3.4 Issues arising that affect the accuracy of the impact study

- Due to COVID-19 restrictions, the data was not collected in person but rather online. To mitigate the possibility of misrepresentation where there might be connectivity challenges, some data was collected by teachers who work in marginalized communities.
- In the survey of teachers, parents and students there is a skew towards female respondents. However, the large sample size still allows for meaningful analysis of the data from male beneficiaries.
- This study took place at a time when learners had been learning from home, on and off, for over a year. It is therefore difficult to disentangle general attitudes towards remote learning: sometimes it was difficult to know whether respondents were directly referring to working remotely in general, or via DARSAK, or Learning Bridges.
- The interviews were conducted in English with an interpreter when needed. This may have created a barrier for some participants, leading to less depth and quality in the data generated.

Key Findings



Second semester district survey results

72%

There are 3,220 public schools with Grade 4 to 9 classes, and of these 72 per cent reported implementing more than 50 per cent of Learning Bridges weekly activities by the end of semester two.

61%

Principals reported that 499,765 students in Grades 4 to 9 (61 per cent) engaged in the Learning Bridges activities.

10GB

UNICEF provided monthly 10GB data packages to all teachers and students in refugee camps to provide access to remote learning. These students also received printed copies of Learning Bridges.

432,000

For the period March to May 2021, Google analytics shows that the total number of visitors to the Learning Bridges UNICEF page was 432,000.

4.1 What was the reach and engagement of Learning Bridges?

'It [Learning Bridges] met an urgent need for providing remote learning, and a way of involving different stakeholders' (Official, MOE)

Learning Bridges provided an opportunity for a large group of children to continue to engage with learning during school closures. Many learners noted having limited access to learning resources at home, while teachers had limited skills in distance pedagogies.

The second semester district survey results gathered by the MOE show a high level of engagement by students. There are 3,220 public schools with Grade 4 to 9 classes, and of these 72 per cent reported implementing more than 50 per cent of Learning Bridges weekly activities by the end of semester two. Principals reported that almost half a million children - 499,765 students in Grades 4 to 9 (61 per cent of students in Jordan in Grades 4 to 9) engaged in the Learning Bridges activities.

Learning Bridges was designed as a programme that could be fully paper-based, with additional resources provided online. In the first semester, resources were produced and delivered as hard copies (in paper form) with QR codes for the online resources. Paper copies were intended to overcome the lack of technology for low-income families and in remote areas. In the first semester, 392,284 (48 per cent of students, of whom 54 per cent girls) received printed Learning Bridges folders, containing the first four packs of activities. As a result, children in remote communities, including those living in tented settlements, were able to engage with Learning Bridges.

In the refugee camps, with 33,000 students learning across 54 schools, UNICEF provided

monthly 10GB data packages to all teachers and students to provide access to remote learning. These students also received printed copies of Learning Bridges. The schedule of electricity was also changed to allow children to access televised lessons and online learning. However, connectivity and availability of devices remained a challenge, as reported by both students and teachers in the refugee camps.

Responding to the survey, teachers cited poor internet connectivity as a barrier to providing remote learning support. This was a comment on provision of remote learning and not specific to Learning Bridges. Teachers commented that they did not have appropriate devices to work from home, and that their internet connection was often unstable.

Learning Bridges online resources were initially available on the MOE and UNICEF websites. While the length of any video content was kept to a minimum, this still incurred a data cost for the user. However, by the second semester UNICEF and the MOE had embedded Learning Bridges into DARSAK, so providing free data access for those accessing online resources.

For the period March to May 2021, Google analytics shows that the total number of visitors to the Learning Bridges UNICEF page was 432,000. Over 350,000 visitors clicked on individual Learning Bridges activities with the intention of downloading them. Still, poor or inconsistent access to technology was highlighted as a challenge among some students in accessing Learning Bridges resources. 43.3 per cent of students responding to the survey indicated they were sharing a device used for learning purposes when learning from home.

There was no gender difference as to whether students reported they shared devices: 55.7 per cent of students were using smartphones to access learning materials, while 9.2 per cent of learners responding to the survey had access to a laptop or computer, and 8.2 per cent to a tablet. The majority of students, however, cited non-tech resources as their core resource used, with 65.9 per cent using textbooks.

As mentioned above, despite limited internet access many students used the online resources, and there was a high level of engagement as the programme moved forward. In December 2020 and January 2021 there was on average over 500,000 monthly views of the online resources. The use of the padlet and viewings of the website and online resources increased as schools became more familiar with this approach. Figure 2 shows that views on the padlet increased for all grade groups. Interestingly, although younger students often appear to have less access to devices, Grade 4 students made the most use of the padlet resources. By the end of March 2021, the total views per week were just below 200,000. The same pattern of engagement for teachers with the padlet is evident in Figure 3.



500,000

In December 2020 and January 2021 there was on average over 500,000 monthly views of the online resources.

Figure 2: Weekly Views of Padlet - March 2021

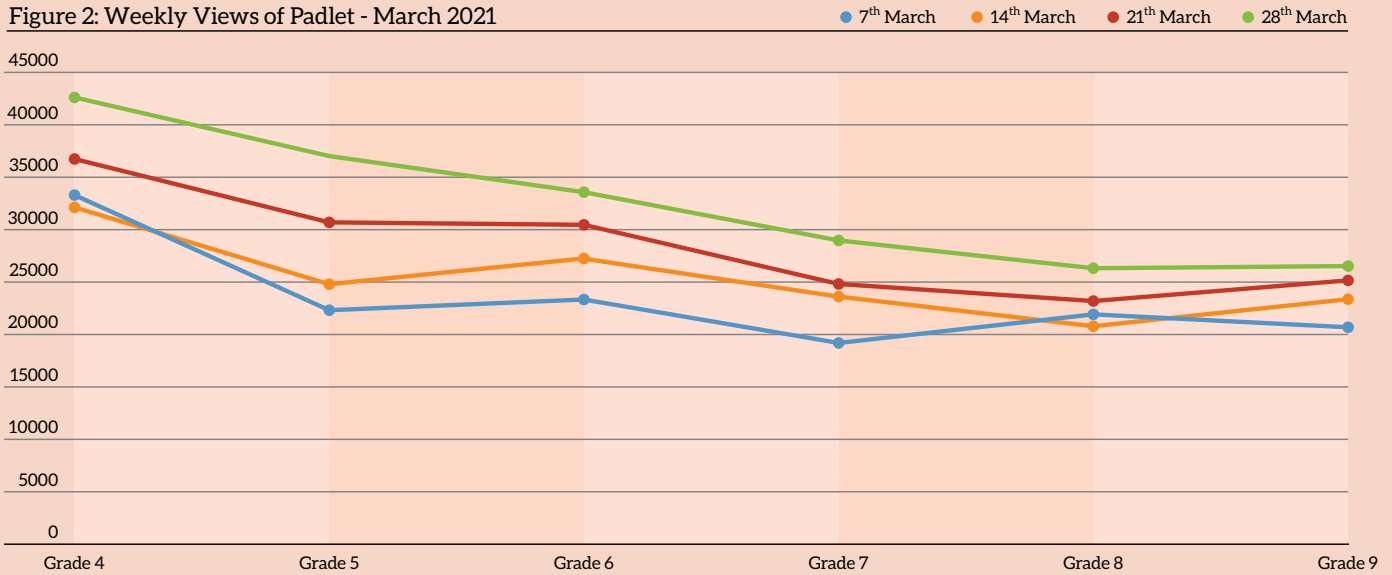
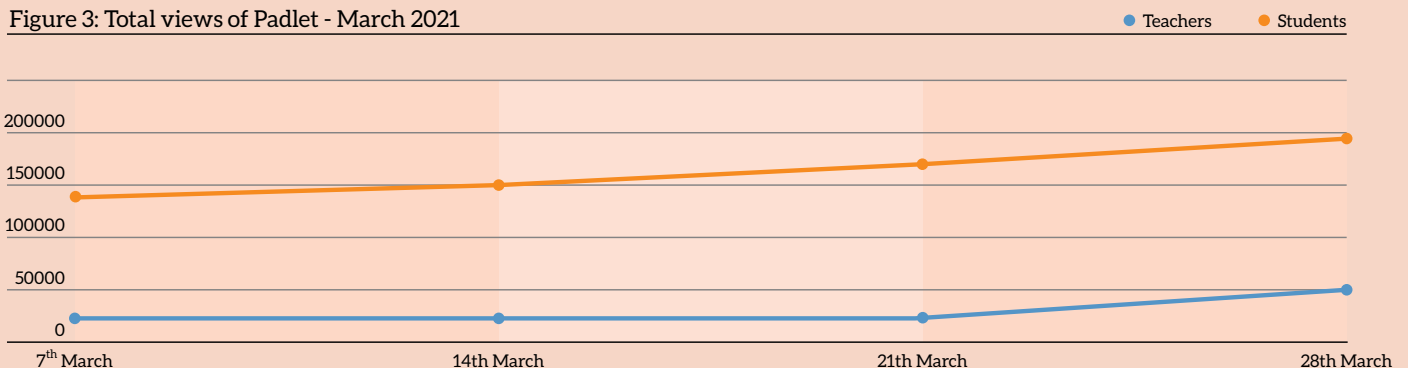


Figure 3: Total views of Padlet - March 2021



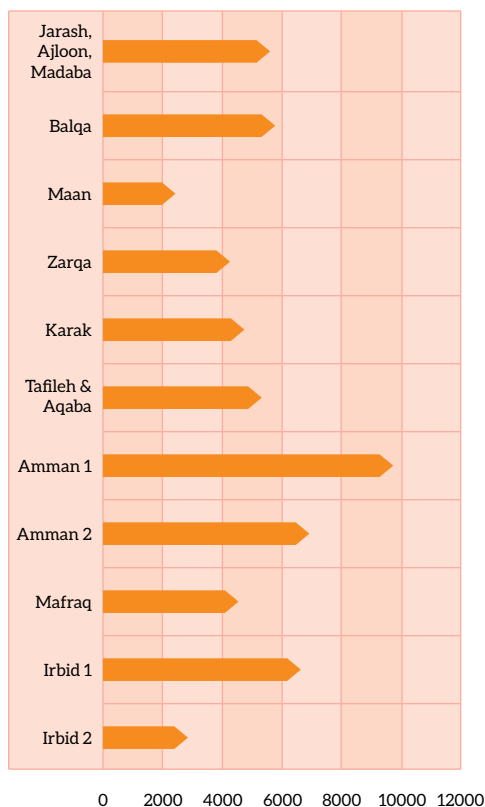
Teachers' engagement was tracked based on the posts they were making on the padlets which were set up for sharing good practice. As the Learning Bridges programme ended up being delivered entirely remotely, UNICEF was looking for a way to motivate teachers to share their experiences and encourage those reluctant to join in.

The padlets were set up for each governorate. Each padlet is split into districts with a column for girls' schools and a column for boys' schools. As governorates are of different sizes, the structure of the padlets reflected this variation in size with more than one padlet for some governorates and shared padlets for others. Figure 4 shows an example of a padlet for Irbid.

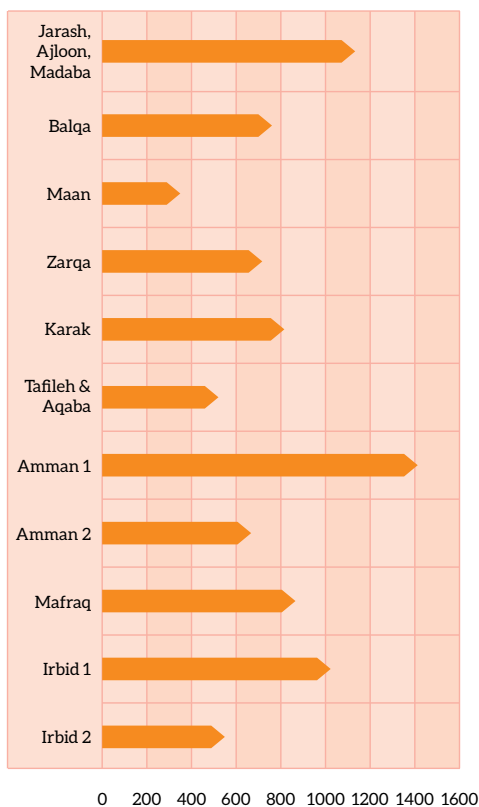
Figure 4: Irbid padlet example



**Figure 5: Posts on good practice
Nov 2020 - April 2021**



**Figure 6: Teachers contributing to Padlet
November 2020 - April 2021**



School year 2020/2021



8,806

TEACHERS
contributed to
the good practice padlets



58,545

POSTS
of students' and
teachers' work

The gender split in the organization of each padlet was deliberate. This was done in response to the data generated from the surveys and the anecdotal evidence that the participation of girls and girls' schools was higher than that of boys and boys' schools. To begin with, the columns under the girls' schools were well populated, while in some districts the boys' schools had no posts at all. This highly visible approach, along with appointing male Learning Bridges Champions in every district, did improve the participation of male teachers and boys.

Over the implementation in the school year 2020/2021 a total of 8,806 teachers contributed to the good practice padlets, and there was a total of 58,545 posts of students' and teachers' work.

During the school closures, a number of Directorates and schools held Learning Bridges exhibitions to share students' work. This enabled sharing of good practice between teachers, and also motivated student engagement with Learning Bridges activities. In Qasabat Irbid Directorate, around 150 schools were engaged in Learning Bridges exhibitions, including double shift schools for Syrian students. In Ein-Basha, Sahab, Madaba and Petra, over 60 per cent of schools reported holding Learning Bridges exhibitions. In Mafraq, around 80 schools actively participated in a Learning Bridges exhibition convened by the Directorate, with awards given to students, teachers and parents to celebrate their achievements.

4.2 What was the response to the cross-curricular approach?

Learning Bridges was not only an emergency response to enable children's continued learning during the pandemic; the programme has had a longer-term impact on the Jordanian education system by introducing the integration of subjects through a cross-curricular approach.

The integration of subjects was viewed by respondents as one of the greatest successes of Learning Bridges. It was seen as a particular benefit from the perspective of central-level participants in the Curriculum Department, who had previously wanted to integrate subjects but had not yet done so. It was hoped that this integration could continue in the future and be expanded beyond Learning Bridges into other areas of the curriculum.

Learning Bridges created the space and the opportunity to re-imagine the delivery of the curriculum through introducing cross-curricular approaches. All interviewees at the central level noted the cross-curricular approach of Learning Bridges as one of the most appealing aspects that motivated the implementation of the programme. The integration of different subjects was consistently noted as the most positive aspect of Learning Bridges. The MOE-level participants in the interviews and surveys indicated that linking together subjects had previously been considered, but that it had not been put into practice.



Learning Bridges created the space and the opportunity to re-imagine the delivery of the curriculum through introducing cross-curricular approaches.

'We had previously talked about integrating and connecting subjects, but had not yet done it.'
(MOE Official)

'One of the most exciting things with this programme is the ability to connect Maths by creating weekly exercises and linking them to other subjects for outcomes in the curricula. Different subjects were connected by one outcome and this was very very positive. They were all connected.' (Content Writer, MOE Curriculum Department)

'The best thing about Learning Bridges activities is that the activities are integrated with each other.' (Female Teacher)

UNICEF and the MOE worked closely and in partnership to design learning materials, along with EDT which provided the Learning Bridges framework and quality assurance. This enabled the capacity of the Curriculum Department to be developed, particularly in terms of cross-curricular ways of working. This approach also ensured that the design and implementation of Learning Bridges was integrated into the MOE programmes for sustainability.

Integrating subjects was embraced by all curriculum writers at the MOE, and they all welcomed the integration of their own subject specialism with others. They felt this was beneficial to their own practice, exposing them to alternate ways of creating learning content, and encouraging them to think in new ways. Writers felt that it created better working connections with other colleagues in their department and enhanced the quality of their work.

'It was very exciting on a personal level to be working with other subjects... being able to connect all the subjects together under the same outcomes and through practical experience.' (Curriculum Writer and Subject Specialist, MOE Curriculum Department)

When asked whether this way of working across subjects presented any challenges, particularly in relation to sensitivities around sharing work and receiving feedback from different subject specialists, all writers interviewed were positive, and suggested their relationships with colleagues were good.

'There were some difficulties at the start... some challenges around who checks comments first and when for example comments from the Maths team affect the work of the Science team... I have not come across any project like this before when working with the MOE. A long term approach is applied in the development of Learning Bridges activities.' (Curriculum Writer and Subject Specialist, MOE Curriculum Department)

4.3 Was it possible for students to apply learning from the curriculum to practical application in the home environment?

Learning Bridges aimed to develop 21st-century skills including autonomous learning and higher-order thinking skills such as problem-solving, communication, critical thinking, inquiry and creative thinking. Learning Bridges was designed to stimulate students' critical skills and engagement with their environment. One of the strengths of the programme is that the activities are open-ended, so students can show what they can do rather than being unable to engage. The learning is also scaffolded so that the children can go back to concepts from earlier grades.

Learning Bridges maximized opportunities for learning outside of school by providing opportunities for students to engage and show what they can do. As part of the survey, students were asked to share the things they liked or disliked about Learning Bridges. Some students shared a particular love of a subject, whereas others mentioned the development of particular skills such as problem solving, investigation and research. Real-life, problem-solving, critical thinking and experimental approaches were all spoken of positively.

'It motivates us to research, investigate, and increase our knowledge of various topics.'
(Student)

Learning Bridges introduced supervisors, principals, teachers and students in Jordan to new ways of teaching and learning. These included problem-solving, investigation, research and experimental skills, which were all noted positively and seen as a mostly new approach. The interviewees mentioned real-world teaching, project work, experiments and group work as all being interesting approaches to which many teachers and learners had previously not been exposed.

'It is different to other projects because one of the things it promotes is working on group projects for students, and it promotes many other skills such as critical thinking.'
(MOE Official)

4.4 To what extent has technology played a role in the Learning Bridges programme?

The use of technology has opened spaces for students to work in new ways and experience collaboration. Some students who uploaded their work onto social media spoke positively about the effect it had on their motivation. For some students, uploading their completed activities made them feel proud of their accomplishments. One student said it allowed them 'to benefit from it in the future and be a reminder of my achievement of activities.'

Other students uploaded their work to social media in order to provide support to other learners who might have been struggling to engage with activities, so they could review their responses. One student mentioned she uploads for her classmates who find it difficult to solve the material and another student shared that she uploads to help her classmates correct their wrong answers.

Other students responded that they went on social media to help them find answers by looking at their classmates' completed activities for the exercises they found difficult. Through the use of social media, therefore, Learning Bridges cultivated a collaborative way of working for many students to support one another remotely.

4.4.1 Increased skills in use of technology

Learning Bridges created an opportunity to integrate technology into teaching and learning. This will have a long-term impact on the education system as a whole. A number of teachers and supervisors noted they had increased their skillsets in the use of technology as a direct result of Learning Bridges. One supervisor noted learning how to use new video programmes after being impressed by what a Grade 4 student had developed.

It is important to emphasize the significance of the integration of technology into teachers' practice. A number of teachers indicated that the use of technology supported their work and provided them with long-term skills. One Learning Bridges Champion reflected on how they had upskilled their technology abilities as a result of Learning Bridges, and how teachers had had to do so also.

'Some of the teachers, and I am one of them, we have a video-making programme, I honestly could not do it, so I trained myself to do such programmes because some of the students produced wonderful videos, I was curious to do the same as a supervisor. A Grade 4 student in a video explained about the solar system, the sun and the moon... I had to learn how.' (Learning Bridges Champion, English Supervisor, Mafraq)

In response to what aspects the Learning Bridges programme should retain for the future, the continuing use of technology in teaching and learning was raised by teachers, learners and parents alike. The recording of videos and sharing work was noted by students in particular as an aspect of Learning Bridges they hoped would continue.

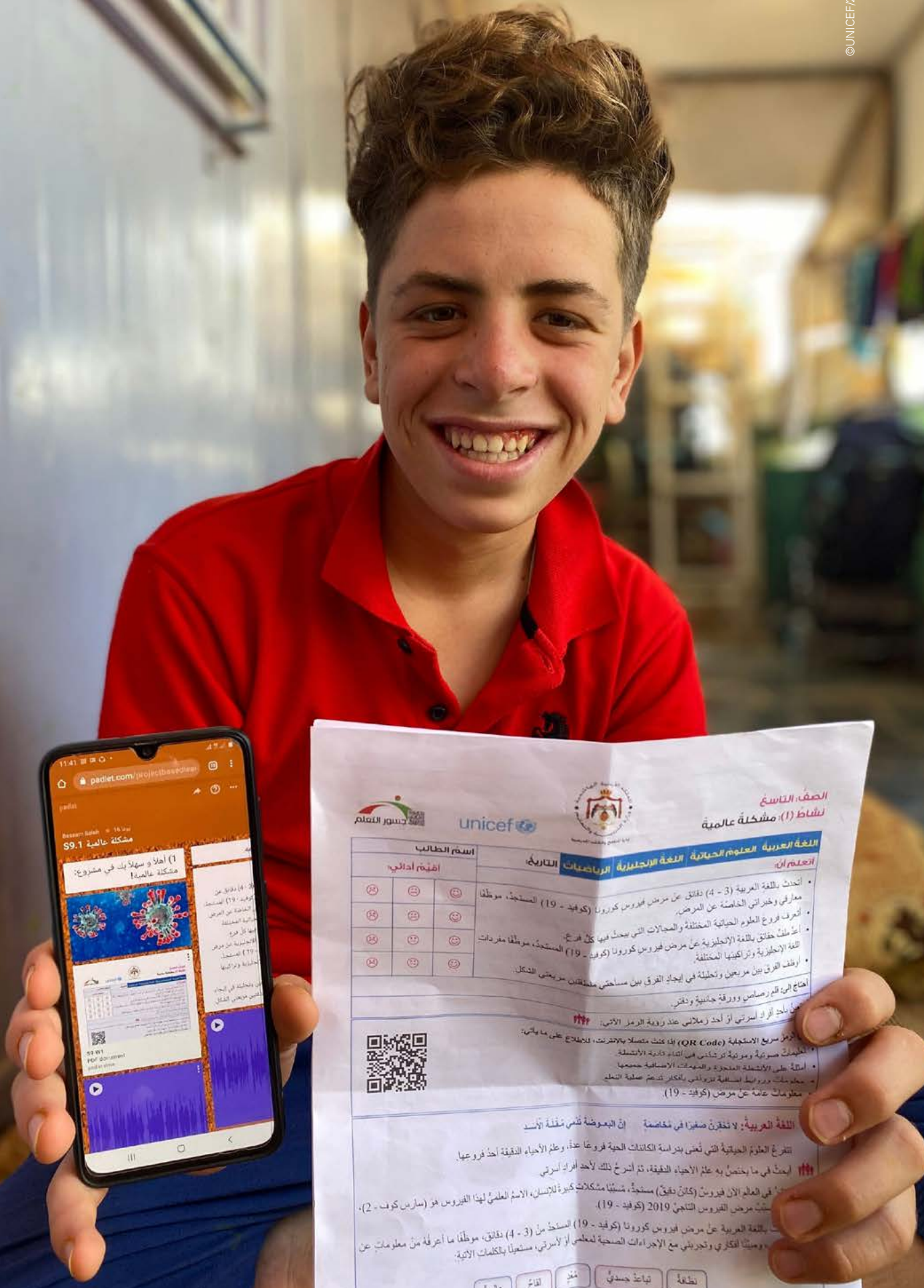
4.5 Was Learning Bridges able to link home and school effectively?

'Learning Bridges was appealing because it involved the parents into the student's learning and enhances the self-learning of students.' (MOE Official)

Learning Bridges was found to have enhanced communication and collaboration between schools, parents and students. MOE respondents noted that Learning Bridges provided an opportunity for parents to support their child's learning in a way that had previously not been tried. The MOE officials interviewed expressed the desire to build on the Learning Bridges approach to further engage parents in their children's education.

By providing parents with advice on how to give support through the weekly activity packs, and assigning them a clear role in relation to remote learning, the programme was able to provide structure to parental engagement. This was reflected in the 71.7 per cent of parents who responded to the survey by agreeing that their role in Learning Bridges was clear. However, some parents commented on the inconsistent engagement across schools, with two parents noting that their sons had received limited support to complete Learning Bridges activities compared to their daughters.

'In the first semester, only one activity arrived for my fifth-grade child. There was no interest from male schools.' (Parent of male and female students, Grades 2, 5 and 6, Amman)



الصف التاسع، النشاط (1) مشكلة عالمية

اسم الطالب	التاريخ	اللغة العربية العلوم الحياتية اللغة الإنجليزية الرياضيات
أحمد اداني		

تعلم أن:

- تحدث باللغة العربية (3 - 4) دقائق عن مرض فيروس كورونا (كوفيد - 19) المستجّد، موطّفاً معارفنا وخبرتنا الخاصة عن المرض.
- تعرّف فروع العلوم الحياتية المختلفة والمجالات التي يبحث فيها كلّ فرع.
- أعط ملّف حقائق باللغة الإنجليزية عن مرض فيروس كورونا (كوفيد - 19) المستجّد، موطّفاً مفردات اللغة الإنجليزية وتراكيبها المختلفة.
- أوظف الفرق بين مزيجين وتخلّطه في إيجاد الفرق بين مساحتي مستطيلين مربعين الشكل.

أضاح إلى: كلم رصاص وورقة جانبية ونقش.

عن يدي: أوك اسرتي أو أحد زملائي عند روية الرمز الاتي:

الرمز سريع الاستجابة (QR Code) اذا كنت متصلاً بالانترنت، لتتواج على ما يأتي:

- الطيمات صوتية ومربّبة ترتكبي في أثناء كتابة الاستجابة.
- املأ على الأنشطة المنجّرة والمسهّلة الإضافية جميعها.
- مجاناً وروابط استجابة ترواكي أفكار تدعم صحة التعلّم.
- معلومات عامة عن مرض (كوفيد - 19).

اللغة العربية: لا تفرّقون صغيراً في خاصية إن البعوضة تفسّ مقلّة الأندس.

تفرّغ العلوم الحياتية التي تفسّ بدراسة الكائنات الحية فروعا عدداً، وعلم الأحياء الدقيقة أحد فروعها.

اللغة الإنجليزية: أبحث في ما يخصّ به علم الأحياء الدقيقة، ثمّ أدرج ذلك لأحد أفراد أسرتي.

في العلم الآن فيروس (كائن دقيق) مستجّد، تشبّها مشكلات كثيرة للإنسان، الاسم العلمي لهذا الفيروس هو (سارس كوف - 2)، سبّب مرض القرويس الناجم 2019 (كوفيد - 19).

تحدث باللغة العربية عن مرض فيروس كورونا (كوفيد - 19) المستجّد من (3 - 4) دقائق، موطّفاً ما أعرفه من معلومات عن المرض ومبيّن أفكاره وتجربتي مع الإجراءات الصحية لمعلمي أو لأسرتي، مستعنياً بالكلمات الاتية:

تعلّمه تباث جسدّي نفث لقاخ عالمي

Younger students required more support in completing Learning Bridges activities than older students, as they were less likely to have the skills required for independent study. Parents of younger children were more likely to agree with the statement 'Supporting my children to complete Learning Bridges activities took up a lot of my time', compared to parents of students in older grades. Among parents of Grade 4 students 44 per cent strongly agreed with this statement, compared to 34 per cent of Grade 9 parents. When filtering for parents who only had a child in Grade 9 with no younger siblings in school, the proportion of parents who strongly agreed with this statement dropped to 20.7 per cent.

The majority of learners using Learning Bridges activities reported that they received support at home from parents, siblings or another adult in the home. Only 12.1 per cent of learners using Learning Bridges activities reported receiving no support at home (see Figure 8).

Teachers interviewed and surveyed generally believed that the learning material was pitched at the right level (Figure 9). However, during interviews and focus groups, some students commented that they would have liked more support, especially for the subject areas they found more difficult. For students who expressed negative attitudes towards Learning Bridges, they often cited a lack of support at home or from teachers which made the activities too difficult.

Figure 7: Parent agreement with statement 'Supporting my child(ren) to complete Learning Bridges activities took up a lot of my time' (N= 6,036)

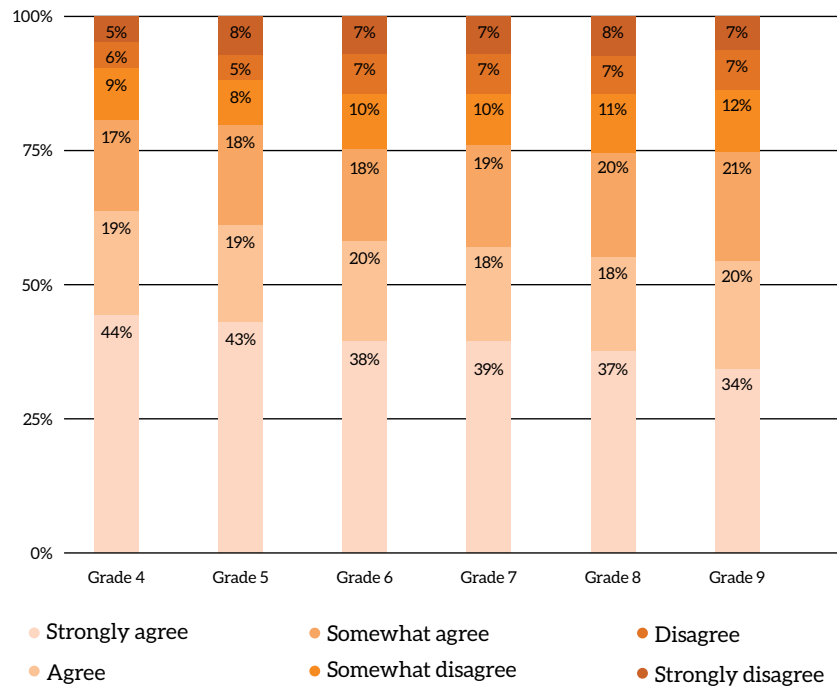
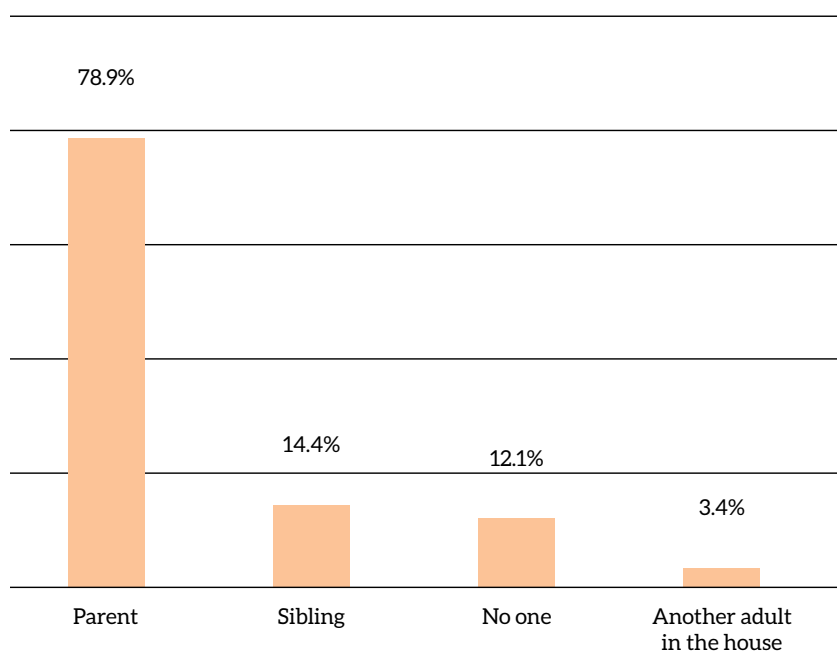


Figure 8: Support received at home, as reported by learners, for learners using Learning Bridges activities (N=8229)



Of the students who responded to the survey, 22.6 per cent indicated that they sent their completed activities to teachers but never received any feedback; 34.6 per cent responded that they sometimes received feedback, with 36.4 per cent indicating they always received feedback after submitting their work to teachers. Only 6.4 per cent of learners indicated they never submitted any work to teachers.

4.6 How did Learning Bridges impact on the role and pedagogy of teachers?

'I have changed how I teach. I create activities that mimic the activities of Learning Bridges, that link knowledge to life, and stimulate diverse, different and innovative answers.' (Male teacher, Amman)

Teachers were provided with access to online training on Learning Bridges, as well as support by Learning Bridges Champions. This support is evidenced by the finding that the majority of teachers were clear on their role in Learning Bridges (see Figure 10).

Figure 9: Activities are age appropriate for the learner (teachers, N=3073)

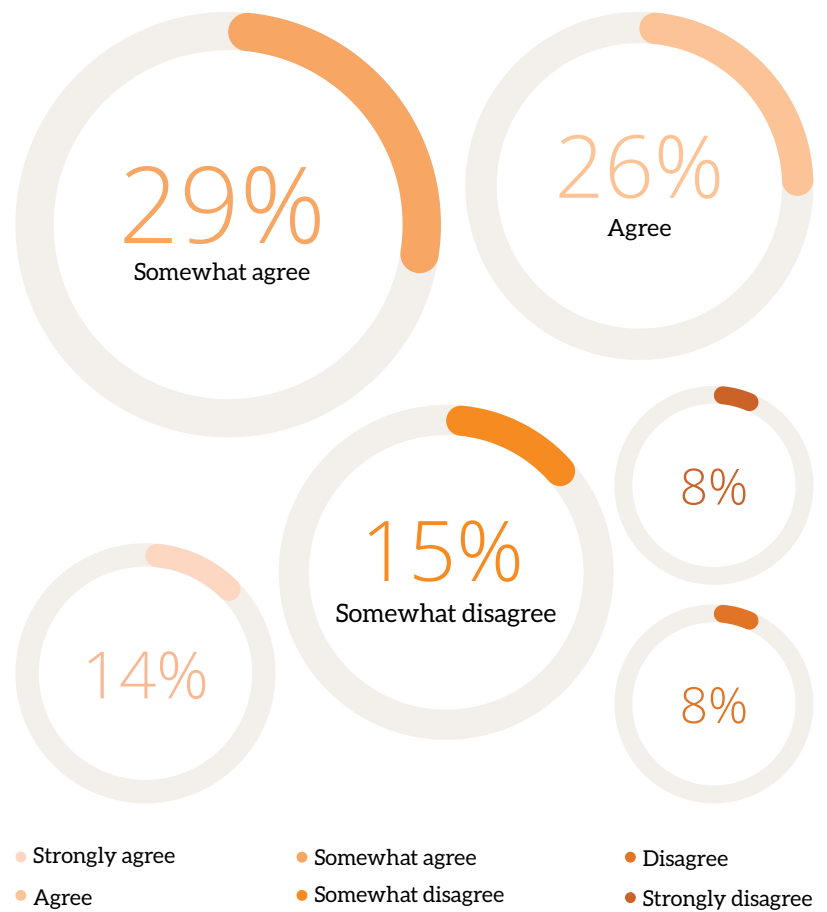
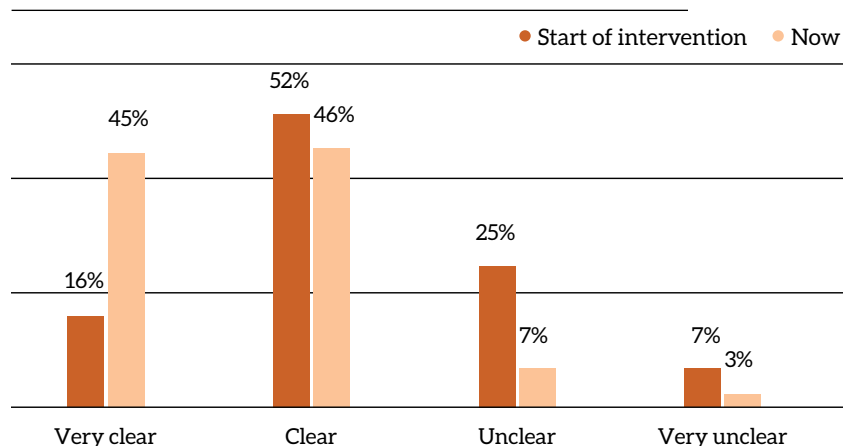


Figure 10: Clarity of role at start of intervention compared to 'now' (point of time completing the survey)



4.6.1 The teacher's role in Learning Bridges

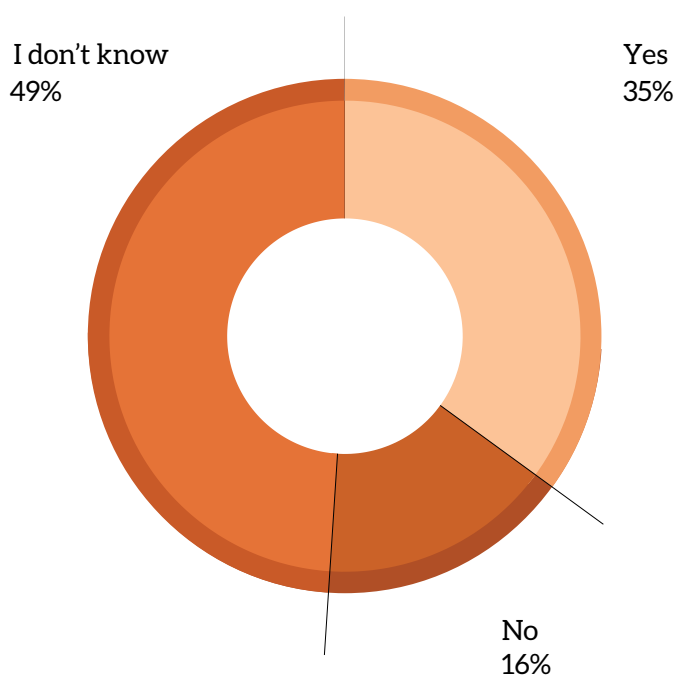
Teachers' perception of their role, and of how Learning Bridges had impacted their role as teacher, differed across respondents. Among those who considered their roles had changed in a positive way as a result of Learning Bridges, teachers used words such as 'support', 'mentor' and 'facilitator'. Teachers who had a positive view of Learning Bridges were more likely to indicate that they would like to continue Learning Bridges activities when students return to school settings, either as part of lessons or as homework.

'Learning bridges made the role of teacher a mentor and made learning focused around the student.' (Male teacher, Amman)

Some teachers responding to the survey believed they would change the way they teach in the future as a direct result of Learning Bridges. They also described how they had shifted from thinking about teaching and learning in a 'traditional' way to thinking of themselves as a mentor and a facilitator to learners.

Teachers surveyed were asked whether they would change their approach to teaching as a direct result of Learning Bridges: 35 per cent stated they would, with 16 per cent stating they would not, and the remaining 49 per cent saying they were unsure. See Figure 11. Of those who stated they would change their approach to teaching, they mentioned making more use of technology as well as real-life scenarios, integration with other subjects, and trying to make their lessons more practical.

Figure 11: Percentages of teachers' answers to the question: Do you think you will adapt your teaching in any way going forwards, as a result of Learning Bridges?



'Introducing more applied activities that allow the student to apply what they have learned through the curriculum.'

'I thought the capabilities of my students were weak in self-learning, but I found that the number of female students able to self-learn has changed the way I think about future lessons.'

24.3%

Of teachers who did not provide any feedback to learners, 24.3 per cent responded that they would like Learning Bridges to continue when schools reopen.

Some teachers expressed a feeling of unease about the change in their role. Such teachers commented that they did not feel they had a role as a teacher in the context of Learning Bridges. This apprehension was reflected in the teachers' opinion about the continuation of Learning Bridges once in-person teaching resumed. Some teachers stated that they did not believe Learning Bridges should continue when students went back to school, as it would no longer be needed. Teachers' perception of their role was also linked to their attitude towards giving feedback to their students.

Of those who responded that they did not provide any feedback to learners, only 24.3 per cent responded that they would like Learning Bridges to continue when schools reopen. This finding was reversed in the case of teachers who did provide feedback on Learning Bridges activities.

4.6.2 Integration of subjects

Teachers generally responded positively to Learning Bridges cross-curricula design, though some practical concerns were raised concerning how this was implemented. Some teachers commented that they separated out the activities and only sent learners the activities for their subject specialism.

'I would take a picture of the activity from my subject and send it to my students, other teachers would do the same.'

These teachers were not aware of whether teachers in other subjects had sent the same learners the other activities. It is therefore possible that not all learners were aware of the interconnectivity between the subjects, whether they fully benefitted from this connectivity, or if they were sent activities at

different times or inconsistently for different subjects. This suggests that there is need for further support to schools on how to utilize Learning Bridges as a programme that integrates subjects around core curricula objectives. It also indicates the challenge teachers faced in engaging in cross-curricula work when working fully remotely.

4.6.3 Formative assessment and feedback loops

Formative assessment and regular feedback between teachers and students is not common in Jordan, and this challenge was amplified during remote learning. Teachers were also asked whether they provided feedback to learners on completion of Learning Bridges activities, as well as their view on whether Learning Bridges activities should be assessed and graded.

As mentioned in section 2.2, a two-sided A4 guidance sheet was provided for teachers to accompany every student project pack. The guidance pages were designed to enable core subject teachers to work together to introduce the activities to the students. In the first year of implementation, as Learning Bridges was entirely online, the introduction from teachers was replaced with a short video to introduce the activity pack to students.

The teacher guidance sheets also provided specific support on the types of misconceptions students may have and how to address them, based on the concepts being taught that week in each subject. This was a priority as many teachers in Jordan have had limited teacher education on pedagogic content knowledge, which would normally provide them with knowledge, understanding and practical experience of dealing with misconceptions and how to approach correcting them in the classroom.

Anecdotal evidence from talking to teachers has shown that teachers welcomed the sections on misconceptions as a way for them to improve their practice.

The guidance sheets also provided teachers with new ways of formatively assessing the work of students. For example, children were asked to work individually and then in pairs to discuss work, the Frayer model was introduced, and students were encouraged to use both self and peer-to-peer assessment. Teachers made good use of Facebook, WhatsApp groups and direct calling to try to provide a feedback loop in the absence of face-to-face teaching.

Grading

Of teachers who responded, 48.7 per cent stated that there should be grading for the activities. They argued that grading was the best way to motivate students to participate, and to get buy-in from parents. For example, one of the Learning Bridges Champions said:

'Students are more active where there are marks/scores. We notice that. So if it is scored the level of activities completed will raise.'

One teacher also suggested that grading Learning Bridges activities would raise levels of competitiveness among students, this being another incentive for completing tasks. Generally, for teachers who believed that Learning Bridges activities should be graded, reasons typically included: the need to reward learners for their effort; that students are motivated to participate in learning when they receive grades; and that it provides

structure to feedback. In interviews with Learning Bridges Champions the belief was also expressed that grading Learning Bridges activities would make it easier to get buy-in from schools with a more traditional approach to education.

Teachers who responded to the survey were almost equally divided on whether activities should be graded. The argument for avoiding grading typically centred on the need to use Learning Bridges to incentivize students to learn for enjoyment, as opposed to being incentivized to learn for grades. The lack of grading was one aspect of Learning Bridges that appealed to a number of teachers and Learning Bridges Champions. Some teachers also suggested that grading activities would not be fair given the different capabilities of learners, and the different learning environments at home. Other teachers believed that Learning Bridges activities differ from regular school activities, and therefore should not be graded.

While some teachers did not believe that Learning Bridges activities should be graded, they did believe learners should be acknowledged for their efforts. Some teachers said they gave students certificates as a form of recognition for the hard work they had put in during school closures.

Feedback

Of the teachers who provided written feedback to students after they submitted Learning Bridges activities to them, 54.1 per cent responded they would like Learning Bridges to continue when students returned to school. Teachers that did not provide feedback were less likely to want Learning Bridges to continue when schools reopened.

48.7%

Of teachers stated that there should be grading for the Learning Bridges activities.

This may suggest that teachers who are less confident or skilled struggle to provide feedback online and are therefore more likely not to want to continue with online work on the return to school. However, given that many children are currently on rotation – and that blended learning will remain a component of in-person learning – this issue will need to be addressed.

4.7 How did Learning Bridges lead to innovation in teaching and learning?

Learning Bridges was designed in real time in response to the urgent need to support teachers in blended learning and provide a way for students to continue to engage during partial and full school closures. Along the way there were a number of unexpected impacts (or unplanned components) created (or introduced) through innovations by education stakeholders in the design and implementation of the programme.

4.7.1 Teachers

Although the resources were developed at grade level and with differentiated activities online, 42 per cent of teachers reported that they had modified the activities for students.

This is evidence of the growing confidence, competence and capacity of Jordanian teachers to make professional decisions at class level. Figure 13 shows the teachers’ responses regarding whether they amended Learning Bridges activities prior to sending to their students.

Figure 12: Teachers giving feedback on Learning Bridges activities vs whether they would like Learning Bridges to continue when schools return

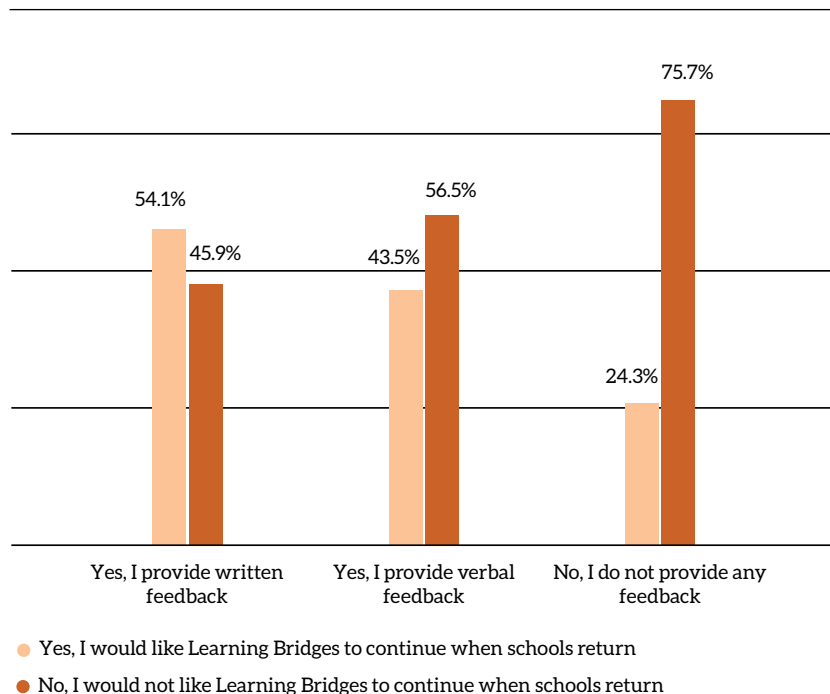
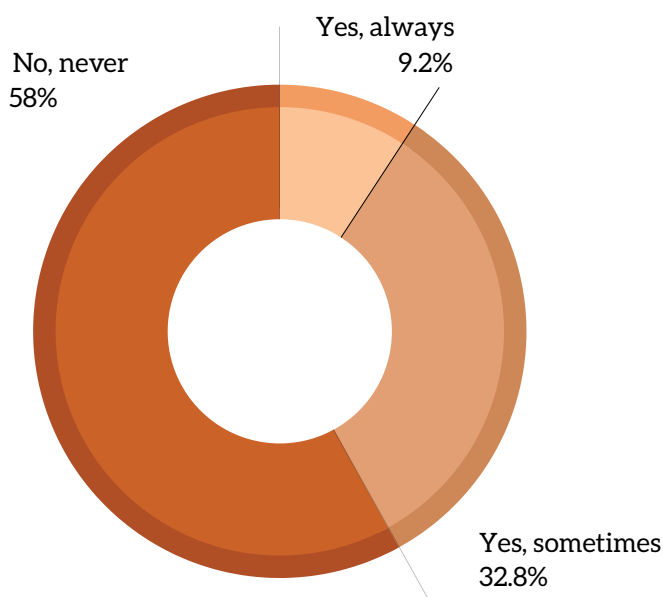


Figure 13: Percentages of teachers’ responses to whether they amended Learning Bridges activities prior to sending to their students





We see that 58 per cent of respondents stated they never added to the activities, 32.8 per cent did sometimes, and only 9.2 per cent did always. For those who responded that they added to the activities before sending to students, they did so in the following ways:

- Providing additional explanation for students in how to complete the activities.
- Selecting which questions or activities students should respond to based on their level, or deleting questions that are considered too difficult. 'I do not send them all questions because some questions do not apply to their age and the number of questions can be a lot so they cannot solve them all'.

- Simplify the activity for different learners: 'Simplify the activity for the students, especially the English language because the level is difficult'.

Given that the majority of teachers did not make any amendments to the activities at all before sending them to learners, this suggests that different teachers adopted different roles, and students had very different experiences of Learning Bridges depending upon the role their teacher adopted in editing the activities to adjust for difficulty levels.

Some teachers were able to reproduce their own padlets to encourage and share the work of their students.

4.7.2 Learning Bridges Champions

In semester one it became clear that there was need for support at district and school level to motivate engagement in the programme among teachers, and to share good practice across schools. In response, the role of Learning Bridges Champion was created. 126 Learning Bridges Champions were selected from among teachers and supervisors and were put in place in all 42 districts. In camp schools, where UNICEF has a particular mandate of support, a Learning Bridges Focal point was assigned to each school. The role of Champions at this level was to encourage participation of schools in the programme, and to get all their students engaged in the weekly activities.

‘When the Head of Supervision asked me to take on this role [as Learning Bridges Champion] I said I need to do the activities first, to see if I believe in them. If it is really valuable for the students, then I will say yes. And it was wonderful.’ (Supervisor, Learning Bridges Champion, Mafraq)

Learning Bridges Champions provided vital support to principals and helped secure the engagement of schools. For example, particularly for the first semester, the survey shows that boys were three times less likely to be engaged in Learning Bridges than girls, and thus male Learning Bridges Champions played an essential role to encourage teachers in boys’ schools to participate.

During interviews with Learning Bridges Champions, it was noted that it was initially difficult to get buy-in from schools to participate, and that the school principal was

the greatest school-level factor in whether Learning Bridges would be taken up by teachers or not. If principals were not on board with Learning Bridges, then teachers would typically not participate; in contrast, if the school principal was in favour of Learning Bridges, then there was likely to be good participation.

The Learning Bridges Champions interviewed all commented on their strong belief in the value of Learning Bridges, and their efforts to encourage school principal participation. One Learning Bridges Champion noted putting a lot of her energy into reaching out to school principals to understand their reluctance to work with Learning Bridges and to convince them of its value. She noted that she would not have done so if she did not believe that Learning Bridges was an incredibly valuable learning resource.

‘You have to convince someone of [the value] of something... I called each and every principal to tell them [Learning Bridges] was not extra activity. One of the principals said OK. I told him to read just one activity and give their point of view. If you think it is like any other programme, don’t do it, if you like it call me. He called me back after two days, he liked the integration, so he encouraged teachers to use it.’ (Supervisor, Learning Bridges Champion)

This highlights the vital role Learning Bridges Champions continue to play in outreach to schools to ensure equal access for learners and teachers.

Moving forward – Lessons learned and recommendations





5.1 Reach and Engagement

In the first year of implementation, Learning Bridges reached almost half a million children and was implemented by over 70 per cent of public schools at Grades 4 to 9. Learning Bridges was the only curriculum with a blended learning programme designed and implemented in Jordan during the school closures. It is now included in the MOE Education During Emergency Plan as a key strategy to support children's learning during the period of learning recovery.

Given this was an emergency response, there are numerous opportunities to further strengthen and adapt the programme for the 2021/22 academic year and beyond. These are discussed under the headings below.

Lack of technology, connectivity and/or parental support

Many children in Jordan lack the parental support to enable them to engage in Learning Bridges when studying from home. This is particularly challenging for younger children who are not independent learners, and older children from vulnerable households or with domestic or work responsibilities. Other children lack access to a device, data or connectivity. In 2021/22 children in almost half of schools in Jordan are only accessing in-person education 2 to 3 days a week, due to COVID-19 restrictions. To increase engagement among poorer households, one solution would be to create linkages with Community Centres to establish Learning Bridges Clubs that reach out to and support the most vulnerable children.

Ensure appropriate resources and timely access to printed materials

In the first year of implementation, the weekly activities were being designed in real time. This led to some distribution challenges, with several MOE distributions being required via Directorates to school level. However, now that the activities are available for a semester at a time, the resources can be provided in one booklet for students with an accompanying teacher guide.

The experiments included in Learning Bridges were designed to use affordable and easily available resources that could be implemented in classrooms and at home to enable more students to experience practical learning. This has enabled the learners to experiment with very basic materials in a way that they would not often have done in school. However, some students indicated that the activities might require resources that are not available for them. It is advised that the experiments and activities in the Learning Bridges programme should be reviewed to ensure they are suitable for students from all backgrounds.

Consider further inclusion, scaffolding and differentiation

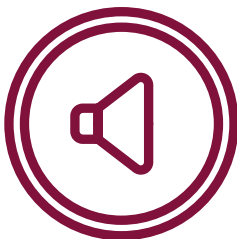
The Learning Bridges materials were based on the principle of universal design for learning, to enable children of a wide range of abilities to engage and learn. Open-ended activities allowed children to work at their own level based on what they knew and could do. Despite this, there were calls for more differentiation of the activities from parents to ensure they were appropriate for different levels of learners. Of the students who responded to the survey, 40 per cent stated they found the activities too difficult,

which was the most commonly cited aspect of Learning Bridges they disliked. The second most common response was 'I did not understand what to do', which also indicates a lack of parental support in some households. Starter videos were added at a later date to address this issue and it would be recommended to make them for the earlier semester one activities.

In year two of implementation, the online resources on the padlet and the exercises in the PDF files and videos can continue to be used as a resource for teachers to accelerate and scaffold learning when schools reopen. There is also an opportunity to develop the padlet further, with more scaffolded activities given the scale of learning loss after school closures. Now that the MOE has made classroom teaching videos for a whole year, and these are on DARSAK, these could also be used to illustrate some concepts and to scaffold learning.

UNICEF noted that some teachers and schools made the effort to create accessible materials and include children with physical and learning disabilities in the programme. Audio files ensured that the online resources were accessible for those with visual impairment or poor literacy skills. In the longer term, the programme should consider developing accessible material that is suitable for a greater range of (dis)abilities. Children with disabilities are the ones who fall behind in emergency contexts, so to achieve equity and quality education they need to be considered in the design and implementation of the programme as it is developed.

In the design of padlets, voice files were used for all text in both Arabic and English for Grades 4 and 5.



To include children with visual impairments and those who struggle to read, all padlets could have audio versions of the text.



To include children with visual impairments and those who struggle to read, all padlets could have audio versions of the text. The UNICEF website has hosted all the student and teacher activities since the launch of Learning Bridges. These are in PDF form with QR code links to the padlet. Many electronic readers used by the visually impaired do not support PDF files. Providing Word files would enable more students to access the materials.

Strengthen the linkage between school and home

The communication strategy between school and home and school and community can be strengthened to ensure all students are supported. This can be done through the continued use of social media and other channels to explain the Learning Bridges programme and show how parents can support it. Referrals between schools and Learning Bridges Clubs, if established in community centres, could provide additional support for vulnerable children.

5.2 Strengthening Learning Bridges impact on teaching and learning

While Learning Bridges provided continuity of learning for half a million children during the school closures, the more lasting impact may be on the quality of teaching and learning in Jordan.

A number of opportunities were identified to improve the design and implementation of Learning Bridges, and to further strengthen the impact of Learning Bridges on teacher innovation, use of technology and cross-curricula delivery.

Expanding the use of technology

It was noted that Learning Bridges provided an opportunity to integrate technology into teaching and learning, and an opportunity to upskill teachers. This will have a long-term impact on the education system as a whole. Although the barriers to engagement with Learning Bridges have been noted as being linked to a lack of resources, particularly technology, the use of technology was also considered to be an opportunity. In response to what aspects of Learning Bridges the interviewees would like to retain in the future, the continuing use of technology in teaching and learning was raised by teachers, learners and parents. The recording of videos and sharing work was noted by students in particular as an aspect of Learning Bridges they hoped would continue.

Strengthen feedback loops

In the second year of implementation, it is not yet known under what modality schools will be operating. Schooling could be face-to-face, partially so, or fully remote. This will have an impact on how the projects are managed in different scenarios.

The surveys and interviews show that there are mixed viewpoints on grading Learning Bridges activities. There is also a general agreement among students that they do not receive enough feedback from teachers. The Learning Bridges teacher's guide and associated training can continue to support the development of teacher skills in formative assessment and to create spaces for discussion of the benefits of feedback for students.

Students reported that there was limited feedback during distance learning and no formative classroom assessment. Through the weekly teachers' guides, Learning Bridges has helped to build teacher skills in identifying misconceptions and using a wider variety of assessment tasks.

This should be strengthened in further training. Some schools created a feedback loop by replicating the padlets to create a space for students to post their work.

There is an opportunity to further support the development of skills in giving feedback by using best-practice examples and interviews with the Learning Bridges Champions in the refreshed Learning Bridges online teacher training. This would enable the good practice captured during the first year of implementation to be further shared and so inform teacher practice.

For those students and teachers who wanted Learning Bridges to continue when schools reopened, they suggested that Learning Bridges could be part of homework, be integrated into lessons as a core part of the lessons, or be included at the start or end of lessons as plenaries.

Further embed the cross-curricular approach

The MOE should continue to ensure that schools and learners can use Learning Bridges in a cross-curricular way and to ensure that teachers can see the curriculum links. This can be achieved by refreshing the Learning Bridges training to have more background on cross-curricular approaches.

Enabling teacher innovation

To promote uptake among schools, the MOE

could continue the practice of nominating Learning Bridges Champions in each Directorate to support in raising awareness of mechanisms that ensure effective implementation of Learning Bridges activities, sharing good practices and promoting Learning Bridges communities of practice among teachers and education practitioners. The Learning Bridges Champions role has been shown to have particular value in motivating the engagement of male teachers and schools.

This research has demonstrated the impact of Learning Bridges on teachers' pedagogy. There is an opportunity to build on the good practice examples and provide more opportunities for teachers to share good practice. It is proposed that teachers and school administration could produce videos to document their best practices, focusing particularly on successes in cross-curricular activities, collaborative work and blended approaches. In addition to Learning Bridges Champions, one way of doing this could be to have leading teachers visit other schools to support embedding Learning Bridges.

To promote innovation, an Innovation Fund could be established to enable schools to bid to set up projects that will lead to innovation in their schools and include vulnerable students more effectively.

During interviews, some teachers indicated they would like to develop activities similar to Learning Bridges, with some having done so for Grade 10, which was not included in year one of the Learning Bridges implementation. One of the teachers stated:





'I've tried to design activities such as those included in Learning Bridges in order to design something similar for Grade 10. I would love to receive training on how to develop activities like these.'

The technology skills gained can be used by teachers to engage in more innovative and participatory pedagogy. Teachers also commented that they require more training in how to effectively use technology, with some commenting they have trained themselves in padlets and would like further support.

Expand the scope of Learning Bridges

One of the key comments from different groups was related to expanding Learning Bridges so as to be accessible to more grades, particularly Grade 10. This was commented on during interviews with MOE officials, in addition to being a request from teachers and Learning Bridges Champions. It was remarked that this approach to learning should be available to as many students as possible, and would be a particularly useful resource for students preparing for examinations.

In addition to creating content for more grades, some teachers interviewed also wanted more subjects to be added to Learning Bridges, with one teacher in Irbid stating

'I would love to focus more on other subjects such as art.'

Other teachers raised other subjects such as Geography, Cultural Studies and History.

Postscript

As of September 2021, schools in Jordan had reopened for in-person teaching; however around half of public schools were on full or partial 'rotation', with children attending in person 2 to 3 days a week. This is due both to the requirements for physical distancing, as well as overcrowding resulting from a shift from private to public schools due to the secondary impacts of COVID-19.

Learning Bridges continues to be implemented in schools in the 2021/22 academic year. It is being used as a resource to 'scaffold learning', as well as to provide continued support for those children who cannot attend full-time face-to-face learning due to rotation, quarantine or class/school closures. The continued use of Learning Bridges is in line with the MOE vision of blended learning as an ongoing component of the Jordanian education system.

At the request of teachers, Learning Bridges has been extended for the 2021/22 academic year to include Grade 10. According to UNICEF, these projects are more extensive and build in core activities for all students, with optional activities which are designed so students can choose what they may like doing or what they are good at. This is intended to help students reflect on what academic options and career choices they have.

The Grade 10 activities also provide activities to help students begin to think about career choices with a strong emphasis on Jordan and green jobs focused on environmental sustainability. These projects also aim to contribute to addressing gender biases in career pathways.

The Learning Bridges activities for Grades 6 and 8 have been rewritten to reflect updates to the national curriculum for these grades. The Learning Bridges project writers no longer require the support of an external consultancy, thus providing evidence that the approach used has enabled all the writers involved to develop technical expertise.

For the second year of implementation, the Learning Bridges resources will be printed in advance for each semester. All resources needed by students will be checked for ease of accessibility, and the resources needed will be set out at the beginning of the booklet. The MOE is printing Learning Bridges booklets for all students, with resources also available online.

The Learning Bridges teacher training is also being improved so as to ensure that teachers understand the cross-curricula links and can see the good practice that their colleagues shared in the first year of implementation.

Learning Bridges Clubs are being established by community organizations to provide support for children to participate in Learning Bridges activities where they do not have space or resources to do so at home. The intention is to create referral networks for vulnerable children from school to community organizations. It is hoped that this package can be replicated in the longer term to target the most vulnerable children in Jordan through an extensive network of community clubs.



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