



QUEEN RANIA TEACHER ACADEMY
أكاديمية الملكة رانيا لتدريب المعلمين

Measure 1

4.1 Students' Attainment and Progression (2023-2024)

15

Years of Excellence
عاشا من التميز



Description

To enable monitoring of the effectiveness of TEPD completers in their classroom practices, we collected and analysed data related to their students' attainment and progression. This included pre- and post-assessment data in particular activities in six subject areas: Early Grades, English, maths, science, Arabic, and general subjects. We reached out to graduates in public and private schools and collected data from different grades to ensure a broad overview of students' results. We collected data from 527 students, with the following break up for subjects: English including Early Grades English – 36, EG Math – 55, Math – 97, EG Arabic – 53, Arabic - 32, EG science – 40, science – 107, general – 107. The obtained data incorporated students from different age groups and grades to give a wider context of the effectiveness of teaching and learning by TEPD completers. All data illustrates progression of learning within one lesson. We eliminated cases where a student was absent at one or both data collection points. Data were collected between mid-February and until end of March 2025:

Segregation by subjects

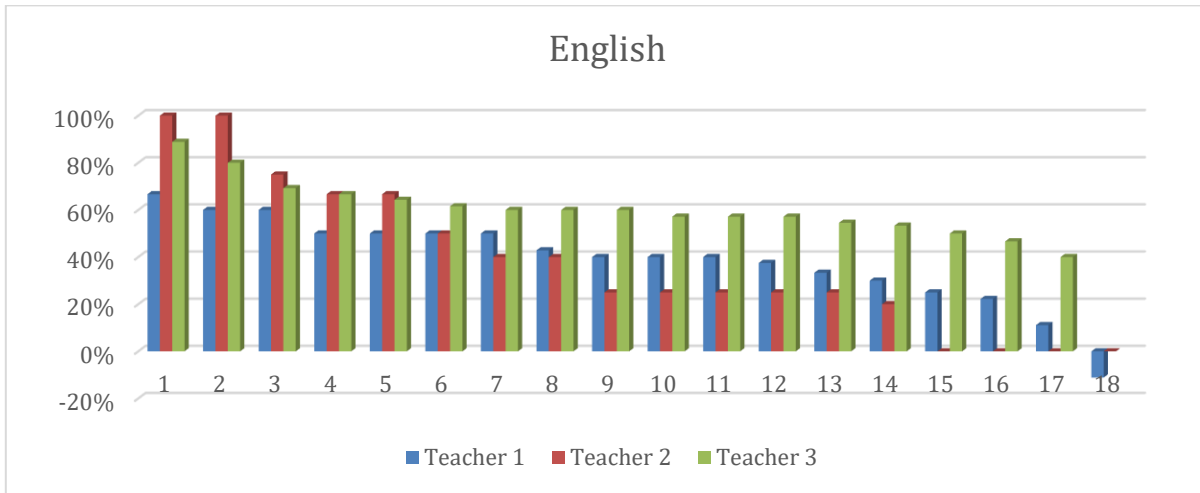
	English (includes EG English) N=36	EG Math N=55	Math N=97	EG Arabic N=53	Arabic N=32	EG Science N=40	Science N=107	General N=107
Percentage of progression within a subject	39% Teacher 1	45% Teacher 1	52% Teacher 1	43% Teacher 1	71% Teacher 1	43% Teacher 1	9% Teacher 1	30% Teacher 1
	38% Teacher 2	58% Teacher 2	79% Teacher 2	40% Teacher 2	84% Teacher 2	32% Teacher 2	51% Teacher 2	25% Teacher 2
			70% Teacher 3	34% Teacher 3			29% Teacher 3	33% Teacher 3
							9% Teacher 4	29% Teacher 4
							59% Teacher 5	

Progression in subjects

To enable the analysis of progression during one lesson, students' knowledge was measured through the same test at the beginning (point A) and at the end (point B) of the lesson. To show progression, we calculated the difference between point B and point A. We presented these data as percentage of growth from point A to point B, because the tests had different scales and using percentages enabled us to make comparisons between teachers.

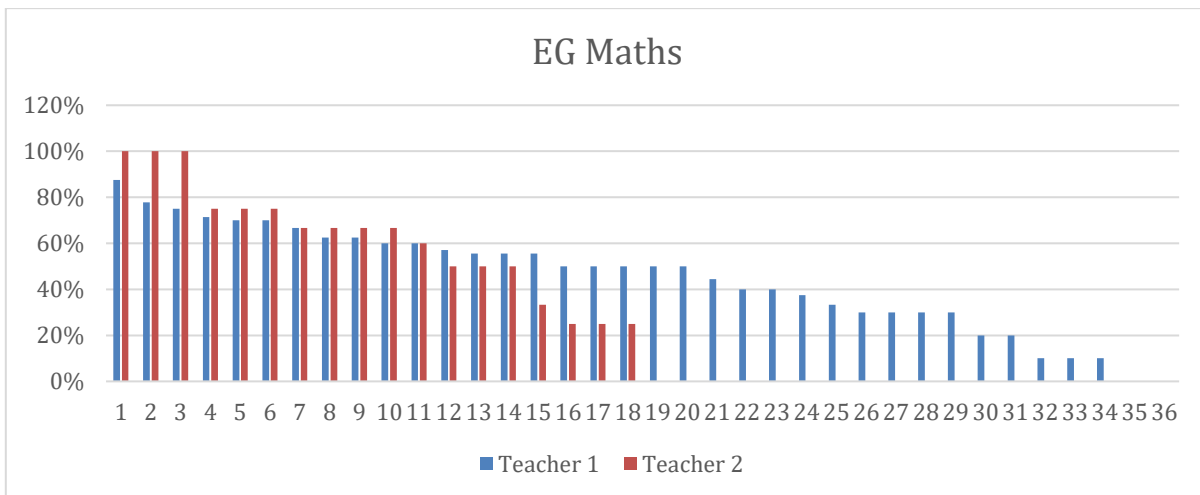
In the graphs below, each bar represents one student's progression and each color represents students from

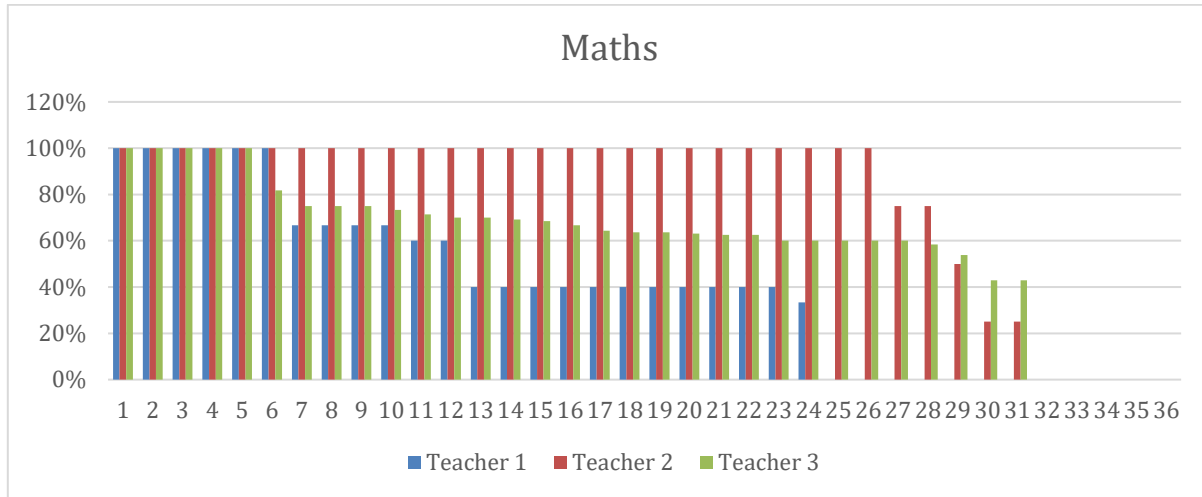
one teacher. Data is arranged according to students pre- scores with the highest pre- scores on the left and the lowest pre-scores on the right.



Reflections from English teachers

After explaining the lesson and implementing the *Think-Pair-Share* strategy, students were given cards with words containing the target letter. They first reflected on the words individually, then paired up to discuss the words and their pronunciation. Finally, they shared their findings with the whole class, organizing the words into a mind map. This strategy allowed students to apply their knowledge of the letter sound in a practical way, enhancing their communication skills. The impact of this approach was evident in the post-assessment results, which showed a significant improvement in students' mastery of the skill.





Reflections from Mathematics teachers

After applying the teaching strategies, such as learning through play, cooperative learning, learning through sensory experiences, peer learning, listening to songs, employing participatory learning, and asking diverse questions, a significant improvement in students' results was noticed, reflecting a deeper and more accurate understanding of the concept of a fraction of a set. Learning through play helped simplify complex concepts and made learning enjoyable and engaging for the students. Cooperative learning fostered collaboration and participation among students, which helped them exchange ideas and clarify concepts to one another. Learning through sensory experiences made abstract concepts more tangible and easier to understand. Peer learning allowed students to learn from each other, enhancing their deep understanding of the mathematical concept of a fraction of a set. Listening to songs played a role in linking concepts to melodies and tunes, making them more memorable. All these strategies proved to be effective in enhancing the deep understanding of mathematical and procedural concepts and expanding students' ability to apply them in similar real-life situations.

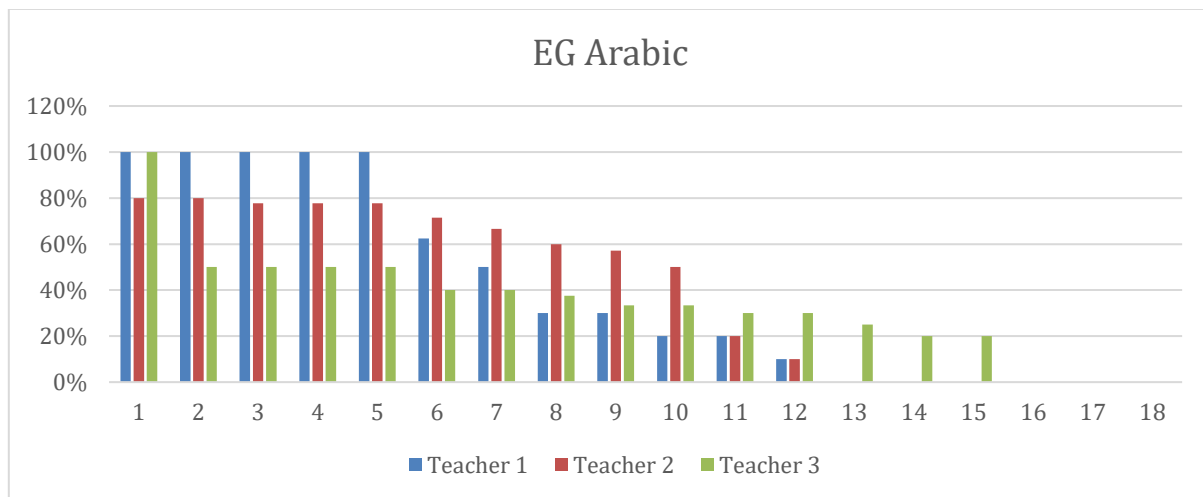
My primary goal was for students to feel comfortable dealing with division as a new concept and to begin forming a basic understanding through experimentation and exploration, rather than relying solely on rote memorization of rules. After completing the lesson and conducting the post-assessment, I noticed a significant improvement in students' understanding of division as repeated subtraction. Although this was their first exposure to division, the use of tangible materials and interactive activities helped them grasp the concept faster than I had anticipated. Most students were able to understand that division means distributing items into equal groups through repeated subtraction, and they began applying this correctly in exercises. This demonstrated that the hands-on approach and inquiry-based learning were effective in helping them internalize the concept. The progress was encouraging, and the students appeared more confident as a result of their active engagement in the lesson.

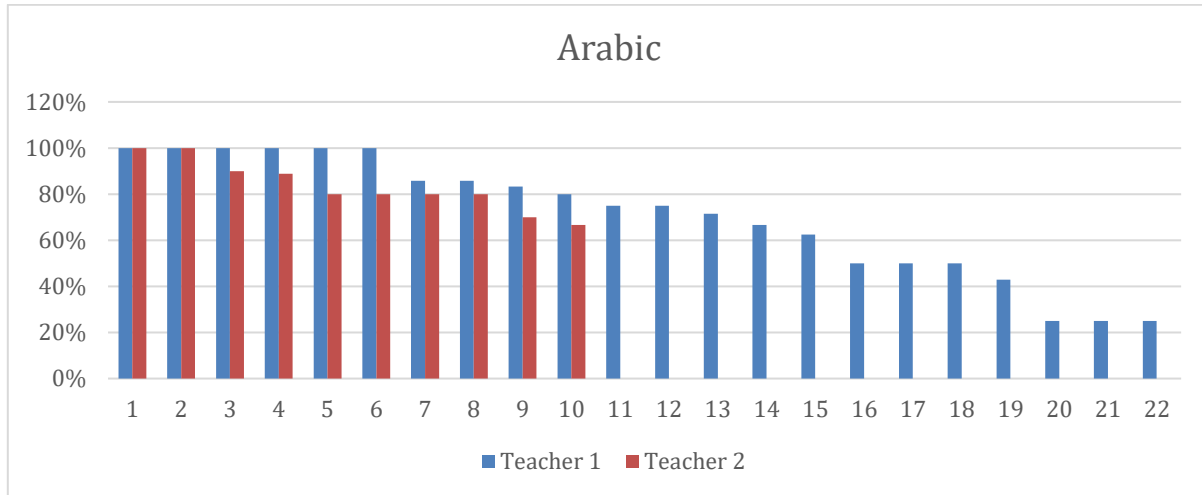
I explained the lesson using active learning, where I brought a set of tools to help the students find an equivalent ratio through multiplication or division. Since the lesson was not new to them, I conducted a pre-

test to assess their recall of previous information. I used items like a box of triangle-shaped cheese, coins of half a dinar, quarter dinar, and ten qirsh denominations. Then, I discussed a set of examples and questions, and I found that the students were able to link concepts and everyday tools with the problems. I then conducted a post-test, and the results showed improvement.

I believe that the results are satisfactory compared to the previous results, although during the lesson, I expected the outcomes to be higher, as the students were highly engaged, even the weaker ones. I think the way the worksheets were presented had an impact on this, as they were eager to find the correct answer precisely in order to complete the success ladder in the first worksheet and reach the password in the second worksheet. Additionally, the distribution of sections among each member of the group and the use of peer assessment and self-assessment, along with the reinforcement during the activity, had an effect, as no student left the class without accomplishing something from the lesson. However, this outcome requires more practice and solving more problems, which will be addressed in the next lesson following this one.

The test results were poor, as all the students who scored any mark answered only a portion of each section, and no student answered any section completely. Some of them applied the laws of exponents, but they did not meet the conditions for writing in the simplest form. Most students solved the activity, indicating that most of them have knowledge of the exponent rules. However, there seems to be an issue with fully understanding or accurately applying these rules during the test. Reviewing the concepts and providing additional examples for the students could help them understand how to apply the rules in different contexts, enabling them to answer the questions fully and correctly.





Reflections from Arabic teachers (EG and older year groups)

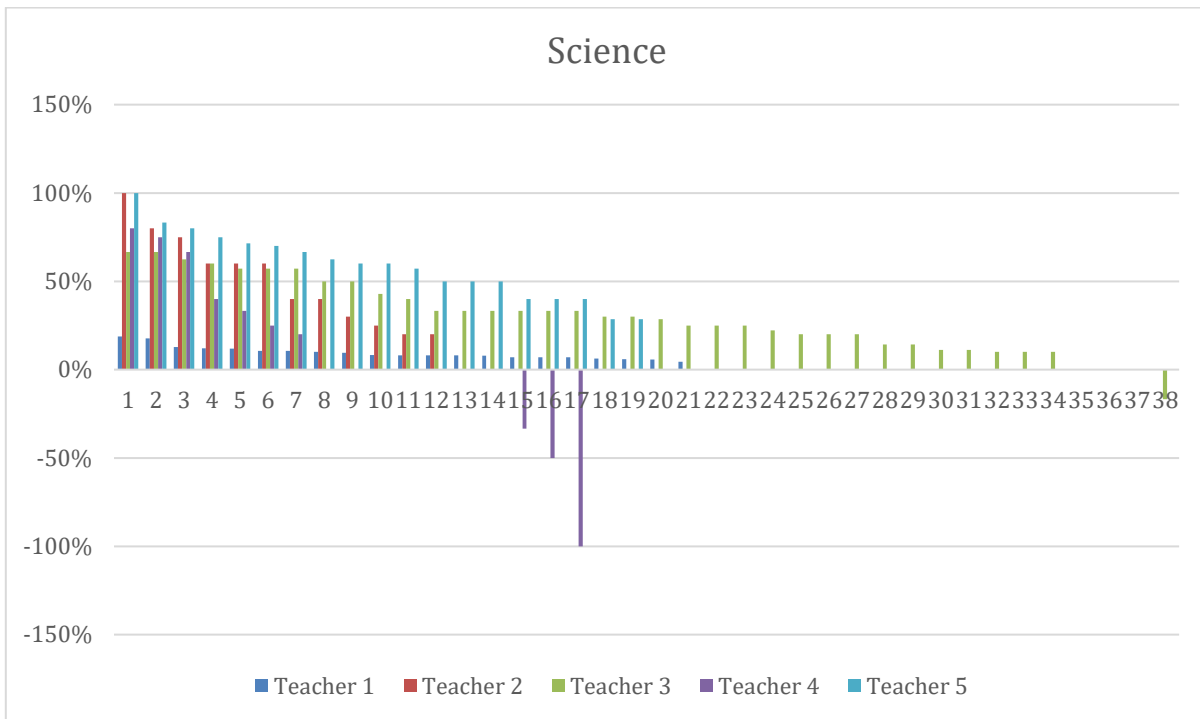
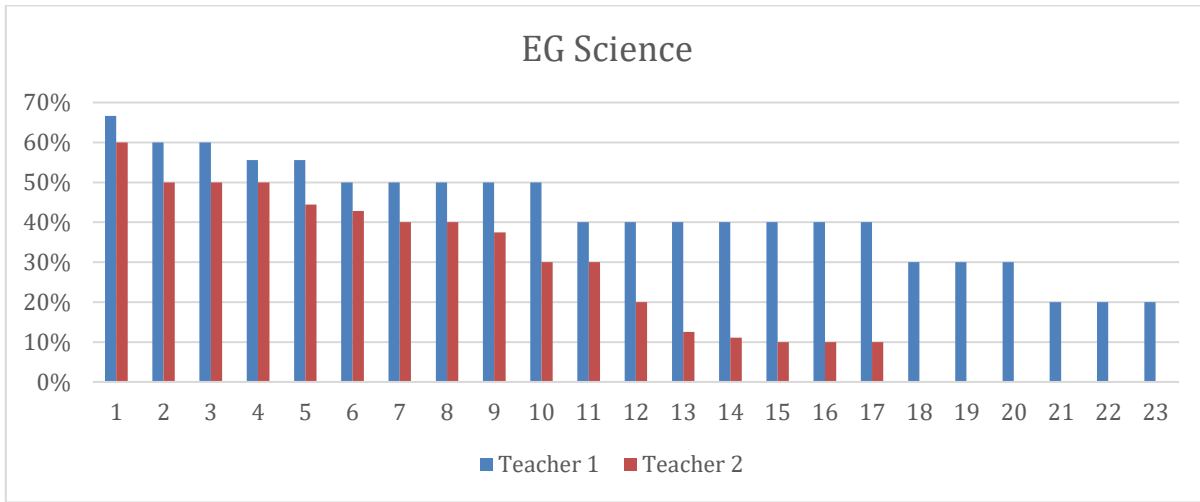
*I have become more proficient in effective lesson planning that considers students' individual differences, ensuring meaningful learning based on acquiring precise skills and knowledge that benefit them. With careful planning, I selected an appropriate strategy for teaching the new letter—*Read-Touch-Write*—which I was able to determine after conducting the pre-assessment. This assessment provided me with a clear vision of how to introduce the new letter using suitable methods and strategies that cater to all students' needs. After explaining the lesson and implementing the strategy, the students demonstrated a clear understanding of the task. Engaging them in multiple active learning activities led to a noticeable improvement in their results after the assessment.*

*The lesson was delivered using multiple learning styles and the *Concrete-to-Abstract* strategy. One of the approaches involved analysing words using cubes, which students found highly engaging, as reflected in their enthusiasm and interaction. After working with tangible objects, students moved on to identifying words in a text, demonstrating excellent performance.*

Thanks to the pre-test, I observed that there was variation in their prior knowledge of the passive verb. The lesson served to correct misconceptions and reinforce accurate information. Effective lesson planning played a key role in achieving these relatively satisfactory results. Choosing the inductive (deductive) method to teach the skill proved to be a wise decision, as it guided students' engagement toward positive learning and activated their role in the lesson. The students became explorers and researchers of the rule, while the teacher served as a facilitator and assessor of their varied responses. This approach deepened their understanding of the rule, reinforced their learning, fostered critical thinking skills, and enhanced their independence. It also served as a form of self-assessment, allowing students to recognize their progress and improvement.

The lesson was delivered through a structured sequence of explanations and a variety of teaching strategies,

which positively impacted students' learning and understanding of the material. This approach simplified the information, leading to improved student performance and their ability to answer correctly.



Reflections from science teachers:

Before starting the strategy, a worksheet was distributed to students, and the results showed that they had limited knowledge about the presented concepts and were hesitant to answer. After using the Five-Step



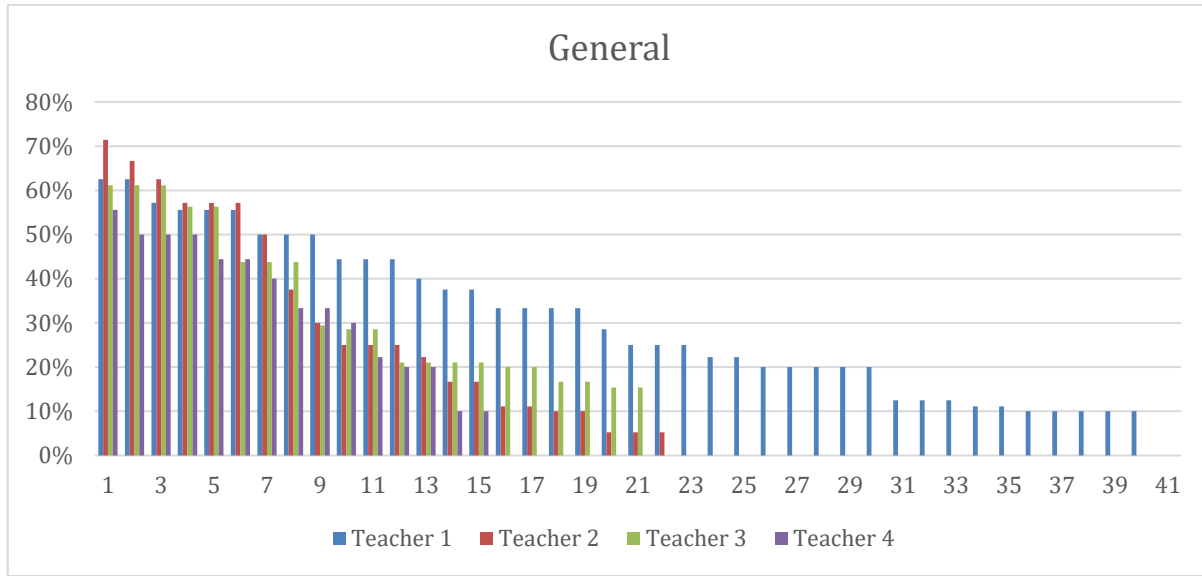
Learning Strategy and conducting many classroom experiments, the students themselves discovered the concepts. As a result, the concepts became clear through hands-on activities and active learning, which helped students grasp the concepts more easily and clearly. I noticed that using this strategy made students more enthusiastic and engaged in the lesson. Their faces showed happiness after discovering the results on their own, and they became more confident in their answers. This strategy was appropriate for the age group I teach, adding vitality to the lesson, preventing boredom, and breaking the routine. I also noticed that completing the worksheet became easier and faster. One student even said, "This time I answered the questions quickly; they were easy, unlike the first worksheet before using the strategy." From the results, it is clear that using the strategy helped students master the skills, clarify concepts, and achieve learning outcomes. The variety of activities and careful planning all contributed to benefiting the students, who are the central focus of the educational process.

Students were encouraged to visualize and create their own models of density, such as cotton boxes, wooden pink towers, water balloons, and grain cup models, among other creative ideas. This strategy allowed the students to design their own learning models as they understood them, improving thinking and communication among the students to explain the concept. The lesson was very enjoyable for the students, as evidenced by their high level of engagement and creativity throughout the lesson. The impact of this strategy was evident in the post-test results, where a clear improvement in the students' mastery of the concept was observed. Upon reflecting on the results, it is evident that some students still struggled to grasp the concept of density initially, indicating the need for further intervention and instructional strategies to improve understanding.

After analyzing the lesson and evaluating the alignment between assessment and effective planning, I found a clear improvement in students' results between the pre- and post-assessments. This reinforced my belief in the positive impact and effectiveness of using educational videos in teaching science. Their effectiveness was evident in enhancing students' understanding of various scientific topics, increasing their motivation, fostering creativity, and presenting educational content in a way that aligns with learners' characteristics and interests, ensuring differentiation among them.

While some learners demonstrated a surprising degree of pre-existing knowledge and could articulate key concepts, many others held a more superficial grasp, relying on random bits of information. The practical application of concepts, coupled with independent research, fostered a deeper and more comprehensive grasp of the material. This shift in comprehension was evident in their ability to articulate complex relationships and provide relevant examples, showcasing a clear departure from their initial, more fragmented knowledge. The tangible engagement provided by the chosen methods proved instrumental in solidifying their learning and achieving demonstrably positive results.

The result of the test reflects the cumulative learning from previous years and the prior experiences of the students. This highlights that the students' knowledge and skills have been built over time, influenced by the teaching they have received and their own individual learning experiences. Therefore, the performance on the test can give insight into the depth of their understanding and how well the foundational concepts have been grasped.



Reflections from teachers of other subjects:

My students now have a broader perspective, valuable, and scientific information regarding the concept of recycling, the waste hierarchy, especially after it was presented through active learning strategies and activity-based learning. Additionally, learning through models and engaging in real-life activities has increased the students' clarity and differentiation between concepts, while reinforcing the importance of recycling for the environment.

Through the implementation of the modelling strategy, the high-achieving students were able to master the recitation of the Quranic verses, while the average students demonstrated a noticeable improvement in their recitation skills. Furthermore, the performance of the weaker students also improved. The application of the cooperative learning strategy enhanced collaboration among the students, leading to the sharing of information across the entire class. This approach positively influenced the students' scores.

When conducting the pre-test for the running skill, whether written or practical, the primary goal is to assess the current level of students in relation to the physical and cognitive skills associated with running. After training in the running skill, the results indicated that the students have gained a more accurate understanding of running.

This teacher then went on to consider the lesson and its components in great detail and reflected on all related areas of skills and understanding:

Through the answers to pre-test, the extent of the students' understanding of basic concepts related to

running, such as correct running techniques (body posture, arm movement, breathing, etc.), was determined. The answers were sometimes inaccurate and vague, indicating the need for students to enhance their theoretical knowledge of this skill. After the lesson, students were able to connect theoretical information, such as the health benefits of running (e.g., improving cardiovascular health or endurance), with practical applications. This shows the integration between theory and application.

Based on the results of the practical pre-test, the areas to focus on in the following sessions were identified:

- *Improvement in speed: After training, the time taken to cover a certain distance in the post-test can be compared to the pre-test. If an improvement in speed is observed, it indicates better physical capacity and cardiovascular endurance. Even though there was improvement after the lesson, the techniques were incorrect, or there was a lack of coordination in movement. As it takes a period of time to fully develop these skills the focus should be on exercises that improve proper movement, such as stretching and flexibility exercises. Speed was the weak point. Work should be done on improving speed techniques through fast-start drills.*
- *Improvement in endurance: The endurance was weak, so interval running exercises should be intensified, and adaptation to running longer distances should be improved.*
- *Improvement in coordination: If students showed improvement in coordinating arm and leg movements, and better body posture (such as running in an upright position or reducing forward lean), this is evidence that the techniques have been properly trained.*

Analysis:

- All data presented in the graphs was arranged with the lowest pre-test scores on the left and the highest pre- scores on the right. In most subjects, the greatest progression was observed in students who initially had the lowest scores. In some cases, students who initially had high scores in a particular task did not record any progression.
- Levels of progression varied greatly between subjects and between different grades (9 – 84%). This variance is related to the fact that a range of activities were measured by teachers, in which students might have progressed at a different rate. This can also be explained by teachers using different scales to measure students' progress.
- Progression in English, Arabic, and general subjects was most consistent, which may be related to the fact that most of these lessons were measured against similar criteria and scored similarly.
- The biggest variance was observed in science, which was the only subject in which occasionally students' results were lower after the lesson than before (apart from one student in English). This may be related to the complexity of covered content and the difficulty of assessing it.
- The distribution of progression in most subjects followed a common pattern with a good proportion of students achieving progression above 75%, most students achieving between 30 and 74% progression and around a third (or less) progressing by less than 30%.
- This was different in science (older grades) with progression at a subject level of 9% in two sets of results. In one of these, the score distribution is evenly spread amongst all group suggesting that the measuring test was capped but all students still achieved expected progression. Amongst the other group, some students progressed by a lot, but others did not progress at all. This was also true in another science group with some students scoring in post-test lower than in pre-test.
- All teachers reflected on the teaching and learning in their lessons and made numerous observations related to the effectiveness of the process, including challenges they faced and reasons for which learning might have been less successful previously.

- All teachers used their knowledge of pre-test scores to prepare or adjust the lesson and to use teaching strategies they considered most appropriate for their context.
- A big range of strategies was used across subjects, with a predominance of methods engaging students and making them instrumental to their own learning which were largely effective.
- In addition to the effectiveness of learning in subjects, many of teachers' reflections considered also how used strategies enhanced students' confidence, excitement about the subject, and ability to reflect on their own and others' learning

Interpretation:

Collecting data in this manner gave teachers a measurable insight to students' knowledge prior to the lesson and allowed them to plan for the lessons accordingly. Some commented on the fact that their students found this approach unsettling as their pre-test scores were low. This also provided an opportunity to reflect on the effectiveness of teaching and learning within one lesson and the importance of clarity of learning objectives and ways of implementing assessment to support short term progression. A consistent level of progression across the whole group of students was only observed in few cases, however this is likely linked with the specifics of different scales used in tests and different subjects, for example learning a specific content in an Arabic lesson might demonstrate progression more easily than accomplishing more complex understanding of scientific concepts.

The pre- and post- results show that for students with higher scores in pre-tests, lesser progression was observed in many cases and this observation was also true in last year's results and subsequent report. It is not unusual for the teachers to focus their efforts on students who started from the lower baseline, and for most of these students, the range of teaching strategies used across all subjects meant that they progressed very well in the measured tasks.

TEPD completers used a wide range of teaching strategies to cater for the initial results and continued to reflect on these throughout the teaching process, at times changing their approaches as the lesson progressed to most effectively support teaching and learning. These strategies increased student engagement, boosted their confidence, and developed soft skills and capacity to reflect. Teachers' reflections were very open minded and allowed them to honestly scrutinize their practices to continue developing them.

Many teachers provided very thoughtful and precise comments on teaching techniques they used and their impact on students' learning and confidence. These comments for the first time contained such a high proportion of professional terminology showing a clear relationship between learning these concepts and strategies theoretically and implementing them in practice and using this knowledge to make appropriate choices in planning lessons. This is a tremendous achievement of all teacher staff at TEPD.

Action:

- As a few teachers told us, some pupils found being tested prior to the lesson challenging and reported that it lowered their confidence. This could be addressed by giving them a clear understanding of the purpose of this kind of testing and making them aware that all assessments are not only a mark of pupils' achievement but also play a role informing teachers about student's current level of

knowledge and skills to feed into planning their teaching and making it more effective. Giving pupils an explanation of the process of assessment for learning might support the process and engage pupils in co-creating it.

- Alongside focusing on lower achievers, teachers should also ensure that they cater for the more able students and support their progression. It may be that these students did, indeed achieve further progression but the test did not allow them to present this. It is also important to assure appropriate provision for students who started with higher results, and to allow an opportunity to measure their performance beyond the required test. This is not unusual in many education systems and ensuring provision for high achievers can be challenging, especially with big numbers of students in the classroom. Exploring this during TEPD in specific subject areas will further develop alumnae capacity to implement this in their classrooms.
- Very precise and technical language used by teachers to describe how they facilitated teaching and learning processes show a very good connection between learning about teaching strategies in theory and making informed choices to apply them in practice. This evidences that the links between theory and practice are well embedded in the curriculum and continuation of the same approach will give new TEPD students similar confidence in implementing what they learnt in their practices, leading to effective and enjoyable teaching and learning.