Module 1

Developing 21st Century Skills

Description: 21st century, student-centered learning differs from traditional, teacher-centered learning in that the two have different approaches to content, instruction, classroom environment, assessment, and technology. The objective of this module is to have you identify key 21st century skills, examine the trend toward creating a 21st century classroom environment, and explore the differences between teacher-centered and student-centered approaches.

Each module begins with a preview.

Exercise 1: Identifying Essential Skills

Step 1

When students graduate from your school system, what is essential for them to know and to be able to do to be successful in the 21st century workplace? Working in a small group, discuss your answers, and record them on the lines that follow.

Groups will be assigned. Group members will assume the roles of facilitator, recorder, participants, and presenter.

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Step 2

Share your list of essential skills with the large group as directed.

Presenters from each group will share a brief list of essential skills.

Developing 21st Century Skills

In 21st century workplaces, workers

- analyze, transform, and create information

- collaborate with coworkers to solve problems and make decisions

- perform a variety of complex tasks using sophisticated technology

In 21st century homes, families

- are entertained by watching, creating, and participating in a variety of media

- make consumer decisions by looking for information on the Internet

- stay in touch with friends and family members through various technologies

In 21st century communities, citizens

- use the Internet to stay informed about local, national, and global issues

- communicate and persuade others about their opinions using different technologies

- comply with government regulations without leaving their homes

As computers take over routine tasks in the workplace, a far greater proportion of employees are engaged in tasks that require them to be flexible and creative problem solvers. Home life is also more complex in the 21st century as emerging technologies provide almost infinite possibilities for entertainment, leisure-time activities, and participation in community activities.

21st century schools must prepare students to work in today's workplaces, and teachers must stay current with the ways students and families use technology in their daily lives.

In 21st century schools, students

- work on complex, challenging tasks that require them to think deeply about subject matter and manage their own learning

- collaborate with peers, teachers, and experts on meaningful tasks using higher-order thinking

- use technology to make decisions, solve problems, and create new ideas

To help students achieve levels of full participation in their communities, teachers must focus on the 21st century skills[1], listed below, that will help students adapt to changing society and technology:

- **Accountability and Adaptability**—Exercising personal responsibility and flexibility in personal, workplace, and community contexts; setting and meeting high standards and goals for one's self and others; tolerating ambiguity

- **Communication Skills**—Understanding, managing, and creating effective oral, written, and multimedia communication in a variety of forms and contexts

- **Creativity and Intellectual Curiosity**—Developing, implementing, and communicating new ideas to others; staying open and responsive to new and diverse perspectives

- **Critical Thinking and Systems Thinking**—Exercising sound reasoning in understanding and making complex choices; understanding the interconnections among systems

- **Information and Media Literacy Skills**—Analyzing, accessing, managing, integrating, evaluating, and creating information in a variety of forms and media

- **Interpersonal and Collaborative Skills**—Demonstrating teamwork and leadership; adapting to varied roles and responsibilities; working productively with others; exercising empathy; respecting diverse perspectives

- **Problem Identification, Formulation, and Solution**—Ability to frame, analyze, and solve problems

- **Self-Direction**—Monitoring one's own understanding and learning needs; locating appropriate resources; transferring learning from one domain to another

- **Social Responsibility**—Acting responsibly with the interests of the larger community in mind; demonstrating ethical behavior in personal, workplace, and community contexts

[1]Source: Partnership for 21st Century Skills (www.21stcenturyskills.org). Used with permission.

In summary, as 21st century work-places, homes, and citizens change, schools too much change. Teachers must help students develop the skills needed for success in the 21st century.

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Exercise 2: Comparing Classrooms of Today with Classrooms of Tomorrow

Step 1

Share reflections with the whole group.

How were you taught when you attended school? What did you like about how you were taught? What were your frustrations about how you were taught? Write your responses in the table that follows.

How You Were Taught	What You Liked	What Your Frustrations Were

Step 2

Share your reflections with a peer and others as directed.

Traditional, Teacher-Centered Instruction

Traditional, teacher-centered instruction and lecture is the most common teaching behavior found in schools worldwide. Teacher-centered instruction can be very effective, particularly for:

- Sharing information that is not easily found elsewhere

- Presenting information in a quick manner

- Generating interest in the information

- Teaching students who learn best by listening

However, teacher-centered instruction also presents several challenges, including:

- Not all students learn best by listening

- Keeping students' interest is often difficult

- The approach tends to require little or no critical thinking

- The approach assumes that all students learn in the same impersonal way

21st Century, Student-Centered Instruction

How is 21st century, student-centered learning different from traditional, teacher-centered learning? The two methods have different approaches to content, instruction, classroom environment, assessment, and technology, as summarized in the following table. Each approach is appropriate in different situations.

This table is not intended to show a comparison of two opposing approaches where one is more appropriate than the other. On the contrary, this table shows that both approaches can be appropriate depending on a particular situation.

Read silently and identify approaches used in the classroom. Share with the whole group.

Teacher-Centered Approaches	Student-Centered Approaches
Content	
The content is established by a curriculum, and all students study the same topics at the same time.	Students study topics based on curriculum and standards but are allowed numerous choices in a topic of study.
Students have access to limited information, selected by the teacher or the school library.	Students have infinite access to unlimited information of varying degrees of quality.
Topics of study are typically isolated and disconnected from each other.	Students study content in a way that shows connections between subjects.
Students memorize facts and occasionally analyze information critically. There is little focus on applying facts or concepts to a variety of real world situations.	Students learn concepts as well as facts, and frequently engage in high-level analysis, evaluation, and synthesis of a variety of kinds of material. There is an emphasis on showing how concepts apply to a variety of real world situations.
Students work to find correct answers.	Students work to construct any one of a number of possible correct answers.
Teachers choose activities and provide materials at the appropriate level.	Students select from a variety of teacher-provided activities and often determine their own level of challenge at which to work.

(continued)

Developing 21st Century Skills

Teacher-Centered Approaches	Student-Centered Approaches
Instruction	
The teacher is the information giver—the sage on the stage—helping students acquire skills and knowledge.	The teacher is the facilitator—the guide on the side—providing opportunities for students to apply skills and construct their own knowledge.
Learning starts with what students do not know.	Learning starts with students' previous knowledge.
Teaching is an instructive process.	Teaching is a constructive process.
Students complete short, isolated activities and lessons around specific content pieces and skills.	Students work on activities and projects connected to long-term goals aimed at building deep conceptual understanding and proficient strategy use.
Classroom Environment	
Students learn passively in an often silent classroom.	Classroom environment resembles an active workplace with various activities and levels of sound depending on the kind of work being done.
Students usually work individually.	Students often collaborate with peers, experts, community members, and teachers.
Assessment	
Students take paper-and-pencil exams, silently and alone. The questions are kept secret until test time, so students have to learn all the material even though only part of it will be tested.	Students know ahead of time how they will be assessed, have input into the criteria by which they will be assessed, receive feedback from the teacher and their peers throughout a unit, and have multiple opportunities to assess their own learning.
Teachers are primarily accountable for student learning.	Teachers and students share accountability for learning and achievement.
Students are extrinsically motivated by the desire to get good grades, to please teachers, and to gain rewards.	Students' interests and involvement promotes intrinsic motivation and effort.
Technology	
Teachers use various kinds of technology to explain, demonstrate, and illustrate various topics.	Students use various kinds of technology to conduct research, communicate, and create knowledge.

Good teachers recognize that there is more than one way to teach, and that different situations often require different teaching practices. Accordingly, the Intel® Teach Getting Started Course incorporates elements of traditional, teacher-centered instruction, along with elements of 21st century, student-centered instruction. Although differences exist between the two approaches, research indicates that 21st century, student-centered approaches can enhance traditional, teacher-centered instruction by providing a purposeful and meaningful context for which students can master their emerging skills.

You may notice how the facilitator uses a 21st century, student-centered approach when introducing the information in this section.

Step 3

Why might students like 21st century, student-centered approaches? List your ideas and those of others as directed on the lines that follow.

Share your ideas.

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Exercise 3: Introducing Yourself

Now it is time for you to meet the others participating in the course. Hopefully, the colleagues you meet here will become valuable resources for you both during the course and beyond as you return to your classroom and begin applying your 21st century teaching and learning skills and approaches.

Step 1

What would you like to share about yourself? Would you like to tell the grade level or subject area that you teach? Would you like to tell where you teach? List the key points that you want to share on the lines that follow.

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Step 2

Share your key points as directed. Listen while others share as well.

Take-Home Exercise: Reflecting on Module 1

Reflect on the exercises, activities, skills, and approaches addressed in this module. Record your answers to the following questions and be prepared to share your answers at the beginning of the next module.

1. Consider the list of 21st century, student-centered approaches. Which approaches are you most interested in using with your students? How might the approaches support student learning?

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2. Recall the names of the colleagues that you were introduced to during this module and the information that they shared about themselves. Which colleagues might share interests with you? What are those shared interests? How might you collaborate or work together with your colleagues both during and after the course?

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Module 1 Summary

Step 1

What did you accomplish in this module? List your ideas and other participants' ideas as directed on the lines that follow.

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Step 2

What key points are addressed in this module? List your ideas and other participants' ideas as directed on the lines that follow.

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Step 3

Ask any questions and share any comments. Learn about and prepare for Module 2: Learning Computer Basics and the Internet.