مدرسة قطر للعلوم و التكنولوجيا الثانوية للبنين
Qatar Science & Technology Secondary School for Boys

2020/2021

QSTSS Teaching & Learning Policy

Version 2: February 2020

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1. QSTSS Purposes:

To provide learning outcomes that possess 21st century skills to build a knowledge-based national economy

To deliver a high-quality educational level in science, technology, engineering and mathematics

To prepare students to join the most prestigious universities that qualify them to become distinguished scientists, researchers and inventors.

To reinforce Islamic values as well as the national and ethical values among students

2. QSTSS Vision & Mission Statements

VISION

To empower students to develop the 21st century skills and prepare them to contribute effectively to building a national economy that relies on knowledge along with scientific and technological advancements.

MISSION

To provide innovative, engaging and challenging learning experiences in science, technology, engineering and mathematics in an interdisciplinary way that enables students to develop their skills in research, design, critical thinking and problem solving, and contributes to building their creativity and competitive capabilities globally.

3. QSTSS Values

Innovation

We use new working, teaching and learning methods to provide exceptional learning experience to our students

Excellence

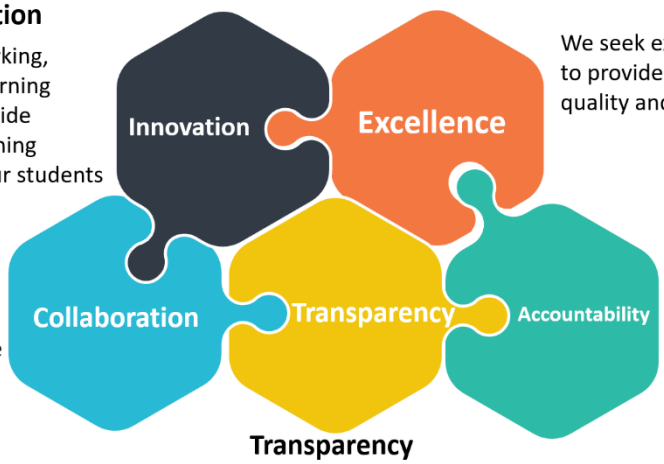
We seek excellence in all areas and to provide the highest standards of quality and perfection

Collaboration

We work as one team, sharing information to accomplish tasks while respecting different opinions and ideas

Accountability

We acknowledge our responsibility to perform our duties honestly and sincerely



Transparency

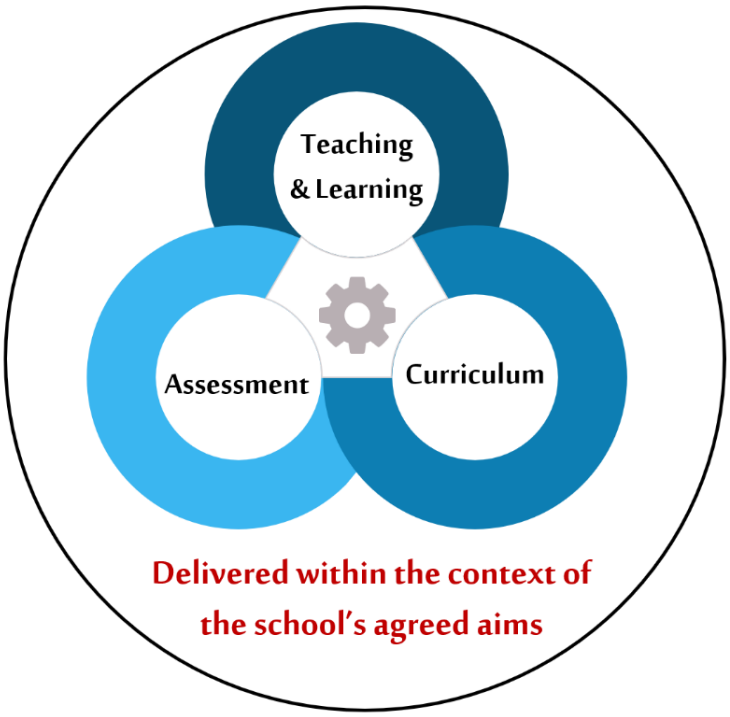
We are transparent in all procedures as we maintain the highest standards of integrity

4. Introduction

At Qatar Science and Technology School for Boys (QSTSS), we are committed to providing a learning experience that promotes the concept of lifelong learning and the idea that education can be an interesting and rewarding experience for everyone.
We believe that effective STEM-oriented education needs to focus on the application of knowledge and skills to addressing authentic real-life issues, concerns, and problems. Therefore, our teaching approach is designed to achieve this objective.

We seek to integrate science, technology, engineering and mathematics in such a way that students see the interconnectedness and interdependence between these disciplines. Our teaching and learning approach is aimed at helping students to understand that finding solutions to real world problems involves the combined use of knowledge, processes and practices from all of these disciplines. Furthermore, we believe that our approach will enable students to make informed decisions about their future and become active contributors to the country's sustainable development programs, as outlined in Qatar's Vision 2030.

The purpose of this policy is to support the implementation of high quality teaching and learning. We see teaching and learning as part of our core business in order to ensure that all students make the best progress possible and attain high standards. Effective teaching and learning is part of a whole school STEM-focused pedagogy informed by the effective implementation of:



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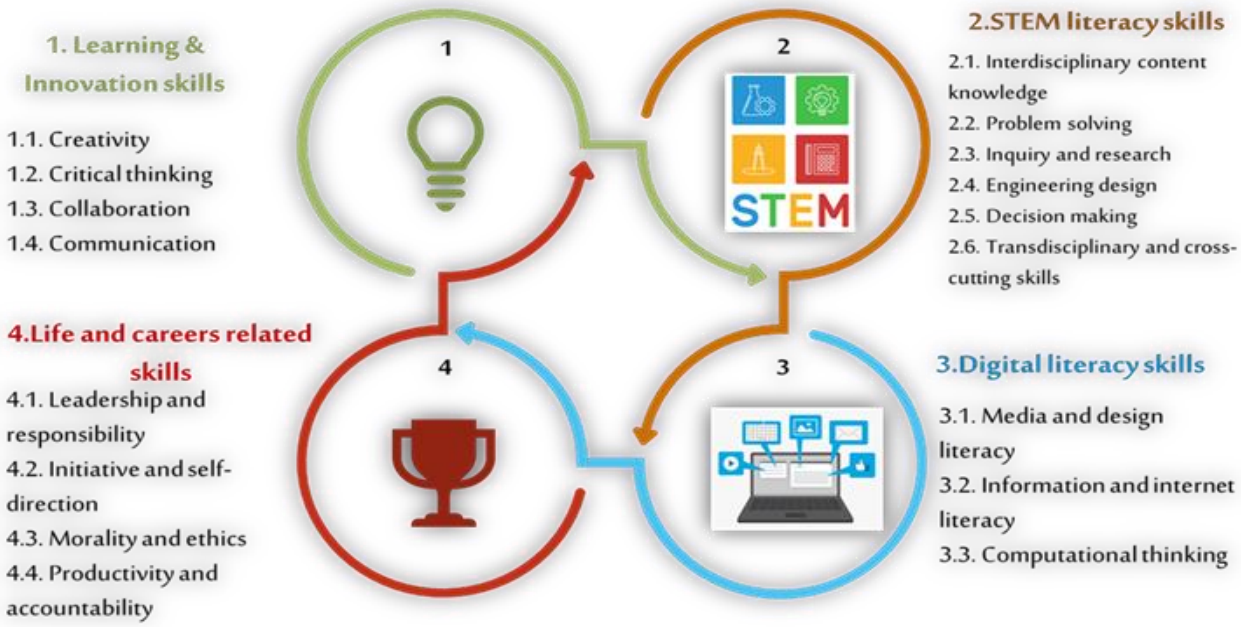
5. QSTSS Objectives

This policy aims to promote consistency and high standards in teaching and learning as we seek to achieve the general objectives of the school. We, at QSTSS, aim to provide quality, supportive and stimulating learning environment to achieve the overall objectives of the school curriculum, which is to enable students to master the skills needed in the 21st. Century by enhancing the following main and secondary educational competencies:



6. Pedagogical Principles at QSTSS

Teaching and learning practices at QSTSS are guided by the following principals:

1. Quality and Rigour:

- Aligns with and integrates the subject areas content with the QSTSS Curriculum Framework and Qatar National Curriculum Framework requirements.
- Complements the explicit teaching and assessment of inter-disciplinary content and key ideas in the subject-specific content.

2. Learner Responsibilities, Capabilities and Dispositions

- Uses learner-centred pedagogical approaches which enable self-direction, collaboration, problem solving and project management.
- Develops the general capabilities and particularly critical and creative thinking, literacy and numeracy in applied and contextualised learning settings.
- Drives innovation through creating, designing and producing solutions to real world problems.

3. Relevance and Authenticity

- Utilises authentic real-world challenges and contexts requiring the integration of inter-disciplinary approaches.
- Provides applied learning contexts which are relevant to the learner.
- Creates opportunities for personalisation.

4. Inclusive and accessible

- Provides access and challenge for all learners.
- Uses a differentiated approach to planning, teaching and assessment.
- Builds resilience and a growth mindset in all learners when facing challenges and uncertainty.

5. Learning Pathways

- Makes connections between current and future learning and career pathways.
- Links learning to local, regional, national and global contexts which are relevant to the learner.
- Builds links with community, industry (inclusive of business) and education partners.
- Develops insights into the relevance of STEM in society and the world of work.

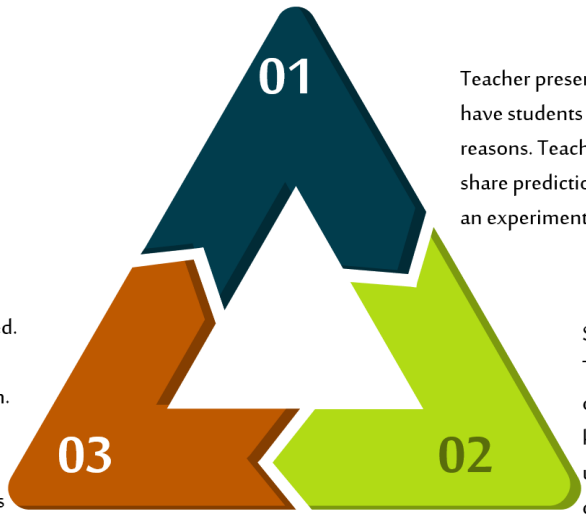
7. Instructional Models at QSTSS

At QSTSS teachers will act as leaders of inquiry attempt to navigate students through a journey of collaborative, authentic, reflective and active learning. **P.O.E** (Predict, Observe and design), **5E** (Engage, Explore, Explain, Elaborate and Evaluate) and **ADDIE** (Analysis, Design, Development, Implementation, Evaluation) are the main approaches used by QSTSS teachers because they can achieve the overarching objectives of equipping students with an inquiry mindset that show appreciation of STEM education.
The **5E Model** of Instruction is an inquiry-based model. It is student-led, with the teacher acting mainly as the facilitator. Through open-ended questions, real-life experiences, guided investigations, hands-on projects and research, students gain a deep understanding of the topics that are covered in the unit. Each stage of the model serves as a foundation to the next, creating a coherent model that frames lessons, activities, and units.

P.O.E, **5E, & ADDIE** models are just some example employed QSTSS teachers to inculcate students as an inquirers and also to instil in them the key 21st century learning competencies.

The following diagrams show the details of the instructional models teachers usually use at QSTSS.

1. P.O.E Model:



Predict (P.O.E)

Teacher presents a relatable situation in class and have students predict the outcomes and with reasons. Teacher creates opportunity for student to share predictions about the situation and to design an experiment or a solution.

Observe (P.O.E).

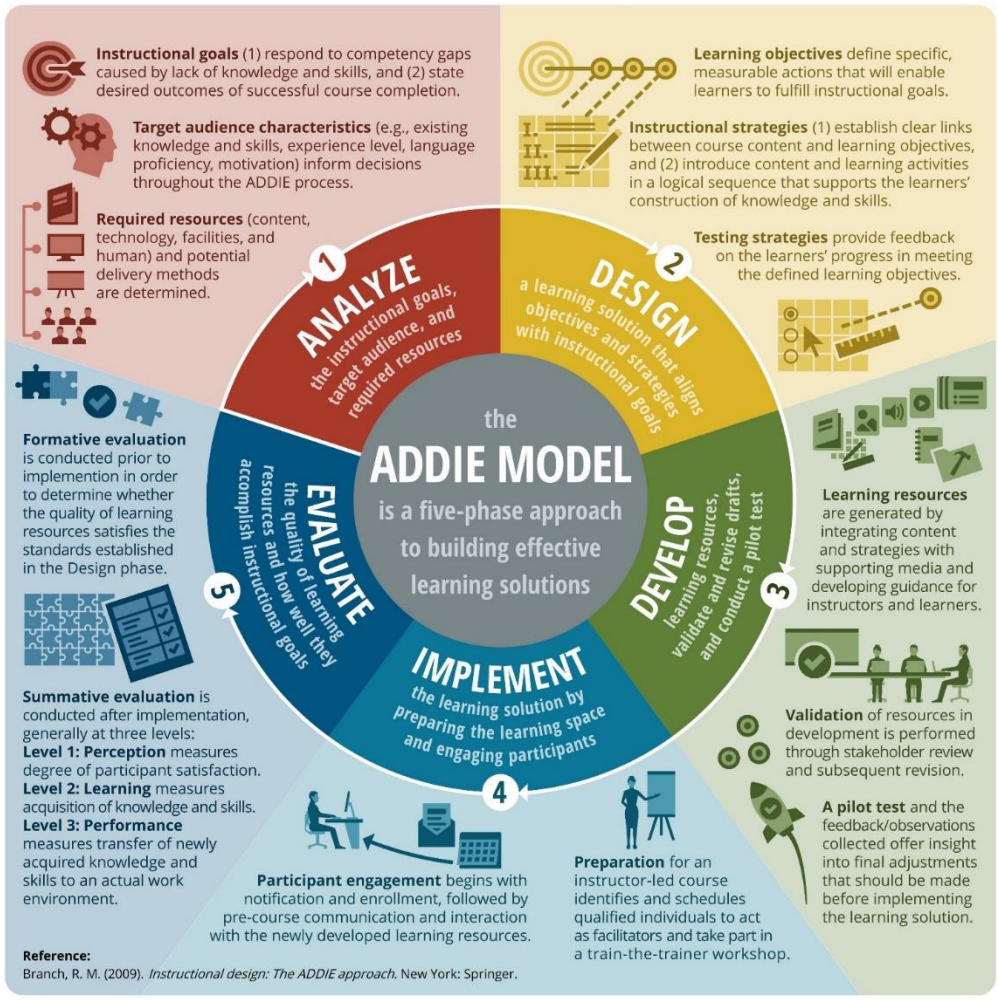
Students observe evidence introduced. Teacher guides them to focus on the observations that are relevant to develop key conceptual understanding. Teacher uses sound questioning technique to developing critical thinking skills and inquiry attitude in students and also nurture insights to new relationships exposed in the observations

Explain (P.O.E)

Students are guided to explain their observation of the evidence gathered. Students face may face discrepancy between observation and prediction. They will attempt to solve any mismatch that arises using sound scientific reasoning. Teacher's role is to challenge students' idea and help them build the confidence to be an effective inquirer of science.

2. 5E Model

3. ADDIE Model



Source: https://elearninginfographics.com/the-addie-model-infographic/

8. Teaching & Learning Model at QSTSS

QSTSS teachers use the P.O.E, 5E, and ADDIE instructional models to plan their lessons in light of the following general school-based teaching and learning model. This is a simple way of articulating what works based on a broad base of research and evidence. The model is a construct rather than a prescription of how to teach.

Climate	**QSTSS Purpose, Vision, Mission, & Values**
Curriculum	**QSTSS Framework, QNCF**
Pedagogy	**Subject Knowledge, 21st Century Skills, Expertise, Teachers' Mindset**

Climate & Classroom Relationships	Planning	Home Learning	Learning Environment & Resources
Pedagogical content knowledge & competencies ☐ Deep subject knowledge ☐ Secure understanding ☐ Learning sequence ☐ Identify & use misconceptions	**Classroom Instruction** ☐ Sharing bigger ideas ☐ Clarity of outcomes ☐ Reviewing prior knowledge ☐ Modelling ☐ Scaffolding ☐ Summarizing ☐ Practicing	**Deep Questioning** ☐ Qs that develop thinking ☐ Qs that challenge ☐ Qs that promote talk ☐ Qs that probe ☐ Qs from students	**Assessment & Feedback** ☐ Formative assessment ☐ Self & peer assessment ☐ Diagnostic assessment ☐ Students responding & showing progress ☐ Amending lessons structure ☐ Summative assessment ☐ Projects

IMPACT	**Academic Achievement**

9. The Role of Senior Managers:

At QSTSS, the senior management members believe that they have a major and active role to play in ensuring that the student learning experience has the best possible impact on educational and social outcomes. Our leadership is responsible for:

- Setting the direction of the school by establishing a clear vision and using and establishing effective procedures for tracking progress and evaluating success;
- Developing people by providing our teachers and engineers with the necessary support and training to succeed in their work;
- Making sure that the school works efficiently and effectively by ensuring the organizational structures and systems are fully in place and support the development of a transformational learning experience.

In particular, our senior managers help establish a culture of positive beliefs and high expectations, both in terms of educators and students. We agree that by establishing a school culture in which all members of the school community believe that the students will become high achievers, the belief in reaching these high expectations becomes a self-fulfilling prophecy. Positive beliefs and high expectations may be one of the most important factors in high-achieving schools.

In practical terms, our senior managers:

- Share a vision of the school that promotes positive beliefs, high expectations, and a STEM perspective;
- Support the use of appropriate teaching approaches and strategies by effectively allocating resources;
- Ensure that the school buildings, facilities and resources contribute to the success of teaching and learning;
- Ensure that the quality of teaching matches expectations as defined in policies and job descriptions;
- Establish strategies for monitoring the effectiveness;
- Monitor the implementation of the Teaching and Learning policy and evaluate its impact on student learning outcomes.

10. The Role of Parents

We believe that parents have a key role to play in helping their children learn. Therefore, we work hard to inform and support parents about strategies they can employ in order to improve their children's learning outcomes and gain confidence.

Parental involvement not only enhances academic performance, but it also has a positive influence on student attitudes and their behaviour. Research suggests that when parents are actively involved in the

education process, this enhances the student's attitude towards school, their behaviour, their self-esteem, and motivation. It also reduces levels of absenteeism.

In practical terms, QSTSS focuses on:

- Providing regular parent-teacher consultation meetings to discuss progress and identify how to encourage further improvement;
- Providing parents at the beginning of the school year with information about the education programs related to all subjects. Parents also receive information about the school's expectations regarding homework;
- Providing an initial orientation process for students and their parents, which gradually introduces them to the teaching staff, the classroom and the type of experiences students will be exposed to;
- Providing parents with important information and allowing them to meet with senior staff and subject coordinators, as well as the classroom teachers, so that they can share any concerns they might have;
- Providing parents receive regular monthly and quarterly reports that explain the student's progress and achievements in relation to expected standards. Suggestions are made in relation to how progress can be enhanced;
- Informing parents that they are responsible for ensuring that their children attend school regularly as student absenteeism impedes academic progress. They are required to inform the school of any absence on the first day (a telephone service is available) so that the school knows that the student is safe and at home.

11. Creating an Effective Learning Environment:

At QSTSS, we seek to create a STEM-rich learning environment that:

- Reflects best practice in terms of teaching science, technology, engineering and mathematics;
- Provides our students with the opportunity to build complex skills such as leadership, collaboration, critical thinking, communication, creativity and the ability to problem-solve using mathematical, scientific and engineering practices;
- Connects in-school STEM learning experiences by providing an integrated curriculum and subject content, agreed teaching and learning approaches, and cross-curricular activities and projects;
- Connects in-school STEM learning experiences with extra-curricular and out-of-school educational experiences e.g. summer camps, weekend events, national and international competitions;
- Involves parents and families in STEM-related experiences.

11.1. Active Learning

We recognize that people learn in many different ways and we acknowledge the need to develop strategies that allow all students to learn in ways that best suit their abilities and needs. Howard Gardner, the psychologist, identified eight key areas of human intelligence within the Multiple Intelligences Theory: musical-rhythmic; visual-spatial; verbal-linguistic; logical-mathematical; bodily-kinaesthetic; interpersonal; intrapersonal; naturalistic.

These translate into a set of preferred learning styles:

- **Visual** (spatial): Students prefer using pictures, images, and spatial understanding;
- **Aural** (auditory-musical): Students prefer using sound and music;
- **Verbal** (linguistic): Students prefer using words, both in speech and writing;
- **Physical** (kinaesthetic): Students prefer using their body, hands and sense of touch;
- **Logical** (mathematical): Students prefer using logic, reasoning and systems;
- **Social** (interpersonal): Students prefer to learn in groups or with other people;
- **Solitary** (intrapersonal): Students prefer to work alone and use self-study.

We take these different forms of intelligences and associated learning styles into account when planning teaching. Therefore, we offer opportunities for students to learn in different ways. Such opportunities include:

Use of electronic video-visual tools interactively	Classroom and collaborative work	Research, inquiry and experiment
Classroom and collaborative work	Questioning and desiccation	Project-based learning
Research, inquiry and experiment	Use of technology integrally and effectively	Small groups collaborative work
Use of E-Learning tools specially. Microsoft educational tools	Relevant field visit	Work in pairs
Self-assessment, feedback and reflection on the information and skills acquired	Creative activities	Independent individual work

We encourage students to take responsibility for their learning, to participate as much as possible in reflecting on the way in which they learn, to think carefully about how to learn, to determine what helps them learn and what difficulties they face during their learning. Teachers are required to use student self-assessment, peer assessment, teacher feedback and other reflection methods that help students understand and evaluate learning objectives.

11.2. Effective Teaching

When teaching, we focus on motivating students and building on their knowledge, skills and understanding of the curriculum. We use curriculum plans and curriculum frameworks to inform our practice. These set out the objectives and details of what should be taught at each level and stage during the school year.

Our teaching approach is based on best practices that have been proven effective and recommended by education scholars as being the most effective in influencing student learning outcomes, especially the recommendations of John Hattie. Thus, we believe that effective teachers are able to:

- Take into consideration previous learning experiences and students' basic information when planning and implementing lessons in an effective and integrated manner that takes into account the nature of the STEM curriculum.
- Provide lessons that build students' understanding of the subject through classroom activities, practical activities, individual, collaborative and group skills, and the ability to enquire, anticipate, research, and investigate, which would make a positive impact for the lesson on students' learning and introduce a change in the way they understand things
- Integrate IT in teaching and learning and enhance students' skills to take advantage of technological developments in promoting learning and communication.
- Provide useful and planned scientific visit programs to link student's learning with external environment and the life applications of what is being learned.
- Use Open-Ended Question that promotes critical and reflective thinking and challenges students' abilities.
- Create a stimulating learning environment to encourage self-learning responsibility.
- Foster continuous and professional preparation.
- Provide students with the opportunity to review, reflect and evaluate what they have learned.
- Give students enough time to think before judging and answering.
- Provide student-cantered innovative Pedagogy based on experimentation and enquiry.

- Introduce the lesson objectives and activities in a sequential and coherent manner.
- Provide constructive criticism as feedback on student's work with recommendations for improvements.
- Engage students in identifying learning objectives for each lesson.
- Explain the learning outcomes and expectations that students should meet at the end of each lesson
- Provide differentiated education that ensures catering for individual differences between students and meets their individual and collective learning needs.

All teachers are encouraged to reflect on their personal strengths and weaknesses, and this is used to identify their respective professional development needs. The school administration does everything it can to support teachers, develop them and empower them professionally so that they can continuously improve the quality of their pedagogical performance.

11.3. Providing a Supportive Learning Environment

All teaching staff strive to establish positive relationships with students. They treat all students fairly and provide them with equal opportunities to participate in class and extra-curricular activities.

At QSTSS, we ensure that our students have every opportunity to develop knowledge and skills and achieve to the best of their potential, irrespective of general ability or competence in English. We provide a supportive learning environment by identifying both individual and group needs and providing differentiated learning experiences where appropriate (content, process, outcome and environment). All students are treated equitably, according to their identified need and preferred learning styles. We develop our teaching approaches based on our knowledge of our students' levels of achievement.

We seek to promote student engagement by providing an enquiry-based learning environment that encourages and rewards creativity, innovation and collaborative approaches to problem-solving. Many aspects of our curriculum are introduced or reinforced by using carefully designed cross-curricular projects and inquiry-based activities.

We have high levels of expectation for all students and believe that all students should be offered a wide range of educational opportunities at the school level so that they can expand their horizons and reach their full potential.

Our objective is to support the development of self-directed learners who strive for the highest levels of success and are able to communicate effectively about the knowledge they have acquired, their learning goals, their levels of achievement and their additional support needs.

At QSTSS, we are keen to promote and reward positive student behaviour. Students are encouraged to respect themselves, their peers, their teachers, and other school-based adults. They are also taught how to respect their parents, their country and all people outside the school.

We insist on positive behaviour at all times. When a student misbehaves, we follow the guidelines outlined in the Behavioural Policy of the MOEHE.

Teaching staff praise and reward students' positive efforts, using this as a means of building positive attitudes among students towards the school and learning in general.

11.4. Assessing student progress

We believe that student assessment is an integral part of the educational process, providing data and feedback that facilitates effective continuity and progression in relation to the student learning experience. Our student assessment arrangements provide us with information about each student's progress and attainment levels, identifying what they know, understand and can do. QSTSS utilizes a range of internal and external student assessment procedures and tools as part of its formative, summative and diagnostic assessment approaches. An analysis of the data we gather allows us review all aspects of the student learning experience.

The assessment process basically aims to help the teacher support the student. It ensures the provision of a more effective education experiences by providing evidence of a close match between tasks and student needs. Evaluation, in turn, helps assess students by providing clues about what stage they have achieved in the learning process and also envisions future planning and teaching strategies. In addition, this type of evaluation helps students to achieve success and aspire to excellence.

AT QSTSS, we focus a lot on formative assessment approaches (Assessment for Learning). We believe this type of assessment:

Is a significant part of an effective learning approach.	Affects student motivation.
Focuses on how students learn.	Promotes a commitment to learning objectives and assessment criteria.

Is the key to classroom activities.	Helps the learner to know how to improve their performance.
Is a basic professional skill.	Promotes the self-evaluation process.
Has an emotional dimension that helps students to achieve self- assertion.	Helps to builds on a student's prior experiences.

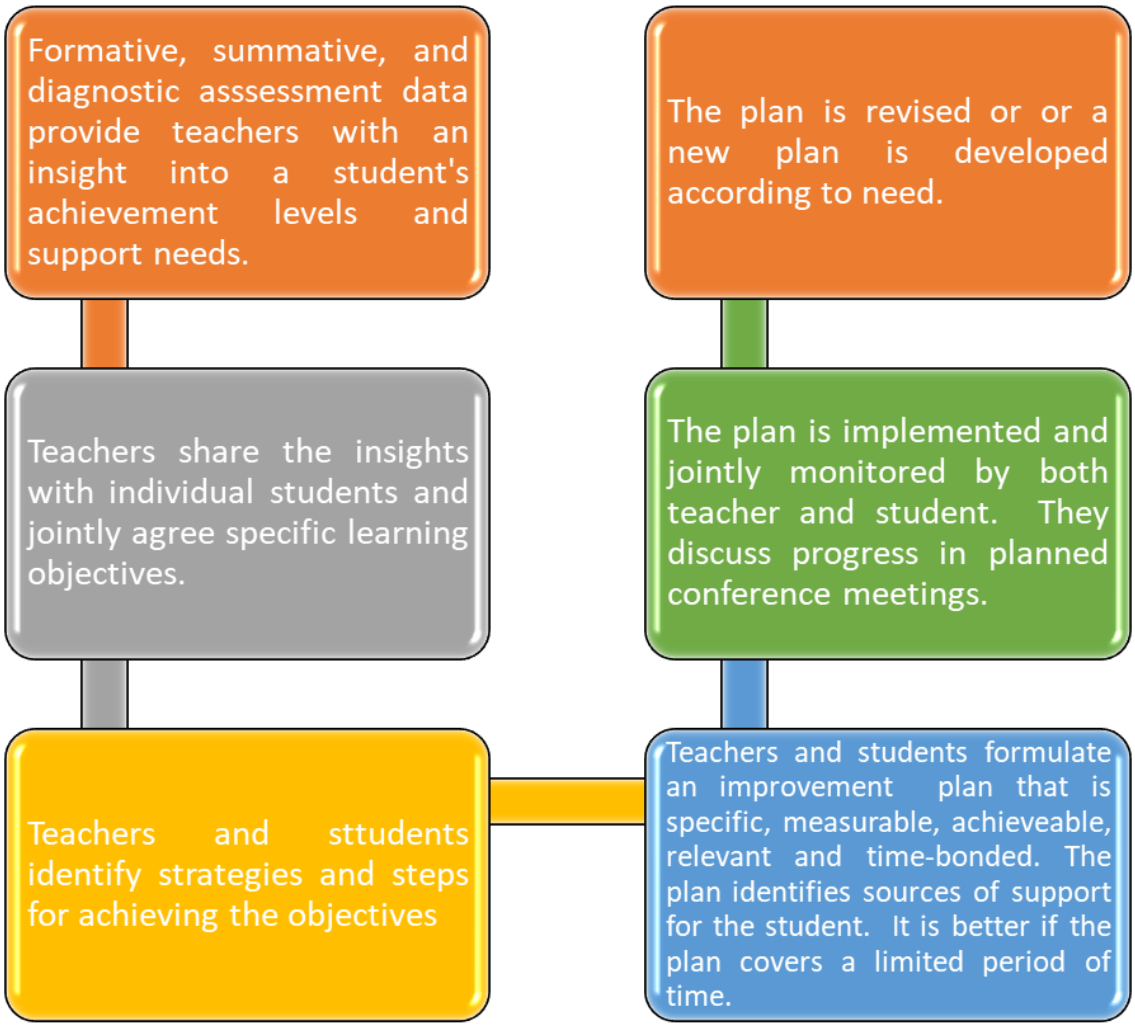
We use the following strategies to link assessment to the promotion of improved and more effective learning experiences:

Monitoring students' written work and encouraging them to organize their books and files effectively.	Employing diagnostic testing by using standardized tools to determine the level of student attainment. Measuring their academic progress on a regular basis.
Basing assessment activities on performance indicators and rubrics.	Producing reports on experiments conducted in specialized STEM laboratories.
Using periodic summative tests to evaluate students' learning and their depth of knowledge and understanding.	Using integrated projects carried out by students to demonstrate their understanding of STEM subject content and its links with other subjects.

11.5. Meeting Individual Needs

At QSTSS, we ensure that our written curriculum is aligned with the highest levels of nationally and internationally attested and recognized standards. We carefully monitor student learning outcomes against these standards and make adjustments to curriculum content and teaching approaches, as required.

Assessment data gained from teacher observation, formative assessment activities and summative assessment activities are used to guide teachers as they provide differentiated learning experiences and, where necessary, individualised and personalised support plans for some students. These may be required by students of all levels of ability at some point in their time at the school, e.g. because they are underachieving, because they are high achievers and need to be "stretched," because they have been ill and missed lessons, because they have gaps in their knowledge, or because they need to further develop certain skills. Some students may require the development of more formal Student Intervention Plans (SIPs). In practical terms, the process looks like this:



11.6. Pastoral Care and Careers Guidance

At QSTSS, we provide all students with advice and support regarding their future educational and career options. Such services are provided by form teachers, project supervisors, subject teachers and social workers. In addition, school staff liaise closely with parents in relation to these aspects of education.

We deploy administrative board members (such as LRC specialists, academic advisors, administrative supervisors, social workers, psychologists) in different ways and tasks. Sometimes they work with students individually and sometimes in small groups. They are also fully involved in implementing support programs linked to developing research skills and providing community service.

12. Planning for Teaching

12.1. Annual Plans (Long Term):

The curriculum framework	Assessment schemes
Yearly Plans	Course description & pacing documents
Primary resources	Term projects

12.2. Unit Plans

Learning objectives to be covered weekly	Based on the National Curriculum Framework
Content to be covered weekly	Based on approved learning resources.

12.3. Lesson Plans (Short Term)

Define learning objectives	Demonstrate how IT skills are integrated into education
Clarify how to differentiate activities according to student levels (three levels)	Differentiate activities (multiple intelligences.
Demonstrate integration with other subjects, especially STEM	Allocate time properly for objectives
Clearly define the role of the teacher and the student and use a variety of teaching methods.	Assessment, feedback and reflection.

13. Use of Technology

At QSTSS we believe that technology is transforming education, changing how, when and where students learn, and empowering them at every stage of their journey.

On the path to personalizing learning, technology empowers students by giving them ownership of how they learn, making education relevant to their digital lives and preparing them for their futures. With technology and access to resources beyond classroom walls, students are inspired to become problem-solvers, critical thinkers, collaborators, and creators. Where technology has been successfully integrated into classrooms, students develop a lifelong love of learning.

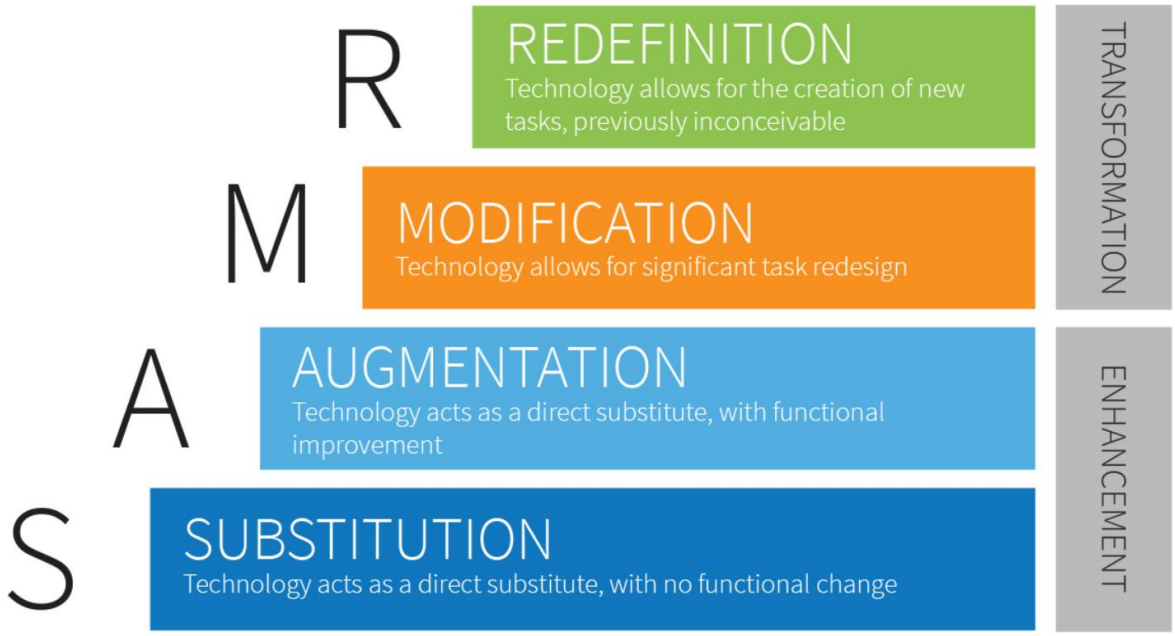
QSTSS teacher are always striving to personalize learning for students. Technology can help them reach new levels with access to real-time student data, longitudinal information, content, apps, and more. Technology can help teachers create blended learning environments and leverage digital tools for formative and summative assessments, bringing new models for learning and teaching to classrooms.

At QSTSS we believe that the use of technology in teaching and learning has many benefits that include:

1. Empowering teachers to efficiently personalize learning with access to data, content and the cloud.
2. Preparing students for the 21st century workforce with modern technology skills and competencies.
3. Helping teachers to create blended learning environments that make learning relevant to students' lives.
4. Giving teachers access to real-time feedback through digital formative and summative assessments and data.

Teachers at QSTSS usually use SAMR Model for technology integration in the classrooms to provide an efficient "Digital Learning Environment" that is informed with the following Cognia/AdvancED standards:

- Learners use digital tools/technology to gather, evaluate, and/or use information for learning.
- Learners Use digital tools/technology to conduct research, solve problems, and/or create original works for learning.
- Learners use digital tools/technology to communicate and work collaboratively for learning.



14. Classroom Displays and the display of learning outcomes

We believe that the purpose of displaying learning outcomes is to support the student learning experience. This can be achieved in various ways, including:

1. Engaging students in an effective learning process in order to produce learning outcomes that give them the feeling of ownership. These displays:

Introduce new ideas.	Are interactive.
Are renewable and relevant to the topics currently being taught.	Generate questions
Are attractive and well-organized.	Are challenging
Express creativity and originality.	Demonstrate identified success criteria

2. Enabling self-learning

3. Keeping what has been learned in the minds of students by:

Displaying main ideas of each lesson/ unit.
Focusing on key terminology.
Providing mind maps.
Introducing KWL outlines.
Providing relevant pictures with a commentary.

4. Celebrating success by:

Presenting model pieces of work.	Presenting best samples of work.
Acting as a Board of Honour for the classroom.	Honouring class achievements.

5. Raising the level of expectations by:

Hi-lighting class / stage objectives.	Identifying objectives to be achieved by the end of each stage / period.
Presenting educational objectives for the class.	Identifying classroom routines and expected behaviours.

6. Explaining classroom routines by:

Displaying general instructions.	Presenting the class timetable.
Presenting educational objectives for the class.	Presenting the classroom layout.

15. Monitoring and evaluating the effectiveness of the teaching & learning process

Quality assurance requires a systematic review of ALL educational programmes and processes in order to maintain and improve their quality, equity and efficiency. The objective is to improve the quality of the student learning experience – with the ultimate goal of promoting the best possible outcomes for learners.

This applies equally to the Teaching and Learning process.

Our starting point in this process is the Cognia/AdvancED Performance Standards for Schools, with specific reference to the following Learning Capacity Domain standards:

Standard 2.1: Learners have equitable opportunities to develop skills and achieve the content and learning priorities established by the institution.

Standard 2.2: The learning culture promotes creativity, innovation and collaborative problem-solving.

Standard 2.3: The learning culture develops learners' attitudes, beliefs and skills needed for success.

Standard 2.4: The institution has a formal structure to ensure learners develop positive relationships with and have adults/peers who support their educational experiences.

Standard 2.5: Educators implement a curriculum that is based on high expectations and prepares learners for their next levels.

Standard 2.6: The institution implements a process to ensure the curriculum is aligned to standards and best practices.

Standard 2.7: Instruction is monitored and adjusted to meet individual learner's needs and the institution's learning expectations.

Standard 2.8: The institution provides programs and services for learners' educational futures and career planning.

Standard 2.9: The institution implements, evaluates, and monitors processes to identify and address the specialized social, emotional, developmental, and academic needs of students.

Standard 2.10: Learning progress is reliably assessed and consistently and clearly communicated.

Standard 2.11: Educators gather, analyse, and use formative and summative data that lead to demonstrable improvement of student learning.

Standard 2.12: The institution implements a process to continuously assess its programs and organizational conditions to improve student learning.

The QSTSS senior management team, head of departments, and educational supervisors from the MOE are responsible for the quality assurance of the teaching and learning processes and will mainly use Cognia's "Effective Learning Environment Observation Tool" (ELEOT).

16. Appendices & Further Readings

For further information about effective teaching and learning practices, teachers are recommended to review the following documents and resources.

1. QSTSS Curriculum Framework
2. Qatar National Curriculum Framework.
3. QSTSS Students Assessment Policy.
4. QSTSS Performance Management Policy.
5. Pedagogy Tips for QSTSS STEM teachers.
6. Differentiation in Action by Primary Professional Development Services.
7. Active Learning & Teaching Methods for Key Stage 3.
8. 101 Active Learning Strategies (in Arabic).
9. High Impact Teaching Strategies.
10. SAMR Technology Integration Model at https://sites.google.com/a/ccpsnet.net/edtechhub/tech-services/samr/samr_high_school

11. ELEOT 2.0 Reference Guide.