Shabake 2: Implementation of the Blended Learning Model in Schools

Pre-test and Post-test Analysis Report: Teachers, IT, and students

June 2024

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Introduction

The Lebanese economy is facing one of the most severe crises globally since the mid-nineteenth century, with a 90% devaluation of the Lebanese Lira since 2019 according to The World Bank. This crisis affects both Lebanese and refugee populations, especially in marginalized communities, impacting healthcare, education, fuel, medicine, security, food, water, and severe power outages. The education sector has been deeply affected, with soaring fuel prices, electricity shortages, and low incomes leading to teacher protests and school closures. The socio-economic crisis, led to a significant decline in living standards and increasing poverty levels to 82% of the population, as reported by the UN ESCWA[1]. With inflation surpassing 230% annually and rising fuel prices, families are forced to cut education spending, and teachers struggle to attend school. This has led to decreased enrollment in formal education and higher dropout rates, particularly among refugees. During the 2021-2022 academic year, public schools were open for only 50 days, and UNICEF reported that 30,000 students dropped out[2]. The World Bank also noted a mass exodus of high school workers. Education NGOs are similarly impacted, losing trained staff and being compelled to hire unqualified personnel.

To address these challenges, **Lebanese Alternative Learning** (LAL), in partnership with **Teach For Lebanon** (TFL) and supported by **Expertise France** under the "Shabake 2" project, has developed a Blended Learning Model. This initiative aims to bridge the education gap and enhance education quality by building educators' capacity and improving learners' skills.

The Blended Learning Model was meticulously designed based on comprehensive research with key stakeholders in the education sector and tailored to address the specific challenges faced by the Lebanese education system. It encourages Lebanese schools to integrate technology into their teaching methods and adopt this innovative approach. To pilot the intervention, LAL, and TFL have developed a training program to prepare 20 TFL Fellows. These Fellows then trained 100 teachers to implement the model with 2,000 learners at 10 schools in Lebanon.

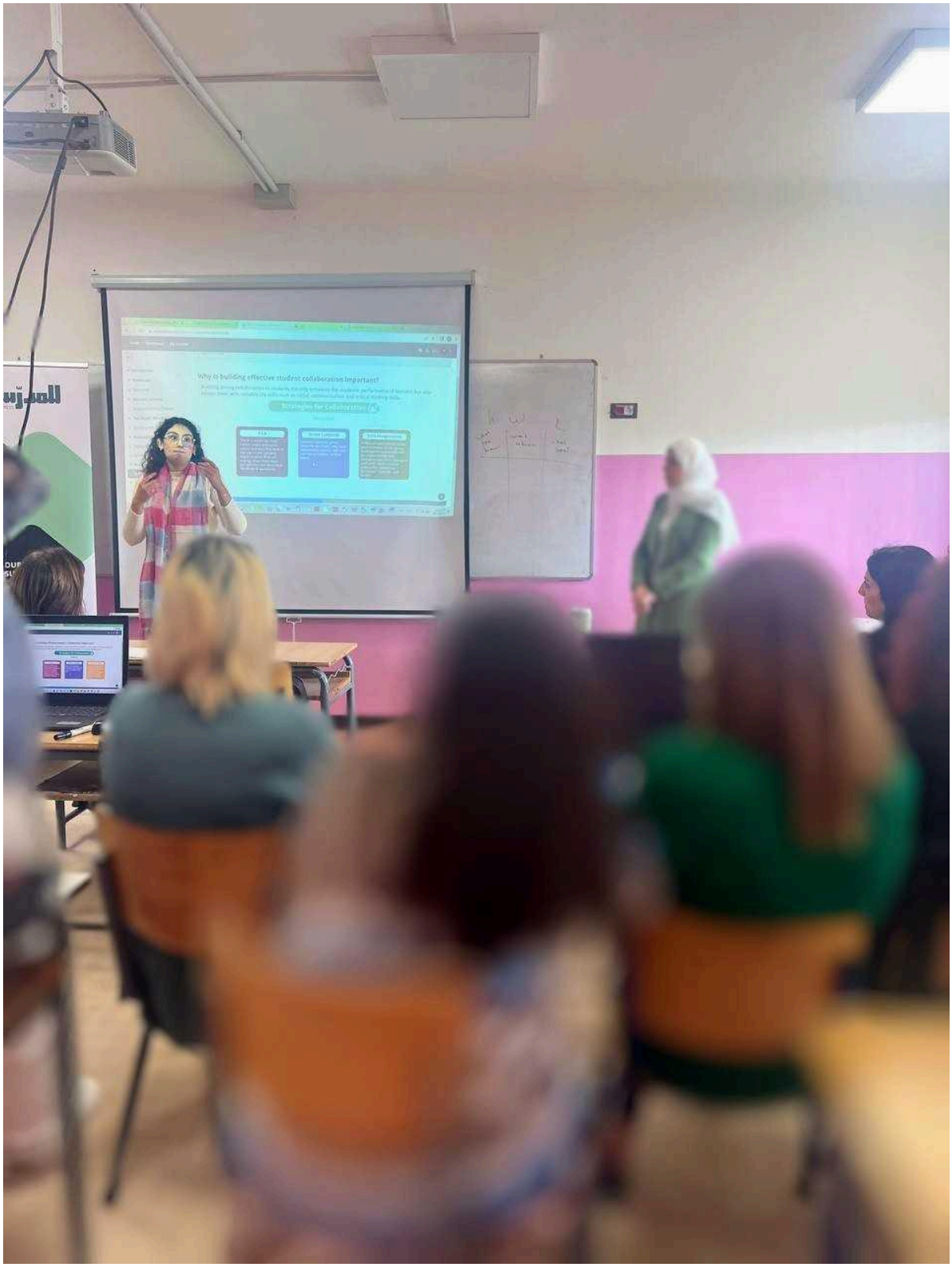
LAL is a Lebanese EdTech NGO that develops digital school programs and offline access solutions. A notable achievement of LAL is creating the highly interactive digital learning platform, Tabshoura, which offers the Lebanese curriculum objectives from K-9 in Arabic, French, and English. Approved by the Center of Education and Research Development (CERD) and promoted on the Mawaridy national platform, Tabshoura transforms the curriculum into a comprehensive digital learning experience. LAL also launched the LALmoudaress initiative to support teachers' transition to hybrid education, enhancing their ability to deliver a significantly improved learning experience.

[1] ESCWA, Multidimensional poverty in Lebanon (2019-2021)
[2] Al-MONITOR, Children's education at risk in Lebanon due to the economic crisis, March 4, 2022

Teach for Lebanon (TFL) believes that the educational disparity between students from low-income and high-income communities is a major barrier to the country's development. Since 2008, TFL has trained 149 Fellows and Alumni who have impacted 31,100 children across 61 schools. Each Fellow reaches an average of 135 students annually through classroom instruction, extracurricular programs, and community engagement.

Expertise France is the French international technical cooperation agency, operating as a public institution under the joint supervision of the Ministry of Europe and Foreign Affairs (MEAE) and the Ministries of Finance and Economy. Since 2019, Expertise France has been implementing the SHABAKE project in Lebanon to strengthen the capabilities of local NGOs.

“SHABAKE 2” continues this mission by aiming to enhance the capacities of local NGOs to actively contribute to Lebanon's development and address the ongoing crises in the country. The project focuses on three main components: reducing vulnerabilities through the Vulnerabilities-Reduction Project, developing the capacities of local NGOs and integrating them into the aid ecosystem, and promoting the aid localization agenda in Lebanon.



TFL Fellow training school teachers at Kfarmatta Public School

Report Objective

This report presents the main findings derived from the pre-post tests conducted during the pilot implementation of the new Blended Learning Model with Tabshoura. It aims to analyze the impact of the Blended Learning Model on teachers, IT personnel, and students through the evaluation of pre-test and post-test results.

This report continues the findings from the 'Shabake 2: Blended Learning Model – TFL Fellows Training Program Pre-test and Post-test Analysis Report,' dated November 9, 2023. It summarizes how the assessment evaluated changes in the Fellows' knowledge and skills before and after the training program to gauge the effectiveness of the intervention and readiness to implement the new Blended Learning Model at public and semi-private schools in Lebanon that will impact all students (refugees and host communities) girls and boys from grades 4 to 9 learning skills in Math, Languages, and Digital literacy. To read the full report and access detailed findings, please click on the following link, Shabake 2: Blended Learning Model – TFL Fellows Training Program.

General Overview

LAL collaborated with TFL to establish an essential infrastructure in 10 public and semi-private schools across Lebanon for the implementation of a newly developed Blended Learning Model. This collaboration included the comprehensive training of 20 TFL Fellows, who subsequently trained 100 school teachers. Each school received pre-configured tablets loaded with the Tabshoura application to facilitate the educational process.

Between December 2023 and June 2024, LAL provided continuous support to both the Fellows and teachers involved in the initiative. This support encompassed not only technical assistance but also pedagogical guidance to ensure the effective integration of the Blended Learning Model into classroom practices. Furthermore, LAL organized specialized training sessions for school IT staff on tablet configuration and management of the Tabshoura application. These efforts were complemented by follow-up sessions with teachers, during which essential data collection tools were provided to enhance readiness for student engagement.

Student implementation of the Blended Learning Model took place between April 8 and 15, 2024, and continued until May 31, 2024. During this period, students began actively using the pre-configured tablets and the Tabshoura application in their learning activities. This phase marked a significant milestone in the project, as it transitioned from preparatory stages to direct student engagement, allowing for the practical application of the new educational model in real classroom settings.

Methodology

Equipping Schools to Integrate and Manage a Blended Learning Model

LAL collaborated with TFL to equip 10 public and semi-private schools across Lebanon with the necessary infrastructure to implement and manage a Blended Learning Model. This included tablet distribution, creating 2,000 user accounts, training, and capacity building for teachers and IT personnel. Schools that were already equipped with devices did not receive additional tablets.

Below is a table reflecting the preparations made for each school:

School	Tablets Received	Teachers Trained	IT/Staff Trained	Student Accounts Created
Kfarmatta PS	11	11	0	200
Jbeil Second PS	12	10	1	250
Mazraat Yachouh PS	0	6	0	0
Salma Sayegh PS	11	10	1	200
Achrafieh First PS	0	5	1	100
Tarik Al Jadide PS	13	9	1	250
Sad Al Baouchrieh PS	11	9	1	200
New Educational School	0	9	1	200
Rafic Hariri PS Aramoun	0	10	1	200
Frères Dekweneh School	20	23	1	400

Blended Learning Model Training Program Participants

From December 8, 2023, to March 16, 2024, approximately 112 public school teachers from 10 schools in Lebanon received training on the new Blended Learning Model featuring the Tabshoura application. These teachers were trained by 20 TFL Fellows who had previously completed the program and demonstrated improved skills and knowledge.

Teachers Training:

The training sessions were held across six different governorates in Lebanon, with 10 sessions conducted. Each session was attended by 6 to 11 teachers, including IT

personnel when available; otherwise, a teacher or the school principal was trained to support the school's technical needs. In total, eight IT personnel participated. The teacher training sessions covered the following topics:

- Discovering the Tabshoura educational platform.
- Defining blended learning and identifying its importance.
- Exploring the blended learning model in synergy with Tabshoura.
- Designing a unit plan.
- Enumerating a selection of practical strategies for fostering a blended learning culture.
- Embarking on a journey into the world of Project-Based Learning.

IT Personnel Training:

The IT training sessions focused on technical aspects essential for the smooth operation of the Tabshoura application and devices, including:

- Installing Tabshoura application.
- Downloading and updating the Tabshoura application.
- Downloading and deleting lessons for offline use.
- Creating new accounts on the same device.
- Switching between user accounts.
- Navigating the application and its features.

LAL also Provided a Technical Deployment Toolkit and a tutorial video to reinforce the concepts learned and for additional support with the Tabshoura application.

Student Implementation:

Before the student implementation phase, LAL's team took essential steps to ensure a smooth transition, credentials were created, and 2,000 users were registered on Tabshoura platform. These credentials were then distributed to the schools, ensuring that each student had access to the necessary resources and tools on the platform and application.

The implementation phase for students began on April 8, 2024, in some schools, while others started on April 15, 2024, due to the holiday season. This phase provided students with around one month of active engagement with the Blended Learning Model, concluding on May 31, 2024. During this period, students utilized the pre-configured tablets and the Tabshoura application in their learning activities, marking the practical application of the new educational model. LAL continued to support teachers and IT staff throughout this phase to ensure a successful and seamless implementation.

M&E Framework and Data Collection

At the beginning of the project, LAL and TFL developed a framework used to measure the effectiveness of the Blended Learning Model implementation. Setting deadlines on major milestones to track progress, mitigate any challenges, and provide support, reflecting on the activities and methods that were positive and effective, and determining the challenges, constraints, and uncertainties faced during the program.

M&E Procedures

1. Monitor and track activities outlined in the project proposal framework.
2. Prepare necessary templates/files for documenting and collecting qualitative and quantitative data during the project's progress:
    - Attendance sheets - to be filled every training session
    - MoM template - to be filled at every meeting held
    - Progress report template - to be updated monthly
    - Timesheets - to be filled monthly
    - Testimonial and Feedback surveys - to be shared post-training program completion
    - Interview questions - to be filled post-interview
    - Focus group report to be filled post the sessions
    - Pre and post-tests - to be filled pre- and post-training program implementation
    - Surveys on Kobo Toolbox and JotForm: to be filled after training sessions
    - Interview quotations - for research and post-implementation feedback
    - Shared file - to be used to upload photos from fieldwork

LAL Policies and Data Safeguarding:

LAL has established several policies (anti-harassment, equality, child protection, human rights, environmental, and whistleblowing). New team members must read and sign a commitment document. During fieldwork, a media release form is signed, and digital platforms and data collection systems safeguard user identities.

Data Collection & Analysis:

To measure the impact and effectiveness of the Blended Learning Model, comprehensive data collection tools were developed using KoboToolbox and Jotform. Most of these tools, made available in both Arabic and English, were designed to gather detailed information on skill improvement, testimonials, and feedback from all participants.

Data Collection Tools:

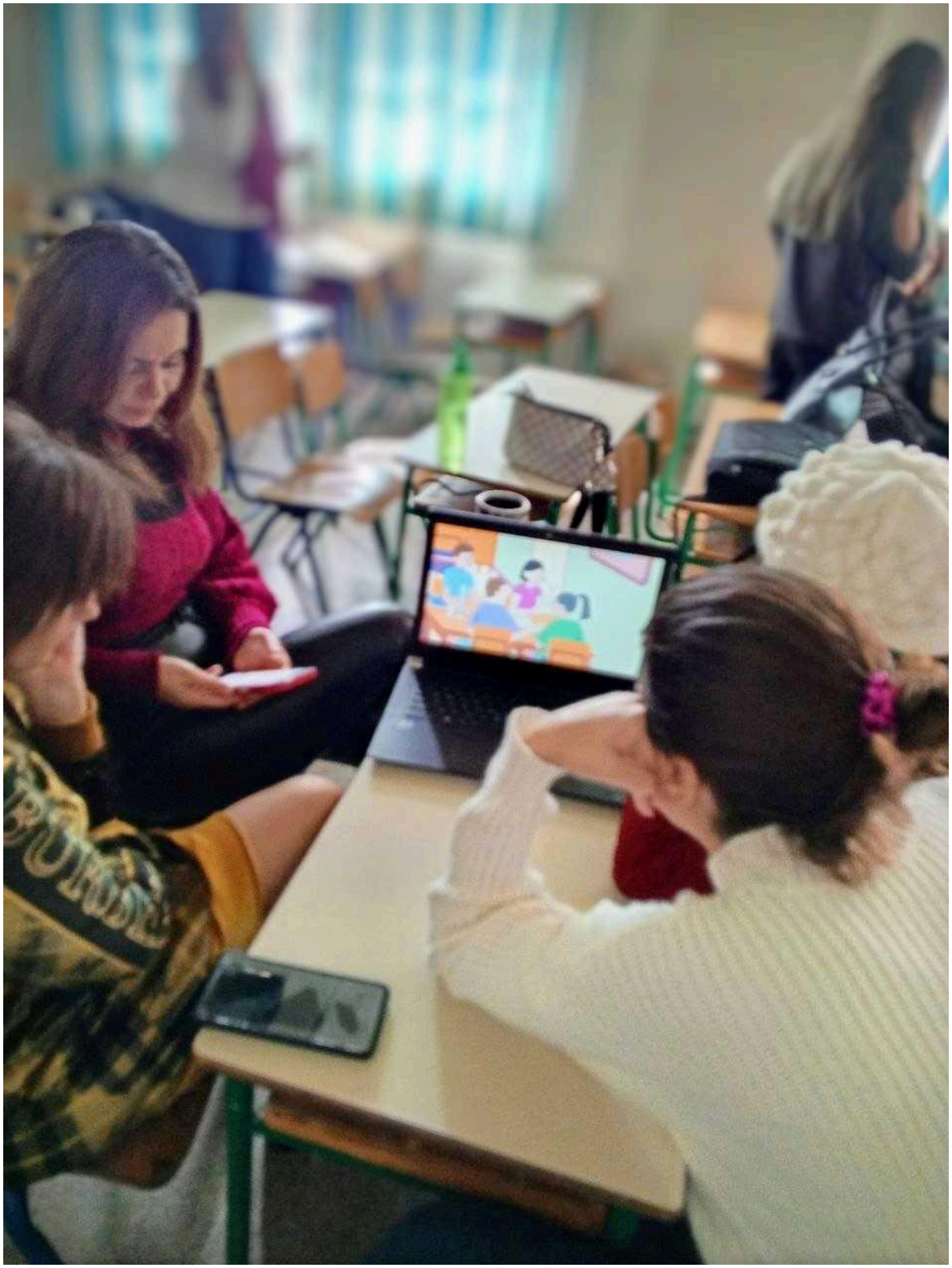
- **Teacher Assessments:** Pre- and post-tests were created to gather both qualitative and quantitative data from teachers. These tests were administered before and after the training sessions to evaluate improvements in digital skills and the integration of technology into their teaching methods.
- **IT Personnel Assessments:** A qualitative pre- and post-test evaluation form was specifically designed for IT personnel to assess their skill development and readiness to support the technological aspects of the Blended Learning Model.
- **Student Assessments:**
    - For students in grades 4 to 9, pre-and-post-tests were developed in both English and Arabic. These tests were designed to be completed independently by the students, assessing their digital skills and understanding of the blended learning concepts.
    - For younger students, from kindergarten to grade 3, an Excel evaluation form was prepared in both languages. These forms were completed with the assistance of teachers, who observed and recorded the students' progress and engagement.

Data Collection and Analysis Timeline

Data collection took place in May and June 2024, with the analysis completed by the end of June. This report focuses on the changes demonstrated by improved skills and knowledge in digital literacy and the integration of technology into teaching and learning methods.

Analysis and Reporting:

The analysis presented in this report reflects the pre-and post-implementation phases, highlighting the improvements and impacts observed in each phase. By comparing the pre-and-post-test results, we can provide a clear picture of the progress made by teachers, IT personnel, and students, showcasing the effectiveness of the Blended Learning Model and the Tabshoura application. This structured approach ensures that the report offers a thorough and evidence-based evaluation of the initiative's outcomes.



TFL Fellow training school Teachers at Rafic Hariri Public School

Teachers Training Program

From December 8, 2023, to March 16, 2024, TFL Fellows, with the support of LAL's Digital Experts, conducted capacity-building training workshops on the Blended Learning Model using the Tabshoura platform. The workshops covered content for kindergarten (KG) as well as Cycles I, II, and III.

These sessions were attended by 103 teachers from 9 public schools and 1 semi-private school. To measure the effectiveness of the training, pre-tests were administered at the beginning of each session and post-tests were completed at the end of the intervention implementation. While all 103 participants completed the pre-tests, only 62 of them filled out the post-tests.

Participants Demographics

The following demographics pertain to the 103 participants who completed either the pre-test, post-test, or both. This information includes the participants' age ranges, the teaching cycles they are involved in, their locations within various governorates and districts, and the schools where they teach.

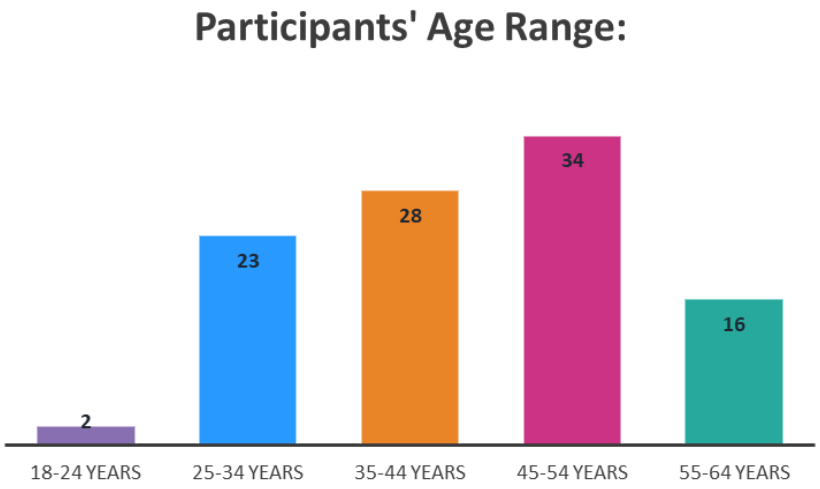


Figure 1- Distribution of Participants Ages

The bar chart shows that the highest number of participants are in the 45-54 age range (34 participants), followed by the 35-44 age range (28 participants). The 25-34 age group has 23 participants, while the 55-64 age group has 16 participants. The least represented group is the 18-24 age range, with only 2 participants. This indicates that most participants are mid to late-career teachers, with fewer early-career and young teachers involved.

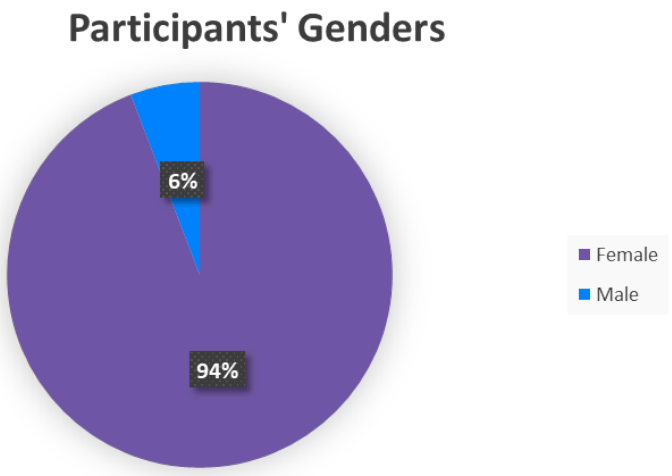


Figure 2- Distribution of participants' genders

The chart reflects that there were significantly more female participants at 94% than male participants at 6%.

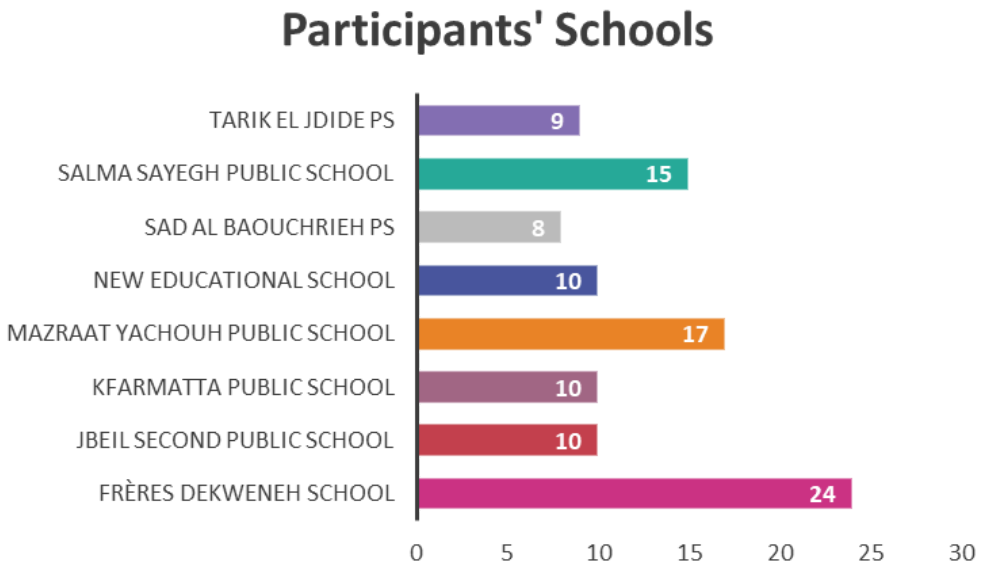


Figure 3- Distribution of participants by school

The data represents the distribution of participants across various schools. Frères Dekweneh School accounted for the largest proportion with 24% of participants, followed by Mazraat Yachouh Public School at 17%, and Salma Sayegh Public School at 15%. Other schools included Jbeil Second Public School, Kfarmatta Public School, New Educational School, Sad Al Baouchrieh Public School, and Tarik Al Jadide Public School, each comprising smaller percentages ranging from 8% to 10%.

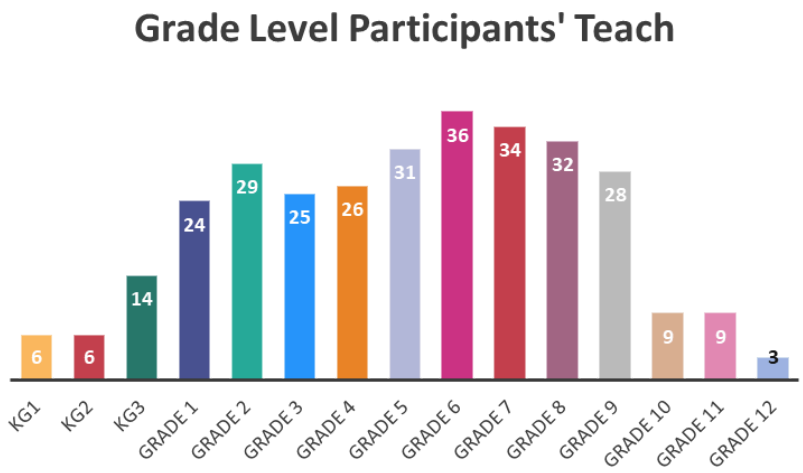


Figure 4- Distribution of grade levels participants teach

The data illustrates the distribution of participants by the grade levels they teach, expressed as percentages of the total. The highest proportion of participants teach Grade 6 (35.0%), followed by Grade 7 (33.0%) and Grade 5 (30.1%). Lower grades, such as KG1 and KG2, have smaller representations at 5.8% each. Middle school grades, particularly Grade 6, Grade 7, and Grade 5, show significant participation, reflecting a concentration of educators in these levels. Higher grades like Grade 10, Grade 11, and Grade 12 have fewer participants, with Grade 12 having the lowest at 2.9%. This distribution highlights a focus on middle school grades, particularly Grade 6, Grade 7, and Grade 5, which are emphasized in Tabshoura platform's content, covering Kindergarten through Grade 9.

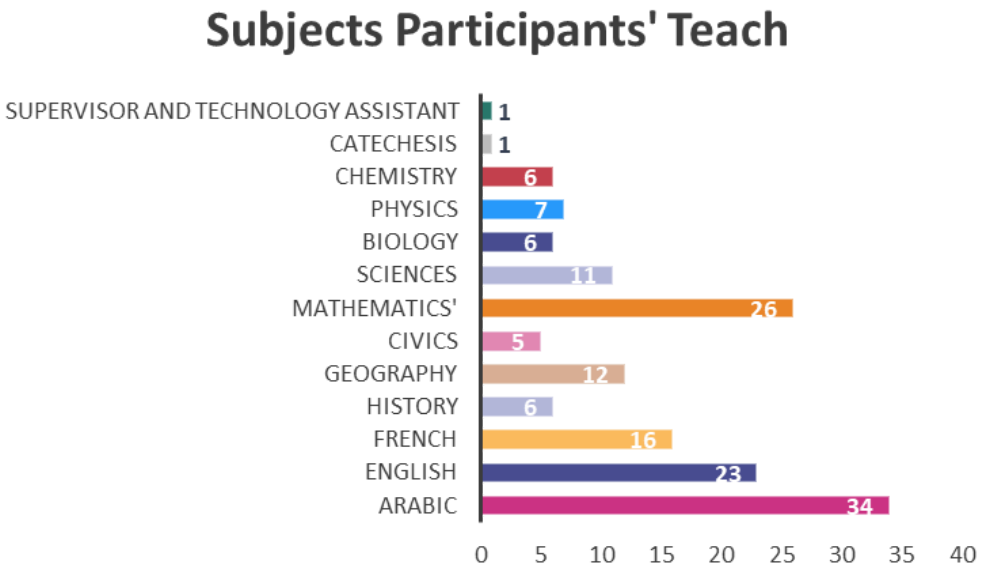


Figure 5- Distribution of subjects participants teach

The data reveals the distribution of participants across various subjects they teach, with Arabic being the most represented at 33.0%, followed by Mathematics at 25.2%, and English at 22.3%. Other notable subjects include French (15.5%), Geography (11.7%), and Sciences (10.7%). History, Biology, Physics, and Chemistry each accounts for around 5.8% to 6.8% of participants. Civics, Catechesis, and the role of Supervisor and Technology Assistant have the smallest representation at 4.9% and 1.0% respectively. This indicates a strong focus on core subjects such as Arabic, Mathematics, and English.

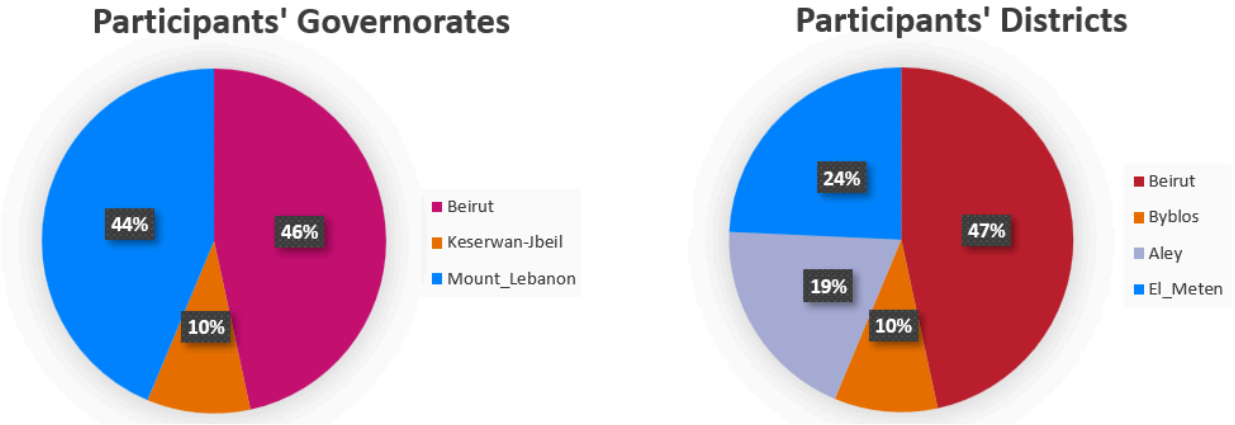


Figure 6- Distribution of participants by governorates and districts

The data shows the distribution of participants across various governorates and districts. Beirut has the highest representation in both categories, with 46% and 47% respectively, of the total participants. Mount Lebanon follows the governorate category closely with 44%, while Keserwan-Jbeil has the lowest at 10%. El Meten has the second-highest representation in the district category at 24%, followed by Aley at 19%, and Byblos at the lowest at 10%. This indicates a significant concentration of participants in Beirut, with notable representation in Mount Lebanon and its districts.

Pre-test and Post-test Results and Analysis

The pre-post tests were developed in collaboration with the trainers before the commencement of the training sessions. Both tests contained identical questions to evaluate the impact on knowledge and skill enhancement.

The questions were categorized into three sections:

- Section 1: Online Learning - comprises 8 questions, including 2 qualitative and 6 quantitative questions.
- Section 2: Understanding Blended Learning - includes 9 questions, with 6 qualitative and 3 quantitative questions.
- Section 3: Technology Skills - consists of 1 quantitative question.

Each teacher was given a time frame of 15 to 20 minutes to complete each test. The TFL team integrated the tests into Jotform and shared them with the teachers via a link and QR code. Raw data generated from the tests was subsequently shared with LAL by TFL. Out of the teachers involved, 103 completed the pre-test, and 60 completed both the pre-test and post-test, constituting the primary focus for evaluation and comparative analysis in this report. Two participants who solely completed the post-test, skipping the pre-test, are not included in this comparison. The performance of the remaining 43 participants, who completed only one of the assessment forms, will be addressed separately. The reasons for not completing both assessment forms are unclear, but it may be related to teachers being overwhelmed by the end of the academic year and final exams. The pre-tests had a higher turnout as they were filled out immediately onsite, ensuring broader participation.

Baseline Data

To assess the prior knowledge of participating teachers regarding blended learning and digital teaching tools, we used a quantitative question inquiring about their previous involvement in online or e-learning programs, followed by a qualitative question directed to those who had prior experience learning about their experiences and the challenges they encountered.

Results indicate that 51% of participants had engaged in online learning. Based on responses to the question about their experience with online learning, the data reveals predominant themes. A significant majority of participants, accounting for approximately 91.7% of responses, described their experiences as either positive or very positive. This indicates a strong satisfaction with online learning among the respondents. Conversely, a smaller proportion, approximately 5% of responses, reported negative or very negative experiences. This suggests that while most participants found online learning beneficial and effective, a minority faced challenges or had less satisfactory experiences. Conversely, 49% of participants had not previously engaged in online learning programs.

Pre-Post Test Analysis:

All questions, qualitative or quantitative, were graded on a scale ranging from 0 to 5.

Pre-test Scores:

The following findings and graphical representation display the results of the pre-test, completed by 60 individuals.

Mean score: 1.78
Standard deviation: 1.87

Post-test Scores

The same 60 teachers who participated in the pre-test also completed the post-test.

Mean score: 2.86
Standard deviation: 1.94

The average score for the pre-test was 1.7807, while the average score for the post-test increased to 2.8683. This indicates an improvement of 1.0876 points. The rate of improvement, calculated as the percentage increase from the pre-test to the post-test, is approximately 61.08%.

Standard Deviation:

The standard deviation for the pre-test scores was 1.8799, and for the post-test scores, it was 1.9470. These values indicate the variability or spread of the scores around the mean for both tests.

Improvement Percentage:

The overall improvement percentage, representing the relative increase in scores from the pre-test to the post-test, is 61%. This substantial rate of improvement suggests that the participants' performance significantly increased after the intervention or between the two tests.

Analysis:

The data suggests that the participants showed considerable improvement in their performance from the pre-test to the post-test. The average scores increased by approximately 61%, indicating a positive impact of the learning or training process implemented between the two assessments. The standard deviation values, while slightly increasing, still show a consistent spread of scores around the mean, meaning that while individual performances varied, the general trend was an overall improvement.

The subsequent sections will present the pre-post-test results, supported by visual representations.

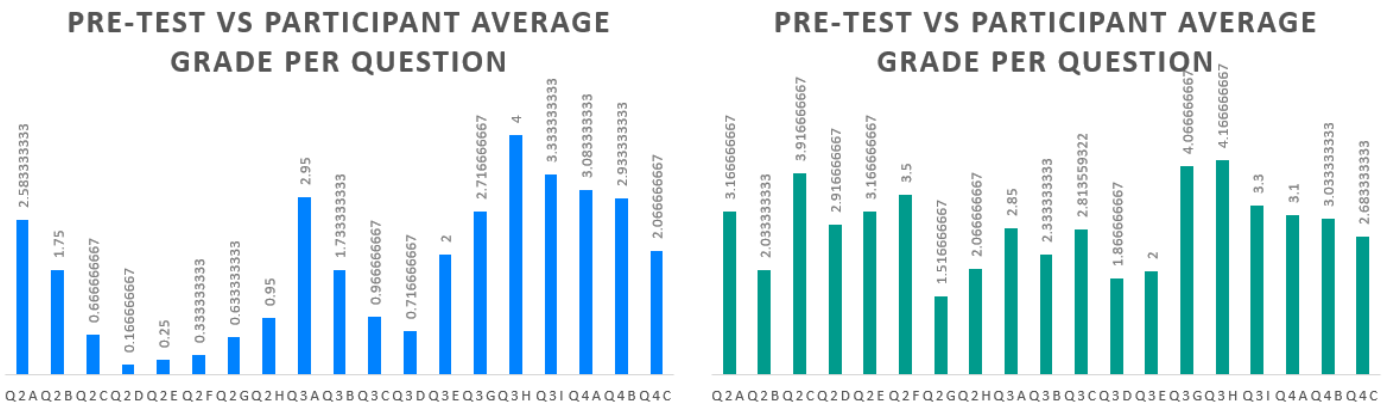


Figure 7- Average Grades Per Question: Pre-test vs. Post-test Comparison

Pre-test and Post-test Comparison Analysis

The disparities between the pre-test and post-test results are substantial. The specifics regarding the scores are delineated below, accompanied by a visual representation.

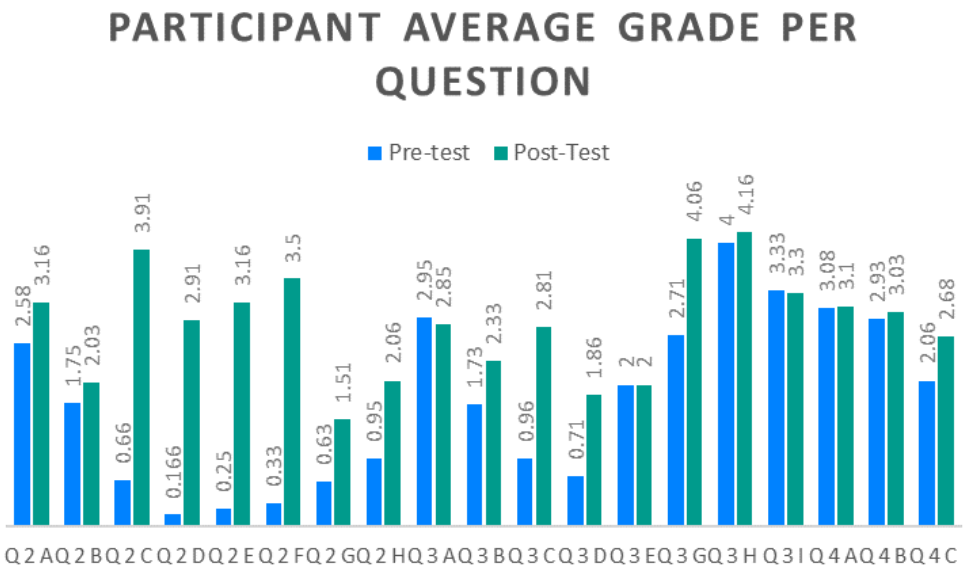


Figure 8- Average Grades Per Question: Pre-test vs. Post-test Comparison

General Improvement:

The data shows that there is a general improvement in the average grades for most questions from the pre-test to the post-test. This indicates that the participants' understanding and performance have increased after the intervention.

Significant Increases:

- **Q2C**: The average grade increased significantly from 0.67 to 3.92, indicating a substantial performance improvement.
- **Q2D**: The average grade increased from 0.17 to 2.92, showing significant progress.
- **Q2E**: The average grade went from 0.25 to 3.17, marking a notable improvement.
- **Q2F**: The average grade rose from 0.33 to 3.50, reflecting considerable enhancement.
- **Q3C**: The average grade increased from 0.97 to 2.81, indicating substantial progress.
- **Q3G**: The average grade improved from 2.72 to 4.07, showing significant enhancement.

Moderate Increases:

- **Q2A**: The average grade improved from 2.58 to 3.17.
- **Q2B**: The average grade increased from 1.75 to 2.03.
- **Q2G**: The average grade rose from 0.63 to 1.52.
- **Q2H**: The average grade improved from 0.95 to 2.07.
- **Q3B**: The average grade increased from 1.73 to 2.33.
- **Q3D**: The average grade rose from 0.72 to 1.87.
- **Q4C**: The average grade increased from 2.07 to 2.68.

Minor Increases or Stable Performance:

- **Q3A**: The average grade decreased slightly from 2.95 to 2.85.
- **Q3E**: The average grade remained stable at 2.00.
- **Q3H**: The average grade increased slightly from 4.00 to 4.17.
- **Q3I**: The average grade decreased slightly from 3.33 to 3.30.
- **Q4A**: The average grade remained relatively stable at around 3.08 to 3.10.
- **Q4B**: The average grade increased slightly from 2.93 to 3.03.

Overall, the data demonstrates significant improvements in most questions, indicating that the participants' understanding and performance have generally increased from the pre-test to the post-test. Some questions showed substantial improvement, while others had moderate increases or remained relatively stable. The overall trend suggests a positive impact of the intervention on the participants' learning outcomes.

It is noteworthy that the 43 participants who completed the pre-test but did not participate in the post-test demonstrated impressive performance, with a mean score of 1.8. This score is slightly higher than the mean score of 1.78 achieved by the 60 participants who completed both the pre-test and post-test, indicating a strong initial performance. Additionally, the 2 participants who only took the

post-test also performed commendably, consistently achieving high scores of 5 points for most questions. This suggests that while they did not participate in the pre-test, their understanding and skills were well-reflected in the post-test results.

Consequential Questions

Several questions in the pre-test and post-test were designed to assess concrete knowledge improvement and learning objective outcomes. These questions were focused on the following aspects:

- Familiarity with Tabshoura, followed by knowledge of how to use it, and whether participants believe that integrating it into their teaching can help address their challenges. Questions 2C, 2D, 2E, and 2F.
- Providing a brief explanation of "Learner-centered instruction," a topic discussed during the training. Questions 2G and 2H.
- Assessing the knowledge level regarding blended learning. Questions 3A, 3B, and 3C.
- Measuring confidence in aligning a lesson plan with a blended learning model. Questions 3H and 3I.
- Rating proficiency in using technology tools, employing technology in education, and utilizing learning management systems like Moodle. Questions 4A, 4B, and 4C.

These questions were instrumental in determining the impact of the training program on participants' knowledge of the Blended Learning Model and digital skills.

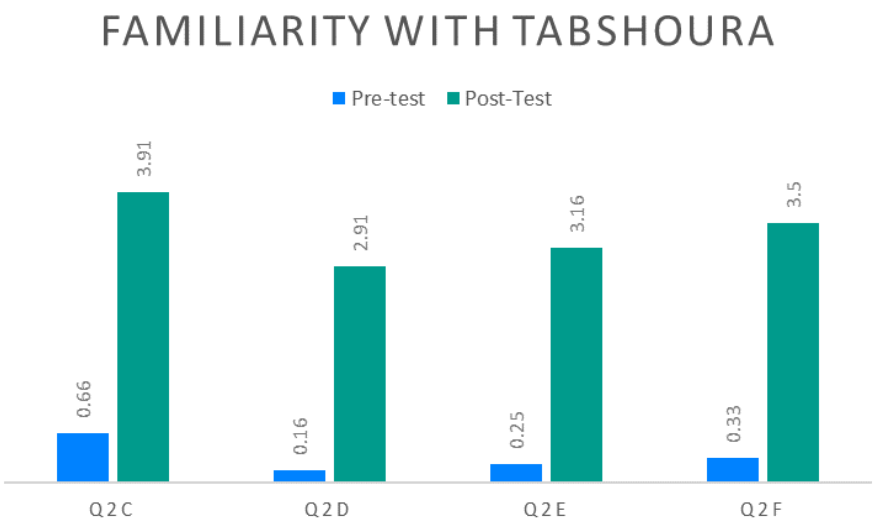


Figure 9- Familiarity with Tabshoura: Pre-test vs. Post-test Comparison

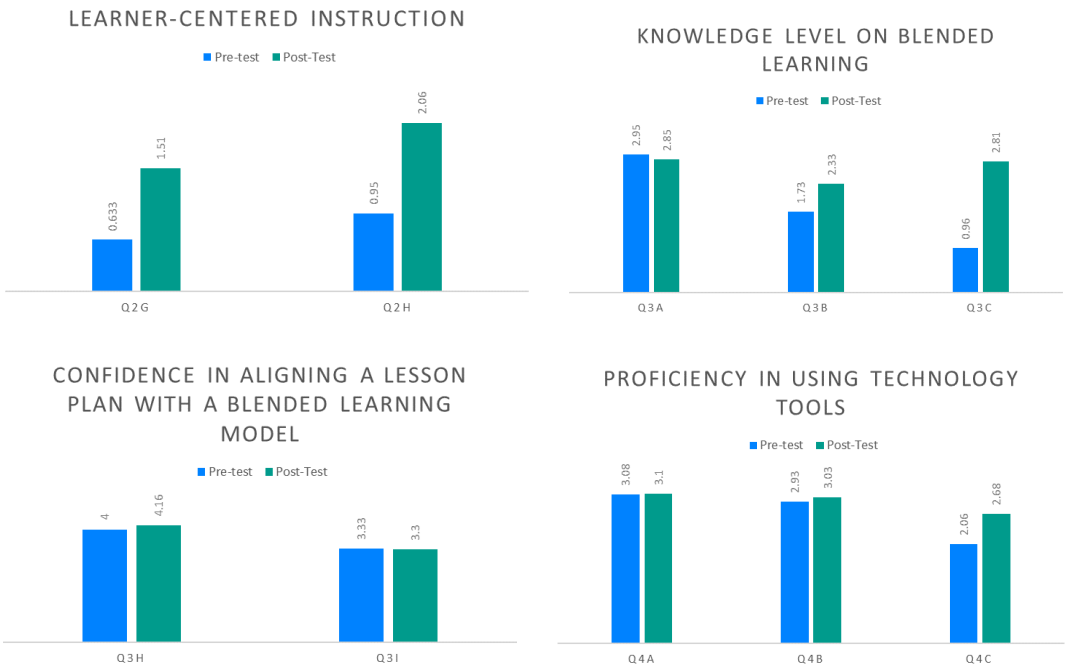
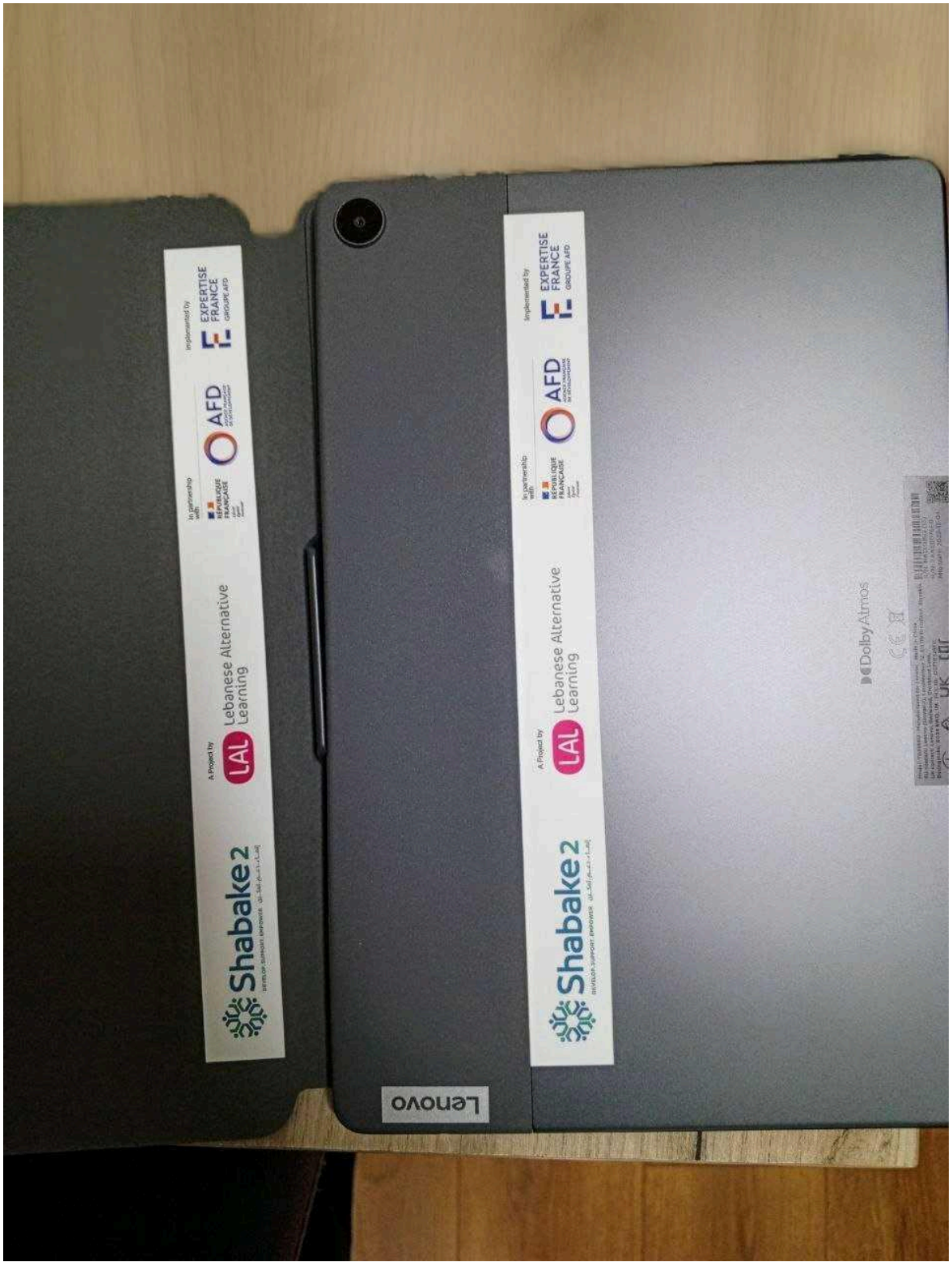


Figure 10- Impact of the Training Program on participants Knowledge of the Blended Learning Model and Digital Skills: Pre-test vs. Post-test Comparison

The data presented reflects the effectiveness of a teacher training program in enhancing participants' knowledge and skills related to the Blended Learning Model and digital competencies. Across various metrics, including familiarity with Tabshoura and learner-centered instruction, significant improvements were observed from pre-test to post-test evaluations. For instance, participants' familiarity with Tabshoura substantially increased, as indicated by notable grade improvements in questions like Q2C, Q2D, Q2E, and Q2F. Similarly, understanding of learner-centered instruction principles saw marked enhancements, with average grades for Q2G and Q2H showing considerable improvement post-training. In terms of knowledge on blended learning, while there was variability across specific questions (Q3A, Q3B, Q3C), the overall trend suggested a positive shift post-training, indicating a better grasp of blended learning concepts. Moreover, participants' confidence in aligning lesson plans with the blended learning model showed consistent improvement, demonstrated by higher average grades in questions Q3H and Q3I post-training. Regarding proficiency in using technology tools (Q4A, Q4B, Q4C), while improvements were noted, the changes were more modest compared to other areas assessed.

Overall, the data underscores the training program's effectiveness in enhancing participants' understanding and application of blended learning principles, digital skills, and confidence in instructional planning aligned with modern educational methodologies. These findings suggest a positive impact of the training program on advancing educators' capabilities in integrating technology and learner-centered approaches into their teaching practices.



Tablet Donation at Rafic Hariri Public School

IT Training Program

Between December 8, 2023, and March 16, 2024, LAL digital experts undertook a comprehensive training initiative aimed at equipping IT personnel and school staff with the skills needed to effectively configure and manage tablets using the Tabshoura application. This initiative included hands-on training sessions designed to ensure proficiency in deploying the new blended learning model. Additionally, an accessible online IT manual has been curated on Lalmoudaress, serving as a valuable resource for ongoing reference and supporting the seamless integration of new personnel. Complementing these resources are tutorial videos accessible via a designated link, providing further guidance for optimizing the implementation of the Tabshoura platform across schools.

These training sessions were attended by 8 participants from 7 public schools. In instances where IT personnel were unavailable at their respective schools, designated teachers or school principals assumed the responsibility.

To evaluate the training's efficacy, pre-tests were conducted at the start of each session, with post-tests administered upon completion of the intervention. Although all 8 participants completed the pre-tests, only 2 participants completed the post-tests, reflecting a subset of those initially involved in the assessment of training outcomes.

Participants Demographics

The demographic details encompassing the 8 participants who completed either the pre-test, post-test, or both, encompass their age ranges, locations across various governorates and districts, as well as their respective schools of employment.

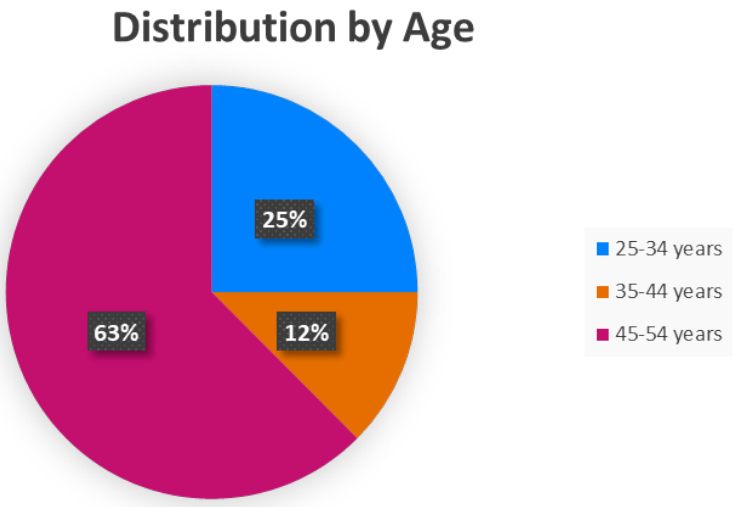


Figure 11- Distribution of participants Ages

The data indicates that the majority of participants, 5 out of 8, fall within the age range of 45-54 years. Participants aged 25-34 years make up 25% of the group, while those aged 35-44 years constitute 12.5%. This distribution suggests a predominantly middle-aged demographic among the participants.

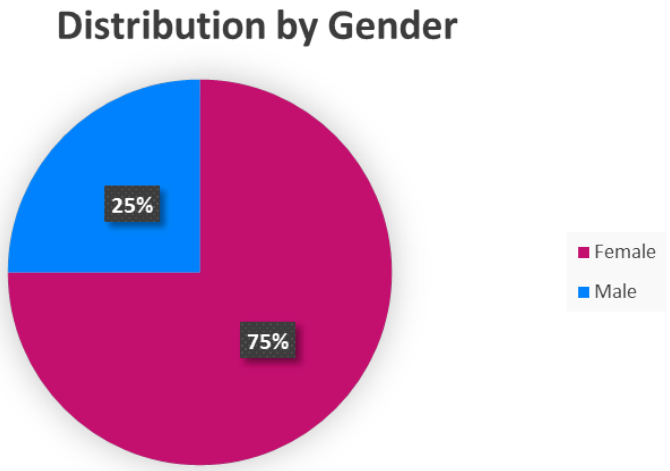


Figure 12- Distribution of participant genders

The data shows that the majority of participants are female, comprising 75% of the group, while males make up 25%.

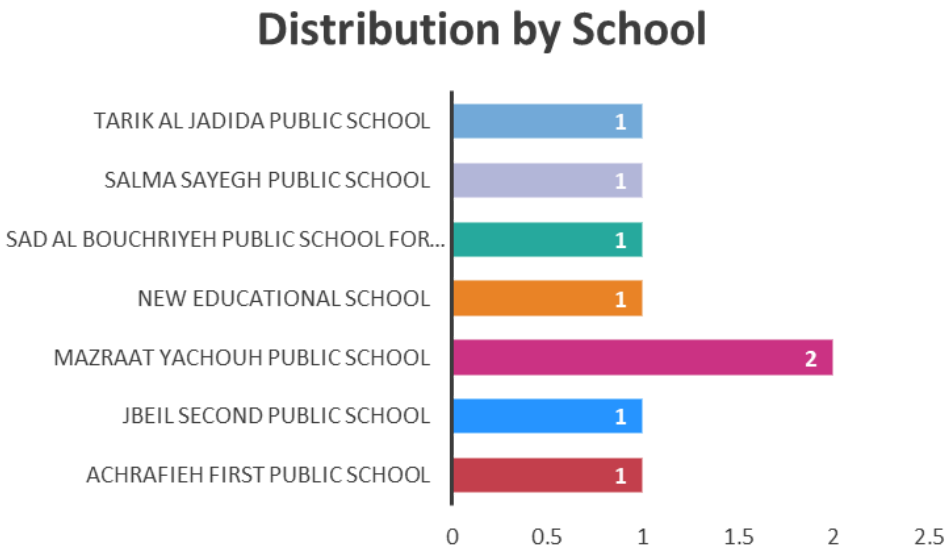


Figure 13- Distribution of participants by school

The data indicates that each of the mentioned schools has one participant, except for Mazraat Yachouh public school, which has two participants.

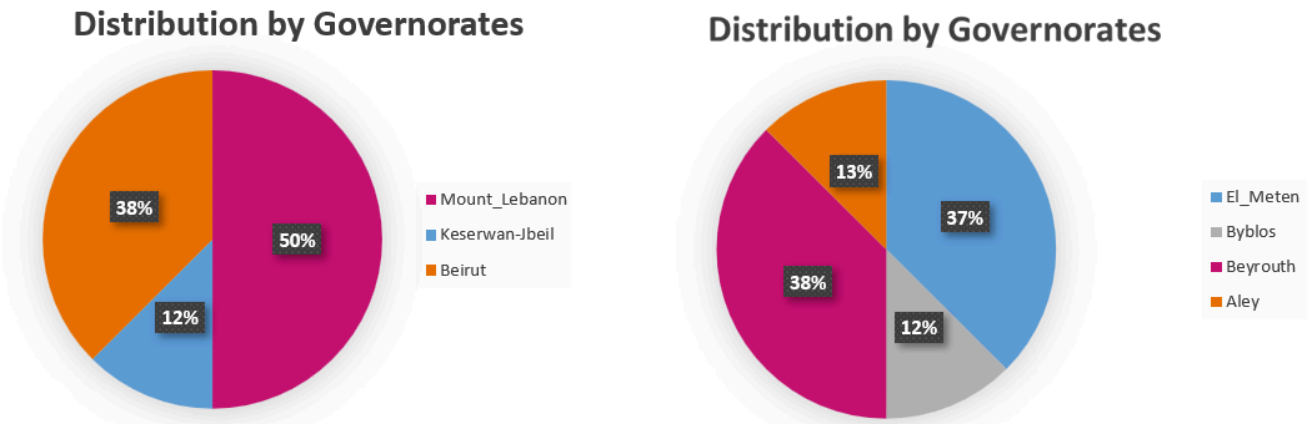


Figure 14- Distribution of participants by governorates and districts

Among the participants, 50% are from Mount Lebanon, 37.5% from Beirut, and 12.5% from Keserwan-Jbeil. At the district level, 37.5% are from both El Meten and Beirut, while Byblos and Aley each account for 12.5%. This distribution indicates a strong representation from Mount Lebanon and Beirut, with fewer participants from Keserwan-Jbeil, Byblos, and Aley.

Pre-test and Post-test Results and Analysis

The pre-post tests were developed in collaboration with the trainers and LAL's tech experts before the commencement of the training sessions. Both tests contained identical questions to evaluate the impact on knowledge and skill enhancement.

The questions consisted entirely of quantitative multiple-choice items, divided into two distinct sections:

- Section 1: Familiarity with Tabshoura platform and application - includes 1 question.
- Section 2: - Tabshoura application usage and its features, with 6 questions included.

Each IT and staff member was allotted 15 to 20 minutes to complete each test. These tests were developed on KOBOToolbox by LAL's team and distributed to the trainees through a link and QR code. The raw data generated from the tests was prepared for analysis. All 8 participants completed the pre-test, but only 2 completed the post-test. This report will primarily focus on evaluating and comparing the results of the 2 participants who completed both the pre-test and post-test. The pre-test results will be addressed separately. The reasons for the low completion rate of the post-test are unclear, though it may be due to school staff being overwhelmed by the end of the academic year and final exams. The pre-tests had a higher participation rate as they were completed immediately onsite, ensuring more comprehensive involvement.

Baseline Data

To evaluate the prior knowledge of participating IT personnel and staff members, we administered a quantitative question regarding their familiarity with the Tabshoura platform and application. This was followed by additional quantitative questions focused on the features of the Tabshoura application.

The results revealed that 50% of the participants were aware of Tabshoura but had not used it, while the remaining 50% were not familiar with it at all. Among those who did not complete the post-test, 67% were unfamiliar with Tabshoura, whereas 33% had some level of familiarity with it.

Pre-Post Test Analysis:

All questions were evaluated on a scale from 0 to 5.

Pre-test Scores:

The following findings and graphical representation display the results of the pre-test, completed by 2 individuals.

Mean score: 3.12
Standard deviation: 2.41

Post-test Scores

The same 2 members who participated in the pre-test also completed the post-test.

Mean score: 3.58
Standard deviation: 2.23

The pre-test scores, completed by two individuals, provide a baseline measurement of their initial knowledge and skills related to the subject matter. The mean score for the pre-test was 3.12, with a standard deviation of 2.41. The relatively high standard deviation suggests a considerable variability in the participants' knowledge or skills before the training, indicating that one participant may have had a significantly different level of understanding compared to the other.

Following the training, the same two participants completed the post-test. The mean score increased to 3.58, reflecting an overall improvement in their knowledge or skills. Additionally, the standard deviation decreased to 2.23, which indicates that the variability in their scores had reduced. This reduction in variability suggests that the training helped bring the participants knowledge or skills to a more consistent level.

Overall, the data indicates that the training had a positive impact on the participants, enhancing their understanding and aligning their skill levels more

closely. The improvement in mean scores by approximately 14.74%, coupled with the reduced standard deviation, demonstrates that the training was effective in both elevating and standardizing the participants' knowledge and skills.

The analysis of the six participants who took part in the pre-test only reveals important insights into their initial knowledge and skills. The mean score for these participants was 2.31, with a standard deviation of 1.95.

Mean Score: 2.31
The mean score of 2.31 indicates a moderate level of initial knowledge or skills among the participants. This score is relatively low compared to a perfect score of 5, suggesting there is room for improvement.

Standard Deviation: 1.95
The standard deviation of 1.95 indicates a high level of variability in the participants' scores. This suggests that there were significant differences in the knowledge or skills among the six participants. Some participants likely had much higher scores than others, showing a disparity in their understanding or preparedness for the subject matter.

Overall Analysis
The data from the pre-test for these six participants shows that, on average, their knowledge or skills were moderate but varied significantly. The high standard deviation highlights that the group was not homogeneous in terms of their understanding, indicating that some participants may need more support or targeted interventions to reach the level of their peers.

In summary, the pre-test results for these six participants underscore the need for differentiated instruction and support to address the varying levels of initial knowledge and skills within the group.

The subsequent sections will present the pre-post-test results, supported by visual representations.

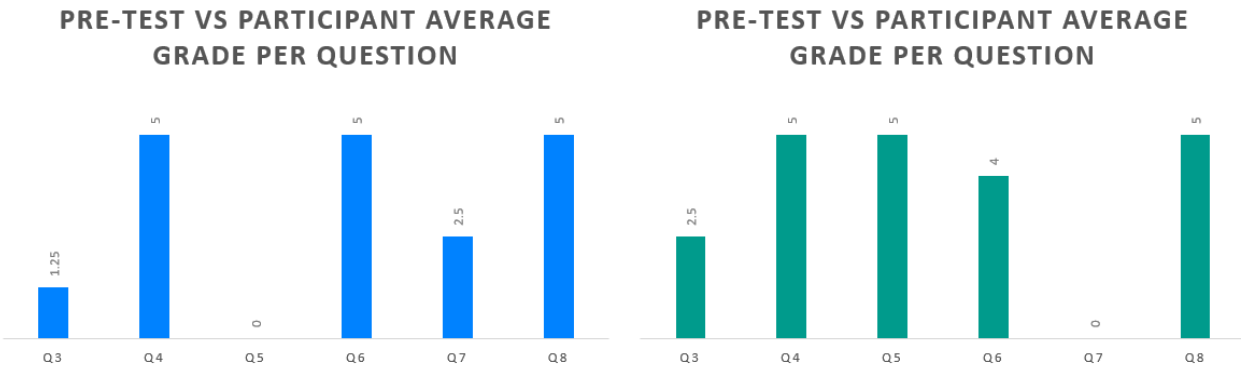


Figure 15- Average Grades Per Question: Pre-test vs. Post-test Comparison

Pre-test and Post-test Comparison Analysis

This analysis examines how the participants' grades changed from a pre-test to a post-test across various questions. By assessing where grades improved, remained stable, or decreased, we gain insights into their learning progress and identify areas that may need further attention in the training program.

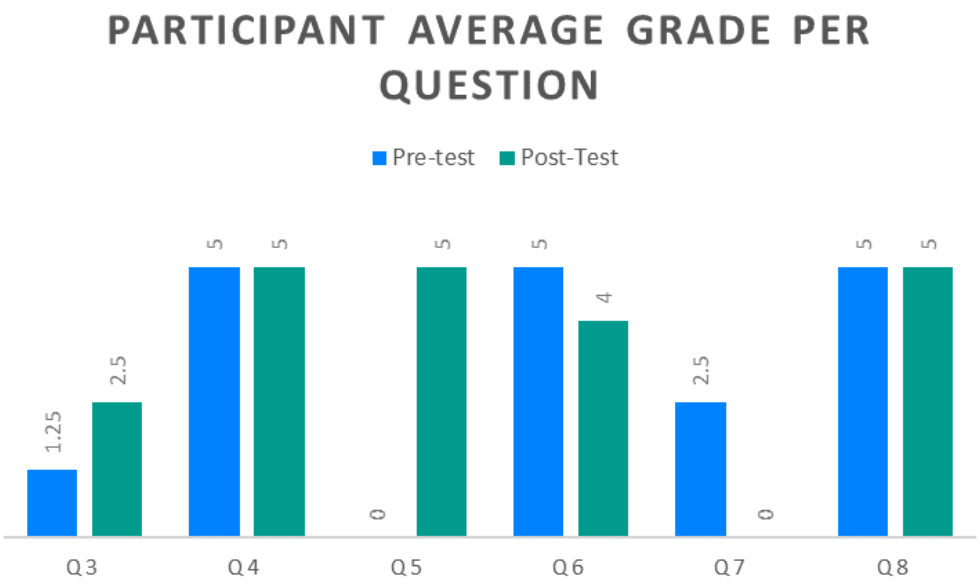


Figure 16- Average Grades Per Question: Pre-test vs. Post-test Comparison

General Improvement:

Overall, the participants showed improvement in their performance across the questions from the pre-test to the post-test.

Significant Increases:

- **Q5:** There was a significant performance improvement, with the average grade increasing from 0 in the pre-test to 5 in the post-test.

Moderate Increases:

- **Q3:** The average grade increased noticeably from 1.25 in the pre-test to 2.5 in the post-test.

Minor Increases or Stable Performance:

- **Q4 and Q8:** Both questions showed stable performance, with the average grade remaining at 5 in both the pre-test and post-test.

Decreases in Performance:

- **Q6:** There was a slight decrease in performance, with the average grade dropping from 5 in the pre-test to 4 in the post-test.
- **Q7:** Performance decreased notably from 2.5 in the pre-test to 0 in the post-test.

Overall, the participants generally improved their performance from the pre-test to the post-test. Significant increases were noted in Question 5 and moderate increases in Question 3. Questions 4 and 8 showed stable performance, while slight and notable decreases were observed in Questions 6 and 7, respectively. These results highlight both progress and areas for potential focus in future learning efforts.

It is important to note that due to the limited number of participants who completed the post-test assessment, the data collected may not provide a comprehensive understanding of the training's impact. Additionally, efforts to follow up with participants to complete the post-test evaluation form were unsuccessful, further limiting the scope of the study's findings. These factors underscore the challenges in obtaining robust data and highlight the need for enhanced participant engagement and follow-up strategies in future assessments to ensure a more thorough evaluation of training effectiveness.

Student Implementation at Salma Sayegh Public School

Implementing with students

With the completion of their training, teachers have demonstrated enhanced skills, and the technical staff are prepared to manage the proper setup for the new Blended Learning Model to be introduced to students. The implementation of this model with students commenced on April 8, 2024, for some schools, while others began on April 15, 2024, due to public holidays affecting the schedule.

students had a month-long pilot period until May 31, 2024, to experience and adapt to the new Blended Learning Model. This approach integrates technology into their learning experience, offering a new method of engagement and interaction. The pilot aimed to assess the effectiveness of the model and make necessary adjustments before broader implementation.

To implement the first three steps of the Blended Learning Model—discovery in a flipped mode, learner-led discussion, and dynamic learning—students first engage in asynchronous learning at home using digital tools like Tabshoura. The discovery phase in a flipped classroom model allows them to absorb new content via online resources before class. Once in class, learner-led discussions provide an opportunity for students to delve deeper into the material, fostering critical thinking and engagement. The dynamic learning phase involves collaborative work, interactive discussions, and hands-on practical tasks, ensuring a deeper understanding and creating an active, engaging learning environment. This approach maximizes valuable instructional time and enhances learning outcomes.

A total of 1,842 students from nine public schools and one semi-private school participated in the implementation of the Blended Learning Model. To evaluate the program's effectiveness, pre-test and post-test assessments were conducted. Initially, 442 students completed the pre-test assessment before the implementation began. Following the implementation period, 690 students participated in the post-test assessment. These assessments were designed to measure the impact of the Blended Learning Model on student learning and engagement, providing valuable data to assess improvements and identify areas for further enhancement.

Participants Demographics

The following demographics describe the 847 students from grades one through nine who completed the pre-test, post-test, or both. This data includes their age ranges, the subjects they engaged with using the new learning approach, grade levels, the schools they attend, and their locations across various governorates and districts.

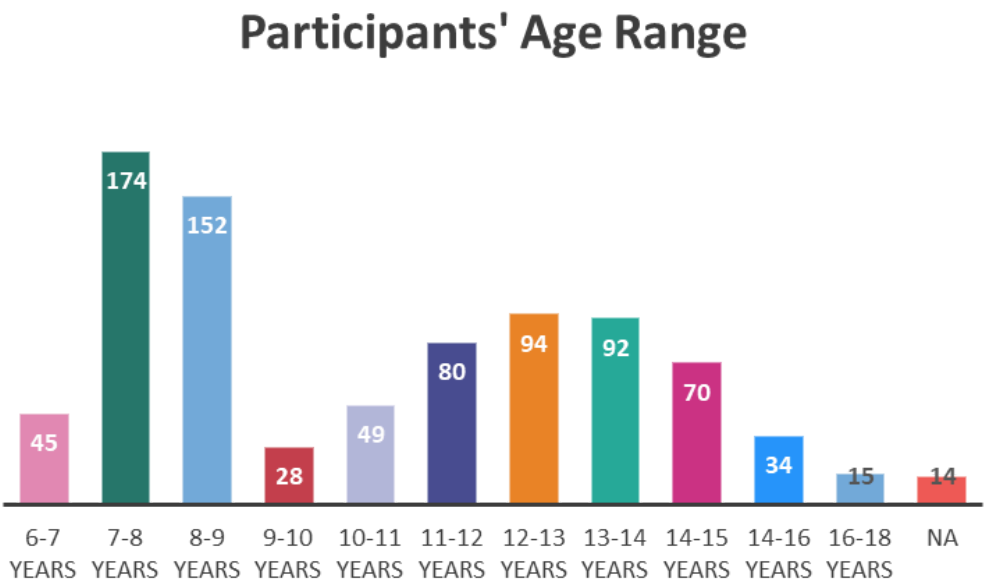


Figure 17- Distribution of Participants Ages

The bar chart shows the age distribution of the 847 student participants revealing several key insights. Most of the participants, 20.5%, fall within the 7-8 years age range, with 174 students. Close behind, 17.9% of students are aged 8-9 years, comprising 152 participants. The 12-13 years age group represents 11.1% of the total, with 94 students, while the 13-14 years age group closely follows at 10.8%, encompassing 92 participants. The 11-12 years age range includes 80 students, representing 9.4% of the participants. Those aged 14-15 years constitute 8.2% of the total, with 70 students. The 10-11 years age range includes 49 students, accounting for 5.8% of participants, and the 9-10 years age group, with 28 students, makes up 3.3%. Additionally, 34 students, or 4.0%, fall within the 14-16 years age range. The 6-7 years age group includes 45 students, representing 5.3% of the total. A smaller percentage, 1.8%, or 15 students, fall within the 16-18 years age range. Lastly, 14 students' ages were not provided, representing 1.6% of the total participants.

This analysis highlights a diverse age distribution among the participants, with the largest groups being the younger students, specifically those aged 7-8 years and 8-9 years.

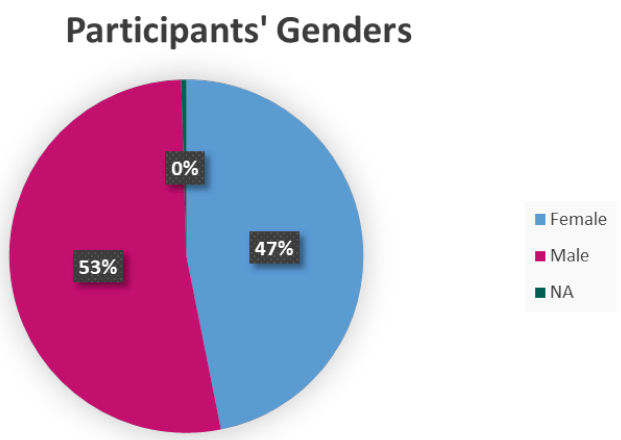


Figure 18- Distribution of participant genders

The chart reflects the gender distribution of the 847 student participants, the data shows a nearly balanced representation between females and males. Specifically, there are 397 female students, which accounts for approximately 46.9% of the participants. Male students numbered 446, making up about 52.7% of the total. Additionally, there are 4 participants, or 0.5%, whose gender was not specified.

This distribution indicates a slightly higher number of male participants compared to female participants, with a very small proportion of students whose gender information is unavailable. The balanced gender representation ensures that the findings of the study can be considered inclusive of both male and female perspectives.

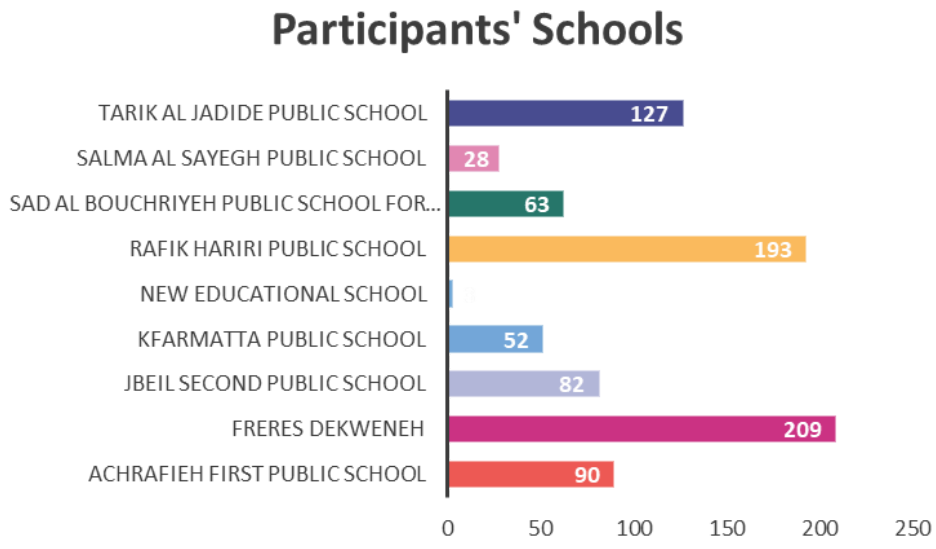


Figure 19 - Distribution of participants by school

The chart represents the distribution of students across different schools, the data indicates varying levels of participation from each institution. Freres

Dekweneh has the highest number of participants, with 209 students, representing approximately 24.7% of the total 847 participants. Rafik Hariri Public School follows with 193 students, making up about 22.8% of the total. Tarik Al Jadide Public School has 127 students, accounting for approximately 15.0%. Achrafieh First Public School contributes 90 students, which is roughly 10.6%. Jbeil Second Public School has 82 students or about 9.7%. Sad Al Bouchriyeh Public School for Boys includes 63 students, representing approximately 7.4%. Kfarmatta Public School has 52 students, making up about 6.1%. Salma Al Sayegh Public School has 28 students, which is roughly 3.3%. New Educational School has the fewest participants, with only 3 students, making up about 0.4% of the total.

This analysis shows a significant variation in student participation across different schools, with the majority of students coming from a few larger institutions. Freres Dekweneh and Rafik Hariri Public School together constitute nearly half of the total participants, highlighting their prominent role in the implementation of the Blended Learning Model. Meanwhile, smaller contributions from other schools indicate a diverse range of educational environments involved in the pilot study.

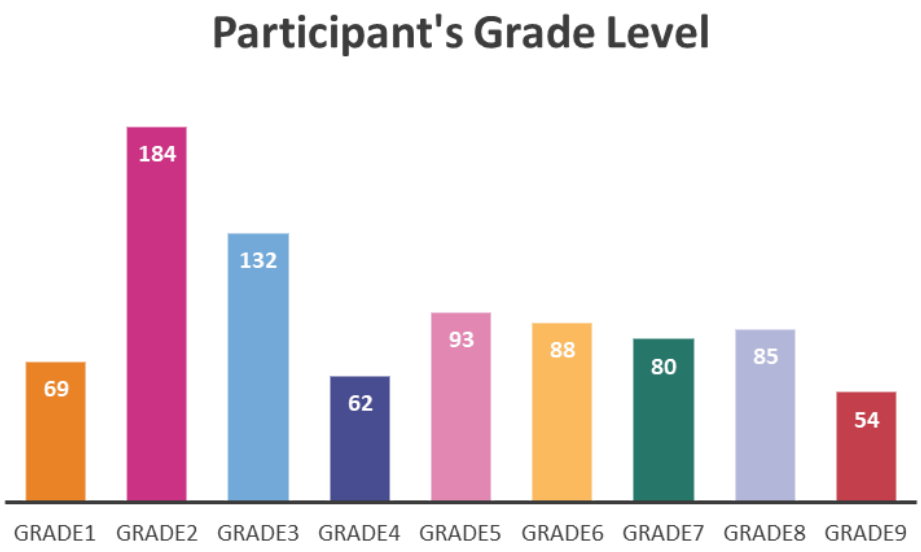


Figure 20- Distribution of grade levels participants teach

The data illustrates the distribution of students across different grade levels, the data reveals a varied level of participation in the Blended Learning Model. Grade 2 has the highest number of participants, with 184 students, representing approximately 21.7% of the total 847 participants. Grade 3 follows with 132 students, accounting for about 15.6%. Grade 1 includes 69 students, making up 8.1% of the participants. Grade 4 has 62 students, or about 7.3%, while Grade 5 has 93 students, representing 11.0% of the total. Grade 6 includes 88 students, making up approximately 10.4%. Grade 7 has 80 students, which is about 9.4% of the participants. Grade 8 has 85 students, representing 10.0%, and Grade 9 includes 54 students, making up 6.4% of the total.

This analysis indicates that the highest participation comes from lower elementary grades, particularly Grade 2 and Grade 3, while the middle and upper grades show a more evenly distributed, though generally lower, level of engagement. This distribution provides valuable insights into which grade levels are more involved in the Blended Learning Model and helps identify potential areas for targeted support and resources.

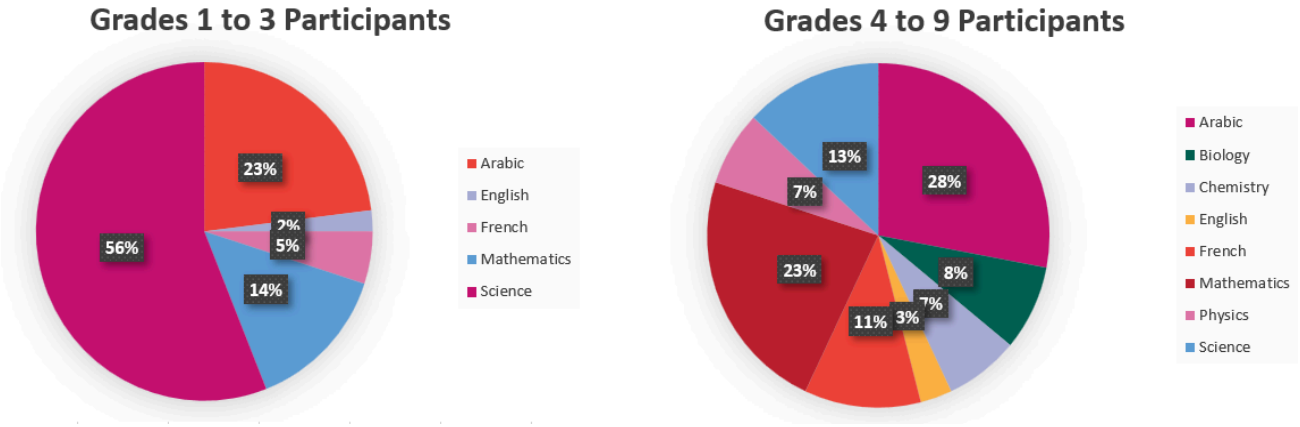


Figure 21 - Distribution of subjects students engaged in, disaggregated by grade levels

The data reveals the distribution for subjects that students engaged in, disaggregated by grade levels, reveals distinct patterns of subject engagement between students in grades 1 to 3 and those in grades 4 to 9.

For students in grades 1 to 3, the most engaged subject is Science, with 56% of students participating. Mathematics follows with 14%, while Arabic is chosen by 23% of the students. French and English have lower engagement levels, with 5% and 2% respectively.

For students in grades 4 to 9, Arabic remains a prominent subject, with 28% of students engaged. Mathematics also shows significant engagement, with 23% of students participating. Science, which includes subjects like Biology, Chemistry, and Physics, sees a more distributed engagement: 8% in Biology, 7% in Chemistry, and 7% in Physics, totaling 22% when combined with general Science at 13%. French is engaged by 11% of students, while English has a lower engagement level of 3%.

This analysis highlights a strong emphasis on Science and Arabic across both grade ranges, with younger students showing high engagement levels in science, while older students display a more balanced distribution across a wider range of subjects.

For students in grades 4 to 9, 44% of them participated in multiple subjects during the intervention period.

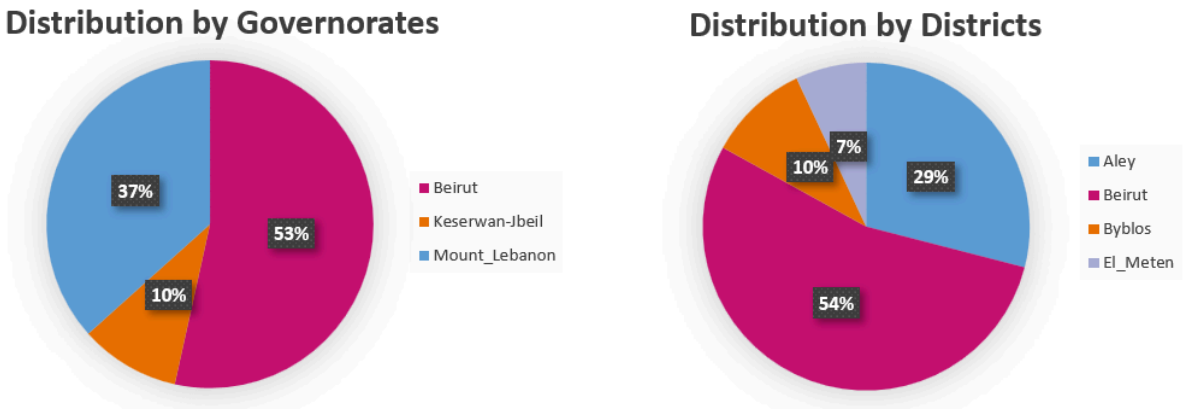


Figure 22- Distribution of participants by governorates and districts

As for the geographic distribution of students, the data reveals that a significant portion of participants come from different governorates and districts.

Within the governorates, Beirut stands out with 54% of the students, indicating that more than half of the participants are from this area. Mount Lebanon follows with 37%, showing substantial participation from this region as well. Keserwan-Jbeil contributes 10% of the students, making it the third largest contributor.

Examining the districts, Beirut again has the highest percentage of participants at 54%, consistent with the governorate data. Aley accounts for 29% of the participants, reflecting significant engagement from this district within Mount Lebanon. Byblos, corresponding to Keserwan-Jbeil governorate, contributes 10% of the participants. El Meten, another district within Mount Lebanon, includes 7% of the students.

This analysis highlights Beirut as the primary source of participants, followed by substantial contributions from districts within Mount Lebanon, particularly Aley and El Meten. The data underscores the regional diversity of the student population involved in the study.

Pre-test and Post-test Results and Analysis

The pre-post tests were developed in collaboration with LAL's digital experts and designers of the new Blended Learning Model to evaluate the impact on students' learning outcomes. Both tests contained identical questions. Two distinct pre-post assessments were created for students implementing the new learning approach: one for students from KG to grade 3, and one for students from grade 4 to 9, which will be thoroughly discussed in a separate section of this report.

KG To Grade 3 Implementation

For students from KG to grade 3, an Excel assessment form was developed, designed to be completed with the support of their teachers.

During the final wrap-up training session with teachers, just before implementation, LAL digital experts explained the assessment tools.

The questions were categorized into two sections:

- Section 1, Student Skills & Knowledge, comprised 7 quantitative questions.
- Section 2, Student Satisfaction with the new learning approach, included 1 quantitative question.

On April 8th and 15th, students, with the support of their teachers, filled out the pre-assessment form. Approximately 150 students completed the pre-test form, while 385 students filled out the post-test form on May 31, 2024. Notably, all 150 students who took the pre-test also completed the post-test. However, the remaining 235 students who took the post-test did not take the pre-test, and their analysis will be discussed separately. To protect student identities, names were not shared; instead, student IDs were used to facilitate comparative analysis.

Pre-Post Test Analysis:

All questions were graded on a scale ranging from 0 to 5.

Pre-test Scores:

The following findings and graphical representation display the results of the pre-test, completed by 150 students.

Mean score: 2.58
Standard deviation: 1.77

Post-test Scores

The same 150 students who participated in the pre-test also completed the post-test.

Mean score: 3.22
Standard deviation: 1.74

The pre-test data collected indicated a mean score of 2.58 with a standard deviation of approximately 1.78. This variability in scores suggests a diverse range of initial academic levels among the students before the intervention period. Following the intervention, the post-test results showed a notable improvement, with the mean score increasing to 3.22 and a slightly reduced standard deviation of about 1.75. This decrease in score variability indicates that the intervention helped to bring student performances closer to the higher mean score achieved after the implementation period.

Standard Deviation:

The pre-test standard deviation of approximately 1.78 indicates that student scores varied around the mean of 2.58. This variability suggests diversity in initial performance levels among the students before the intervention or teaching period began. The post-test standard deviation of about 1.75 shows a slight decrease in score variability compared to the pre-test. This indicates that after the intervention, student performance became slightly more clustered around the higher mean score of 3.22, suggesting a more consistent improvement across the cohort.

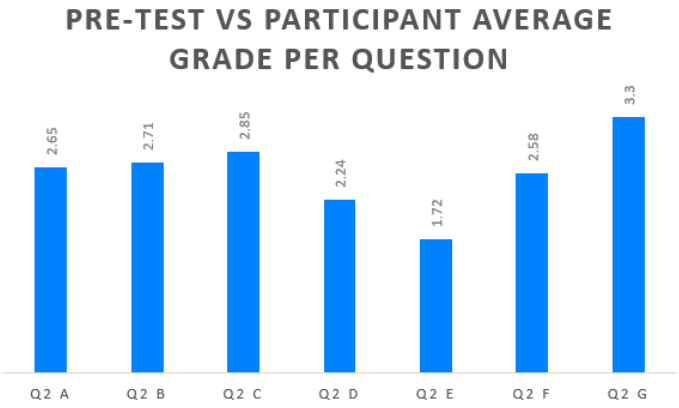
Improvement Percentage:

The difference of approximately 0.64 points between the post-test and pre-test scores signifies the average improvement per student. This improvement represents a rate of 24.79%, indicating that, on average, students' scores increased by about a quarter after the intervention compared to their initial scores.

Analysis:

The evidence shows that the intervention effectively improved student performance across grades 1 to 3. The completion rate and consistent improvement percentages reinforce the success of the educational strategies employed during this period. This analysis affirms that the intervention period effectively facilitated improved academic achievement among the evaluated student group, showcasing positive educational outcomes within the specified timeframe.

The following sections will showcase the outcomes of the post-assessment, complemented by visual aids.



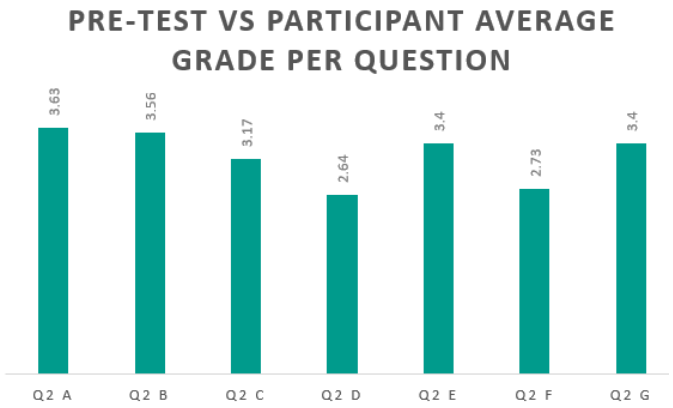


Figure 23- Average Grades Per Question: Pre-test vs. Post-test Comparison

Pre-test and Post-test Comparison Analysis

The differences between the pre-test and post-test outcomes are notable. Detailed score information is provided below, along with a visual representation.

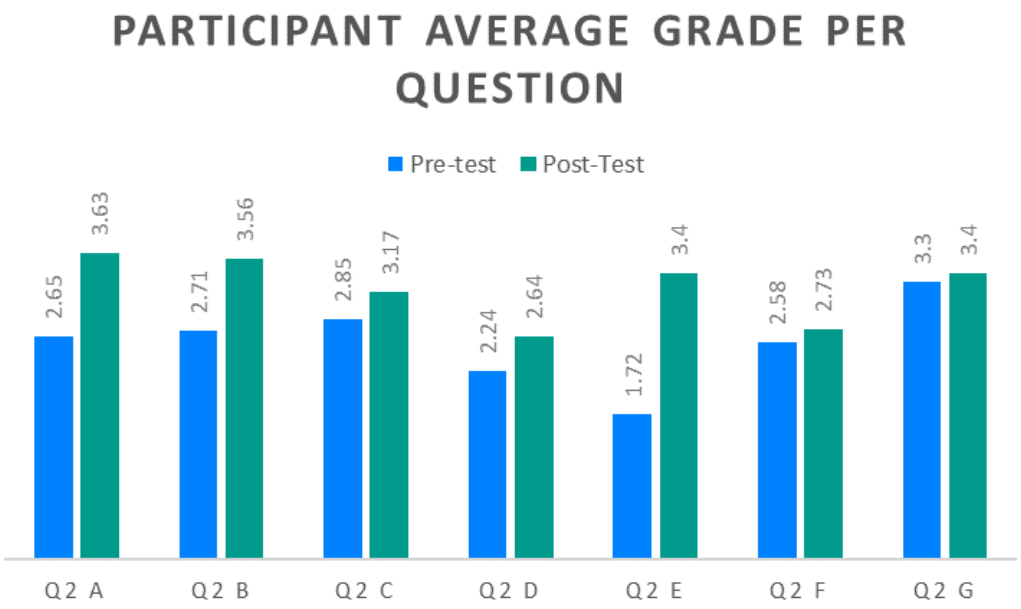


Figure 24- Average Grades Per Question: Pre-test vs. Post-test Comparison

The data presented consists of average grades per question for students in a pre-test and post-test setting. The specific questions (labeled Q2 A through Q2 G) show varying degrees of improvement between the two assessments.

For **Question 2 A**, the average grade increased from 2.65 in the pre-test to 3.63 in the post-test, indicating a substantial improvement. This rise of 0.98 points suggests that students demonstrated a better understanding or skill in this area after the intervention.

Question 2 B saw the average grade rise from 2.71 to 3.56, reflecting an improvement of 0.85 points. Similar to Q2 A, this increase signifies a positive effect of the educational strategies implemented, with students showing enhanced performance in this specific question.

In **Question 2 C**, the average grade improved from 2.85 to 3.17, a more modest increase of 0.32 points. Although the improvement is smaller compared to other questions, it still indicates progress and a better grasp of the material by the students.

Question 2 D had an average grade increase from 2.24 to 2.64. The 0.40-point improvement, while moderate, suggests that students made noticeable gains in their understanding or ability to answer this question correctly post-intervention.

Question 2 E exhibited a significant jump in average grade from 1.72 to 3.4, marking an increase of 1.68 points. This large improvement implies that students initially struggled with this question but showed remarkable progress after the teaching period, indicating a highly effective intervention in this area.

Question 2 F experienced a slight increase in the average grade, from 2.58 to 2.73, an improvement of 0.15 points. Although the improvement is minor, it still represents positive movement and indicates some degree of learning and better performance.

Lastly, **Question 2 G** saw a minimal increase in the average grade from 3.3 to 3.4, an improvement of just 0.1 points. This slight change suggests that students were already performing well on this question in the pre-test, and the intervention had a limited impact, possibly due to a ceiling effect where scores could not increase significantly further.

Overall Analysis

The pre-test and post-test data collectively show an overall positive trend in student performance across the questions. Each question demonstrated some level of improvement, with notable increases in questions Q2 A, Q2 B, and especially Q2 E. The smallest improvements were seen in Q2 F and Q2 G, which could be attributed to the students' already high performance in these areas or the possibility that these questions were less influenced by the intervention. The varying degrees of improvement across different questions highlight areas where the intervention was particularly effective and others where additional focus may be needed. The substantial improvement in Q2 E indicates that the teaching strategies employed were highly successful in addressing initial difficulties. In contrast, the minimal change in Q2 G suggests that while students performed well initially, there might be a need to challenge them further to ensure continued growth.

The data analysis reveals that the intervention had a positive impact on student performance, with varying levels of improvement across different questions.

The analysis of post-test data for students who did not take the pre-test reveals overall positive performance with a mean score of 2.85. Most students scored high, particularly in Questions 2 A, 2 B, 2 F, and 2 G, indicating the impact of the intervention. However, Questions 2 D and 2 E showed more variability in scores, with several students scoring lower, suggesting some students need more time to implement the program. The high frequency of scores of 4 in many questions demonstrates effective understanding, while the presence of lower scores highlights areas that may require additional instructional focus. Overall, the data suggests a generally good performance with room for targeted improvement in specific areas.

Students Experience with The New Learning Approach

To evaluate the program's effectiveness from the student's perspective, a question was included in the assessment asking students to rate their overall experience with the new learning approach before and after the intervention. With their teachers' support, students provided ratings on their experience with the implementation of the new Blended Learning Model. The results of these ratings are presented in the following section.

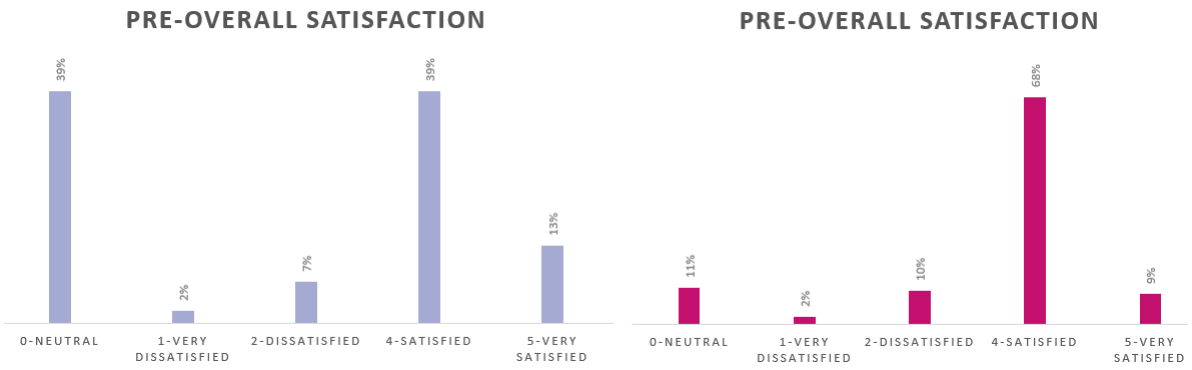


Figure 25- Overall Student Satisfaction with the New Learning Approach: Pre vs. Post Intervention

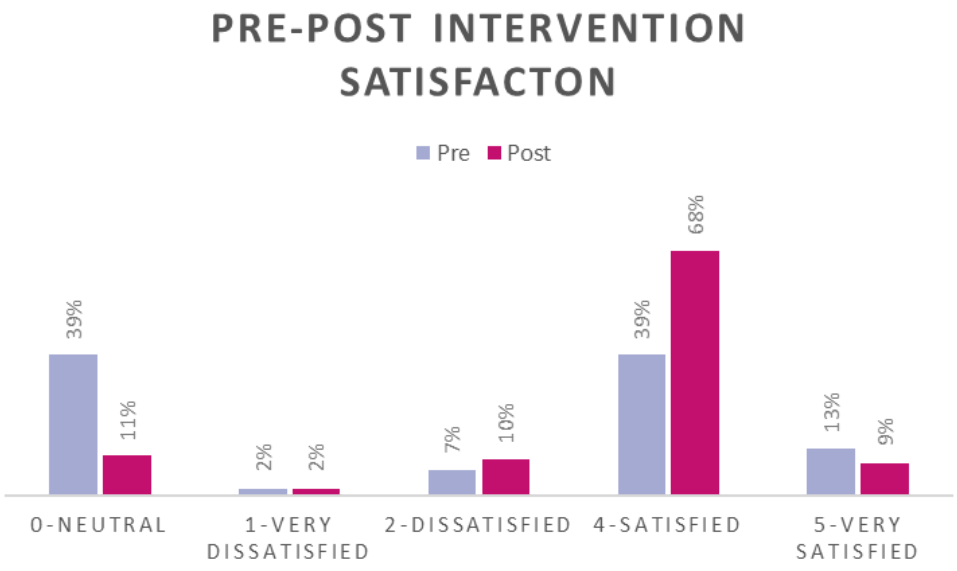


Figure 26- Overall Student Satisfaction with the New Learning Approach: Pre-test vs. Post-test Comparison

The data on student satisfaction with the new learning approach before and after the intervention indicates a significant shift in overall sentiment. Pre-intervention, the highest proportion of students (39%) were neutral, with 39% satisfied and 13% very satisfied. Post-intervention, the neutral responses dropped markedly to 11%, suggesting a clearer opinion among students. Satisfaction increased substantially, with 68% of students reporting they were satisfied, up

from 39%. However, the proportion of very satisfied students decreased slightly from 13% to 9%. Dissatisfaction saw a minor increase, with dissatisfied students rising from 7% to 10%, while very dissatisfied remained constant at 2%. Overall, these changes suggest that the intervention led to a more definitive and positive shift in student satisfaction, despite a slight increase in dissatisfaction and a minor decrease in those who were very satisfied.

Grade 4 to Grade 9 Implementation

Students from grades 4 to 9 were required to independently complete the assessment forms online. The pre-post tests were created on KOBOToolbox by LAL's team, with the link and QR code provided to teachers during the final wrap-up training session before implementation. The questions were developed in collaboration with LAL's digital experts and Blended Learning Model designers. The pre-post tests included identical questions to facilitate evaluation and were categorized into two sections:

- Section 1, Student Skills & Knowledge, comprised 8 quantitative statements to measure student motivation, participation, collaborative work, digital skills, and autonomy.
- Section 2, Student Satisfaction with the new learning approach, included 1 statement.

On April 8th and 15th, students filled out the pre-assessment form. The pre-test was completed by 292 students, while 305 students completed the post-test on May 31, 2024.

To safeguard student identities, data was collected anonymously for both assessments. Due to limited project implementation time and communication challenges, we were unable to assign identification numbers to the students, preventing tracking of those who did not participate in the post-test survey. This constraint suggests that the post-assessment results may be biased as we are unable to eliminate the additional 13 students who filled out the post-assessment.

Pre-Post Tests Analysis:

The following findings and graphical representation display the results of the pre-test, completed by 292 students, and the post-test completed by 305 students.

Students were asked to rate 7 statements on a scale of 1 to 5 representing the following options- 1) Strongly Disagree, 2) Disagree, 0) Neutral, 4) Agree, 5) Strongly Agree. The following sections will showcase the outcomes of the post-assessment, complemented by visual aids.

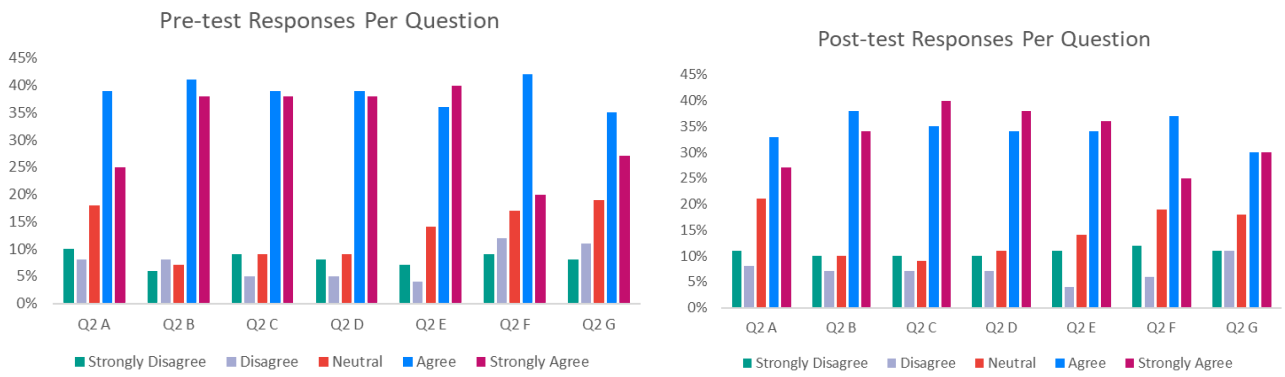
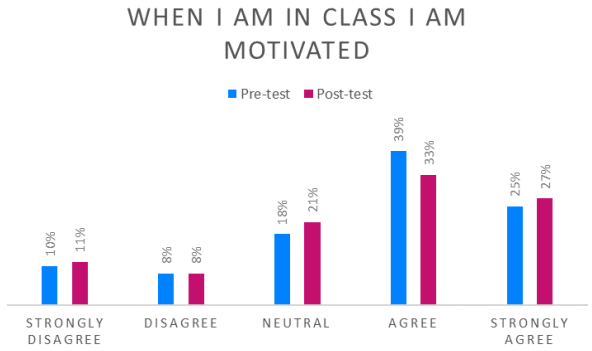


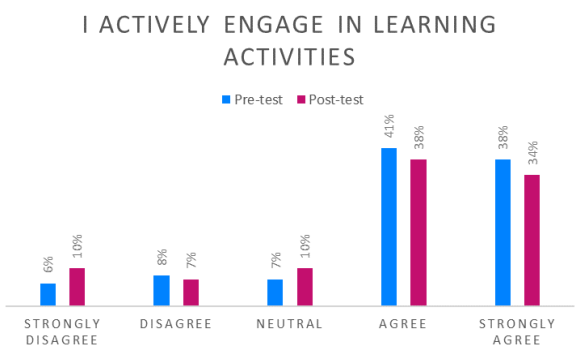
Figure 27- Pre-test vs. Post-test Comparison Per Question

A comparative analysis of the pre-test and post-test results indicates shifts in student satisfaction and perception regarding the new learning approach. For Q2 A, the percentage of students who agreed decreased from 39% to 33%, while those who strongly agreed slightly increased from 25% to 27%. Q2 B saw a slight decline in both agreement and strong agreement, with a rise in neutrality and disagreement. Q2 C's agreement dropped from 39% to 35%, but strong agreement increased from 38% to 40%. Q2 D experienced a reduction in agreement from 39% to 34%, maintaining a steady level of strong agreement. Q2 E showed a decrease in both agreement and strong agreement, with no change in neutrality. Q2 F had a notable decline in agreement from 42% to 37% and a shift in strong agreement from 20% to 25%, with increased neutrality and disagreement. Q2 G saw a decrease in agreement from 35% to 30%, with a slight increase in strong agreement and stable neutrality and disagreement levels. Overall, these results suggest mixed outcomes with varying degrees of satisfaction and perception shifts post-intervention.

Pre-test and Post-test Comparison Analysis

The variations in the pre-test and post-test results for each statement will be detailed below, accompanied by a visual illustration.





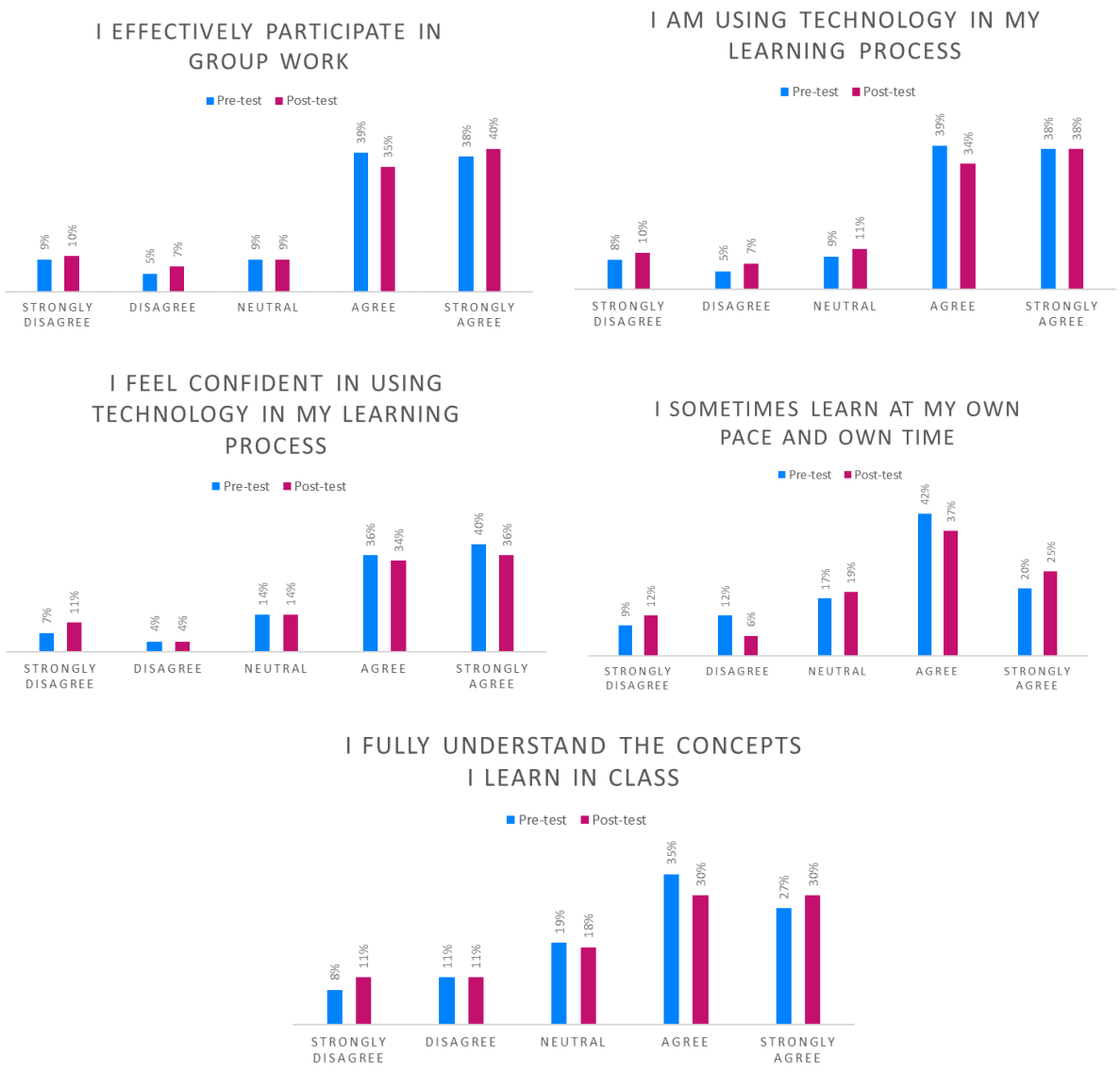


Figure 28- Pre-test vs. Post-test Comparison Per Question

This analysis compares student responses to a set of statements before and after the implementation of a new learning approach. The data is categorized into levels of agreement: Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree. By examining the shifts in these categories, we can assess the impact of the new approach on student perceptions and satisfaction.

S1. When I am in class I am motivated (S2 A): The pre-test results showed that 64% of students either agreed or strongly agreed with the statement, indicating a high level of motivation. However, post-test results show a slight decline, with 60% in agreement or strong agreement. The proportion of students who are neutral or disagreeing has increased, suggesting a possible decrease in overall class motivation.

S2. I actively engage in learning activities (S2 B): Before the intervention, 79% of students agreed or strongly agreed that they actively engaged in learning activities. Post-intervention, this figure has decreased to 72%. There is a noticeable increase in the percentage of students who are neutral or disagree, indicating a reduction in perceived active engagement.

S3. I effectively participate in group work (S2 C): Pre-test responses indicated that 77% of students felt they participated effectively in group work. After the intervention, this percentage remains stable at 75%, with a slight increase in strong agreement. This suggests a minor improvement in student confidence regarding group work participation.

S4. I am using technology in my learning process (S2 D): Initially, 77% of students agreed or strongly agreed with the statement. This figure dropped to 72% post-test, with more students falling into the neutral or disagreement categories. This indicates a reduced perception of technology usage in the learning process after the intervention.

S5. I feel confident in using technology in my learning process (S2 E): Confidence in using technology saw a slight decline post-intervention, from 76% agreeing or strongly agreeing to 70%. This is coupled with an increase in strong disagreement, suggesting some students feel less confident with the new technology-focused learning model.

S6. I sometimes learn at my own pace and own time (S2 F): Pre-test responses showed 62% of students felt they could learn at their own pace and time, which slightly decreased to 62% post-test. There is a noticeable increase in strong disagreement, indicating some students feel more constrained by the new learning model.

S7. I fully understand the concepts I learn in class (S2 G): Initially, 62% of students agreed or strongly agreed with the statement, which marginally dropped to 60% in the post-test. The increase in neutral and disagreement responses points towards a slight reduction in perceived comprehension of class concepts post-intervention.

While there are some improvements in specific areas like effective participation in group work, the overall trend suggests a decrease in student motivation, engagement, and confidence in using technology after the implementation of the new learning approach. The data indicates that while the blended learning model may have potential benefits, it also presents challenges that need to be addressed to better meet student needs and expectations.

Students Experience with The New Learning Approach

To evaluate the program's effectiveness from the student's perspective, a question was included in the assessment asking students to rate their overall experience with the new learning approach before and after the intervention. With their teachers' support, students provided ratings on their experience with the implementation of the new Blended Learning Model. The results of these ratings are presented in the following section.

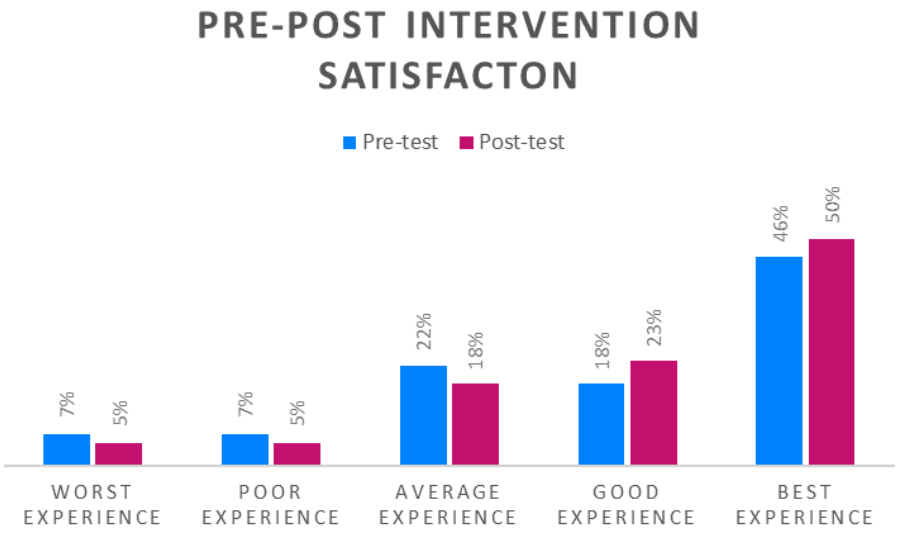


Figure 29- Overall Student Satisfaction with the New Learning Approach: Pre vs. Post Intervention

Analysis of students Overall Satisfaction with the New Learning Approach

The provided data shows a comparison between pre-test and post-test ratings of students' overall satisfaction with the new learning approach.

Worst Experience: The percentage of students who rated their experience as the worst decreased slightly from 7% in the pre-test to 5% in the post-test. This suggests a small reduction in the number of students having the worst experience with the new learning approach.

Poor Experience: Similarly, those who rated their experience as poor also saw a slight decrease, from 7% pre-test to 5% post-test. This indicates an overall improvement in student satisfaction, reducing the number of students with a negative view.

Average Experience: There is a noticeable decrease in the percentage of students who rated their experience as average, dropping from 22% pre-test to 18% post-test. This could suggest a shift from average to higher satisfaction levels among students.

Good Experience: The proportion of students who rated their experience as good increased from 18% in the pre-test to 23% in the post-test. This indicates a positive shift in student satisfaction with the new learning approach.

Best Experience: The most significant change is observed in the "Best Experience" category, which increased from 46% in the pre-test to 50% in the post-test. This highlights that half of the students rated their experience as the best after the implementation of the new learning approach, demonstrating a notable improvement in overall student satisfaction.

The post-test results indicate a general increase in student satisfaction with the new learning approach. There is a decrease in negative ratings (worst and poor experiences) and average ratings, with a corresponding increase in positive ratings (good and best experiences). This suggests that the new learning approach has positively impacted students' overall satisfaction.

TFL Fellow training teachers at Sad Al Bouchriyeh Public School

Challenges

Developing and implementing a blended learning model in the Lebanese context presented several unique challenges that became evident during various stages of the process, including the training of fellows, cascading training to teachers, and the eventual implementation with students. When launching our program, we encountered the following pitfalls:

1. Broad Assessment of Teacher Needs

Our initial approach to assessing teacher needs was too generalized. We conducted broad assessments, which led us to the flawed assumption that all public-school teachers had similar needs and challenges. This assumption failed to recognize the diverse and unique obstacles faced by individual teachers, such as:

- Variability in Technological Proficiency
- Different Pedagogical Approaches
- Resource Disparities

2. Country Safety and Security

The second training was conducted virtually for security reasons. As a result, both the duration and content of their training were insufficient. This led to inadequate preparation of the fellows.

3. Underutilization of the Education Committee

We did not fully leverage the potential of the education committee established to support us. This committee could have provided valuable insights and assistance.

4. Data Collection and Analysis:

During the data collection and analysis phase of the program, several challenges arose that affected the assessment of its impact. **Data**

- The teachers post-assessment, which was originally scheduled before student implementation, faced delays due to miscommunication. This delay hindered the timely analysis of data crucial for assessing the program's effectiveness.
- Only two participants completed the IT post-assessment, significantly limiting the data available. This scarcity made it difficult to conclusively determine the overall impact of the training on participants.

5. Intervention Timeline:

- Student implementation occurred over one month, coinciding with the end of the academic year. This timing resulted in fewer participants. contributing to all assessments, affecting the breadth and depth of data available for analysis.

Lessons Learned

1. Integrate Teachers as Partners from Inception to Implementation

One of the key lessons learned is the importance of involving teachers as active partners throughout the entire process, from the inception of the program to its implementation. This approach ensures that their insights, challenges, and suggestions are considered.

2. Conduct a Differentiated Needs Analysis

Recognizing that teachers have diverse skills, experiences, and challenges, it is essential to conduct a differentiated needs analysis. This means assessing the specific needs of individual teachers rather than relying on broad, generalized assessments.

3. Adapt the Toolkit to the Identified Skills of the Teachers

Once the specific skills and needs of the teachers have been identified, it is crucial to adapt the training accordingly. A one-size-fits-all approach is ineffective in addressing the diverse skill sets of teachers.

4. Allocate More Time to Training

Adequate training time is essential for teachers to fully grasp and implement new instructional strategies.

5. Consult the Education Committee Often

Regular consultation with the education committee ensures that the program benefits from expert insights and aligns with broader educational goals and policies.

6. Create a Community of Teachers to Consult

Building a community of teachers fosters collaboration, peer support, and shared learning. This community can be a valuable resource for teachers as they navigate challenges.

Conclusion

The Blended Learning Model training program has shown significant positive impacts across multiple participant groups—teachers, IT professionals, and students alike. For teachers, the program effectively enhanced their understanding and practical application of blended learning methodologies, bolstering their confidence in integrating digital tools into lesson planning and classroom instruction. This improvement is crucial in adapting teaching practices to modern educational demands.

IT professionals benefited from the program by improving their proficiency in utilizing technology tools essential for supporting Tabshoura programs at their schools. This development not only enhances their ability to maintain and optimize digital learning environments but also ensures robust technical support for educators and students.

Among students, the program yielded notable benefits including improved learning and enhanced satisfaction with the learning experience. However, challenges such as maintaining motivation and engagement highlight areas where targeted strategies could further improve outcomes. The positive shift in student satisfaction indicates that the program effectively addressed initial concerns and positively impacted their overall learning experience. Continued refinement and adaptation of strategies will be key to further enhancing these positive impacts and addressing ongoing challenges in educational settings.

Teacher Training at Kfarmatta Public School

Tarik Al Jadide Public School

Annex A: Training Assessments

Teacher Evaluation

Blended Learning Training Pre-Post Test (Questionnaire)

Instructions: Please answer the following questions to the best of your ability. There are no right or wrong answers. This questionnaire will help us understand your current knowledge and skills related to blended learning.

1A. Please provide your full name: (Text)
1B. Do you teach?
- Yes
- No

1C. (If yes) What grade(s) and subject(s) do you teach? (Text)

Section 1: Online Learning
2 A. Have you participated in any online courses or e-learning programs before?
- Yes
- No

2 B. (If yes) How would you describe your experience with online learning?
- I had a very positive experience
- I had a positive experience
- I had a very negative experience
- I had a negative experience

2 C. Are you familiar with Tabshoura Platform?
- Yes
- No

2 D. (If yes) Have you used Tabshoura previously?
- Yes
- No

2 E. Were you able to navigate and use Tabshoura platform on your own?
- Yes
- No

2 F. Did you feel that Tabshoura platform was a valuable tool to enrich your teaching experience?
- Yes
- No

2 G. What do you understand by the term "learner-centered instruction"? Please provide a brief explanation. (Open-ended - Text)
2 H. What are your thoughts on the role of the teacher in a learner-centered, blended learning environment, and how does it differ from traditional teaching roles? (Open-ended - Text)

Section 2: Understanding Blended Learning

3 A. What is blended learning? Please select the best answer from the options below

- The same as Hybrid Learning
- The same as Online Learning
- A mix of online and face-to-face Learning
- A mix of Synchronous and Asynchronous Learning

3 B. How would you describe your current knowledge level about blended learning in general?

- Beginner
- Intermediate
- Advanced

3 C. List three benefits of blended learning.

3 D. What are the key components of a blended learning environment?

3 E. Do you consider the available digital resources sufficient to implement blended learning?

- Yes
- No

3 F. What challenges or concerns do you foresee in implementing a blended learning approach in your educational context?

3 G. Do you think Blending with Tabshoura will reduce the impact of these challenges?

- Yes, I believe that blended learning with Tabshoura will address the challenges we are facing
- No, I don't believe that blended learning with Tabshoura will address the challenges we are facing
- I don't know, I have never used Tabshoura

3 H. Have you ever designed a lesson plan?

- Yes
- No

3 I. How confident are you in your ability to align a lesson plan with a blended learning model?

- Very confident
- Somewhat confident
- Not confident

Section 3: Technology Skills

4 A. On a scale of 1 to 5 (1 being low, 5 being high), rate your current proficiency with:

- Using tech tools
- Using tech in education
- Using learning management systems such as Moodle

IT Evaluation

IT Tabshoura Training Pre-Post Test (Questionnaire)

Please specify your school:

- Kfarmatta public school
- Jbeil second public school
- Salma Sayegh public school
- Achrafieh first public school
- Mazraat Yachouh public school

Do you teach?

- Yes
- No

Please select your age range:

- 18-24 years
- 25-34 years
- 35-44 years
- 45-54 years
- 55-64 years

Please specify your gender

- Female
- Male

Section 1: Familiarity with Tabshoura platform and application:

Q2. Are you familiar with Tabshoura? Please select the statement that best applies to you.

- Yes I am familiar with Tabshoura and have previously used it
- Yes I am familiar with Tabshoura but I have never used it
- No I am not familiar with Tabshoura

Section 2: Tabshoura application usage and it's features:

Q3. Which of the following statements are true regarding the Tabshoura application and website

- The Tabshoura application is pink
- The Tabshoura website is pink
- The Tabshoura application is blue
- The Tabshoura website is blue

Q4. Which of the following statements are true regarding creating an account on Tabshoura using email

- To create an account on Tabshoura using my email, I have to pick a username that doesn't include any caps or spaces.
- To create an account on Tasbshoura using my email, I have to pick a username with caps and spaces.
- To create an account on Tasbshoura using my email, I have to fill in all the fields with a small red star.
- To create an account on Tasbshoura using my email, I can choose not to fill in all the fields with a small red star.
- To create an account on Tabshoura using my email, I have to agree to the site policy.
- To create an account on Tabshoura using my email, I don't have to agree to the site policy, I can continue without agreeing.

Q5. Which of the following statements are true regarding downloadable content on Tabshoura

- Courses with a blue icon next to it are downloadable.
- Courses with a black icon next to it are downloadable.
- Courses with a blue icon next to it are not downloadable.
- Courses with a black icon next to it are not downloadable.

Q6. Which of the following statements are true regarding downloading and deleting offline content on Tabshoura

- To download a course or an activity on Tabshoura I first have to enroll in the course.
- I can directly download a course or an activity on Tabshoura without priorly enrolling.
- To download a course or an activity on Tabshoura I have to click on the cloud icon.
- To download a course or an activity on Tabshoura I have to click on the bin icon.
- To delete a course or an activity on Tabshoura I have to click on the cloud icon.
- To delete a course or an activity on Tabshoura I have to click on the bin icon.

Q7. Which of the following statements are true regarding deleting user content on Tabshoura

- To delete one or several users' content on Tabshoura I have to click on the profile icon, then "app settings" and "space usage", there I will find a list of users, by clicking on their names I can delete their content.
- To delete one or several users' content on Tabshoura I have to click on the timer icon, then course categories and manually select the courses in which the user is enrolled to delete their content.

Q8. Which of the following statements are true regarding adding and switching accounts on Tabshoura

- To add a new Tabshoura account on the same device I have to click on the profile icon, then click "Switch account" then I have to click on the "+" sign and repeat the account creation via email process. After that I can switch accounts simply by clicking on the profile icon and then switch accounts.
- To add a new Tabshoura account I need to download the app on another device.
- It is not possible to create a new Tabshoura account on the Tabshoura mobile app.

Annex B: Implementation Assessment

Students Pre-Post test KG to Grade 4

Student information:
Students ID
Student's age range
Student's gender
Student's nationality
Student's grade level
What subject is the student participating in for this new learning approach?

Section 1: Student Skills & Knowledge (Scale 1 to 5):

The student is motivated when in class
The student is actively engaged in learning activities
The student is effectively participating in group work
The student is using technology in his/her learning process
The student feels confident in using technology in his/her learning process
The student sometimes learns at his/her own pace and own time
The student fully understands the concepts he/she learn in class

Response options:
1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

Section 2: Student Satisfaction (Scale 1 to 5):
Rate the student's overall experience with the new learning approach

Response Options
1. Very satisfied
2. Satisfied
3. Neutral
4. Dissatisfied
5. Very dissatisfied

Students Pre-Post test Grades 4 to 9

Student information:

1 A- Please select your age range:

- 9-10 years
- 10-11 years
- 11-12 years
- 12-13 years
- 13-14 years
- 14-15 years
- 14-16 years
- 16-18 years

1 B- Please Select your grade level:

- Grade 4
- Grade 5
- Grade 6
- Grade 7
- Grade 8
- Grade 9

1 C- Please specify your gender:

- Male
- Female

1 D- Please specify nationality:

- Lebanese
- Syrian
- Palestinian
- Other

1 E-Please specify your school:

- Achrafieh First Public School
- Borj Hammoud Al Ahliya School
- Dr. Aman Kabbara Secondary Public School
- Freres Dekweneh
- Jbeil Second Public School
- Kfarmatta Public School
- Mazraat Yachouh Public School
- New Educational School
- Rafic Hariri Public School Aramoun
- Sad Al Bouchriyeh Public School for Boys
- Salma Sayegh Public School
- Tarik Al Jadide Public School

1 F- I am participating in the new way to learning in this particular subject

- Mathematics
- Science

- Arabic
- English
- French
- Biology
- Physics
- Chemistry

Section 1: Student Skills & Knowledge (Scale 1 to 5):
2 - On a scale from 1 to 5, how much do you agree with the below statements?

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

- Motivation (When I am in class I am motivated)
- Participation (I actively engage in learning activities)
- Collaborative work (I effectively participate in group work)
- Digital Skills (I am using technology in my learning process)
- I feel confident in using technology in my learning process
- Agency/Autonomy (I sometimes learn at my own pace and own time)
- For all subjects (I fully understand the concepts I learn in class)

Section 2: Student Satisfaction (Scale 1 to 5):
3- Rate your overall experience with the new learning approach (1 star being the worst experience and 5 stars being the best experience)

Response options:

1. Worst Experience
2. Poor Experience
3. Average Experience
4. Good Experience
5. Best Experience