



CASE is a research-based framework outlining the essential factors schools need in order to improve learning through the use of technology.

There are four **domains**: Classroom, Access, Skills, and Environment. These are the essential factors needed for successful implementation of technology in the classroom. Each domain is consists of what we call **success indicators** – these are the areas from which the questions we ask teachers, students, and parents come.

Our research and development wing, BBLabs, analyzes data and research from thousands of sources to inform and improve the CASE framework, as well as ensure we continue to ask the right questions at the right time of your teachers and students.

This document is intended to explain how the CASE framework aligns to the questionnaires distributed to teachers and students. For each **success indicator**, example questions are shown demonstrate how the success indicators are defined and how they are measured.

ACCESS

Student & Teacher Access at Home

- Do you have access to the following: laptop, tablet, desktop, MP3 player, e-Reader, digital camera? Is it shared or unshared?
- Do you have access to the Internet at home? Is it wireless?

Collecting this information from your *students* helps gauge their preparedness for things such as a flipped classroom, a bring-your-own-technology plan, or use of online collaboration tools for school assignments.

Collecting access at home information from your teachers is used to inform decisions around at-home access to school information systems so grades, attendance, assessment information, etc. can be worked on from home.

Student Access at School

- What is the typical student-to-device ratio? Where do these devices come from?
- How easy is it for [teachers] to get the device carts or access to the computer lab?

Teachers provide the data around student access at school. The access at school questions inform administrators from a global perspective about achieving a 1-to-1 ratio, but they also provide detailed information into the frequency of student access to them, where they are coming from, and what their quality is.

Teacher Access at School

- Do you have access to a device in your classroom for your OWN use?
- Do you have a school-owned mobile device? Are you able to take it home?
- What is the quality of the Internet at school?

Not only do the teacher access at school questions inform administrators of not only the devices teachers have for their own use, but also the various devices found in their classroom (LCD projectors, digital cameras, ...). Additionally, the teacher access at school success indicator provides insight into the various systems teachers have access to (a place for entering grades, attendance, assessment data, IEPs, ...).

SKILLS

Teacher & Student Foundational Skills

- How easy is it for you to send an email?
- How easy is it for you to connect to a printer?
- Do you agree with the following, “When faced with a technology-related problem, I usually find a good solution.”

The foundational skill questions gather information on both frequency of exercising various skills, but also how easy they find certain activities to be. These questions help administrators understand how comfortable their teachers and students are with basic computing and interactions with the Internet. We ask about connecting to printers not because we think it’s important to know how to print, but rather it is used to gauge one’s understanding of the ports and system preferences found on their device. The questions regarding solving problems with technology and learning new technologies are used to understand teachers’ and students’ self-efficacy around using technology. Research shows that self-doubts can easily overrule even the most expert skillsets.

Teacher & Student Online Skills

- How easy is it for you to collaborate using online documents (Google Drive, dropbox, ...)?
- How often do you
 - Chat on the Internet (Skype, Facebook, Google Chat, ...)?
 - Read online content (news, magazine articles, blogs, ...)
 - Use the following social networks: Twitter, Google+, Facebook, LinkedIn?*

The online skills questions help understand how frequently teachers and students are interacting with the Internet – be that communicating with others, collaborating on shared documents, consuming content (news, RSS feeds, blogs, ...), or creating content by writing reviews or blogs, posting photos or videos, etc.

Teacher & Student Multimedia Skills

- How easy is it for you to record and edit audio?
- How easy is it for you to record and edit video?
- How often do you download or stream music to a device?

Research shows that teachers with strong multimedia skills are better prepared to engage their students in digital creativity – a key component to successfully implementing use of the 4Cs in the classroom. The multimedia skills questions inform administrators of the ease with which teachers and students are able to interact with various media. This information can be used to inform curriculum and professional development planning.

ENVIRONMENT

The 3Ps – Policies, Procedures, & Practices

- How often is technology part of department/grade-level meetings?
- How strongly do you agree with the following, “I am recognized for integrating technology into my teaching (school recognition, advancement, funding for professional development, or similar).”
- Do Internet filters get in the way of accessing websites needed for class?
- Are students allowed to use personal mobile devices in class for academic purposes?

Understanding how the policies, practices, and procedures in place impact your teachers and their classrooms will help administrators understand where they may need to focus their attention. Additionally, finding out how much technology is part of the conversation during department meetings, evaluations and class observations provides insight into how embedded technology is in the school culture.

Support

- Rate the average *speed* and *quality* for the following technology services at your school:
 - Support for problems disrupting instruction
 - Answers to routine questions
 - Instructional technology planning
 - Hardware repair

Understanding how teachers perceive the support services at school can help inform resource allocation and identify gaps in services provided. Additionally, it is important to remember that teachers are reporting the *perceived* quality of these services. Sometimes, it’s a matter of better communicating what is available to your teachers when they are in need of support.

Professional Learning

- How many hours of the following types of technology PD have you done in the last 12 months? What was their quality?
 - School sponsored PD (in-service days, summer/after-school classes, mentoring, peer coaching, ...)
 - Non-school sponsored FORMAL PD (degree programs, conferences, workshops, seminars, ...)
 - Non-school sponsored INFORMAL PD (blogs, videos, social networks, webinars, ...)

The professional learning questions shed light on the level of engagement and the *perceived* quality of the services teachers participated in over the last year. In breaking teacher participation into school-sponsored and non-school-sponsored

(both formal and informal) the opportunities expand for conversations around what professional learning looks like in the 21st century.

Teacher & Student Beliefs

- Technology use in the classroom can enhance student learning.
- My school encourages technology use for teaching and learning.
- I think that computers and technology enhance my daily life.

Traditional beliefs have been found to have a negative impact on the integration of technology in the classroom. Therefore, collecting information on teacher and student beliefs around technology use establishes a greater understanding of where you may need to begin. Teacher beliefs are particularly important when considering professional development offerings, as one's ability to learn information is hinged upon whether they believe that it will benefit them.

CLASSROOM

The 4Cs: communication, collaboration, creativity, & critical thinking

Teacher Use of the 4Cs

- How often do you ask your students to do the following:
 - Collaborate online with classmates
 - Make an arguments using evidence from online sources?
 - Use chat or video chat applications (IM, GoogleTalk, Skype, ...)
 - Create and upload art, music, movies, webcasts ...

By asking teachers about the frequency with which they have their students engage in activities that require them to use technology, administrators can begin to identify gaps in the translation of existing skills into the classroom. Regular use of the 4Cs in will provide students with the learning opportunities that are critical to developing the knowledge needed for college- and career-readiness.

Student Use of the 4Cs

- How often do the majority of your teachers ask you to do the following:
 - Collaborate online with classmates
 - Make an arguments using evidence from online sources?
 - Use chat or video chat applications (IM, GoogleTalk, Skype, ...)
 - Create and upload art, music, movies, webcasts ...

By asking students the same questions that we ask their teachers, we are able to identify gaps in the use of digital tools for these activities. In particular, we see that students report doing these activities more often than their teachers report asking them to do them. This is likely a result of students' natural inclination to take advantage of these tools and is often evidenced in their online skills data.

Teacher Digital Citizenship

- How much time do you spend per year teaching your students about:
 - Legal use of online content
 - Online safety
 - Cyberbully prevention
 - Using social networks for learning
 - Evaluating the credibility of online content
- Rate your knowledge of:
 - Legal use of online content
 - Online safety
 - Cyberbully prevention
 - Using social networks for learning
 - Evaluating the credibility of online content

Student Digital Citizenship

- How often do your teachers talk to you about:
 - Legal use of online content
 - Online safety
 - Cyberbully prevention
 - Using social networks for learning
 - Evaluating the credibility of online content

We contrast teachers' self-reported knowledge with the amount of time they spend teaching their students about the topics in order to help identify where gaps may exist. By asking students how often they are taught these topics, we are able to see at a more micro level, how frequently these conversations are happening.

Assistive Technology

- Do you have access to assistive technology for your students?
 - If so, how often do you use it with English language learners, general education students, and special education students?
 - How often do you receive professional development of their use?
- How often do you use the following in your class:
 - Classroom display devices
 - Digital textbooks

The assistive technology questions are intended to gauge the level of involvement teachers have in the decisions around what technology to bring into the classroom, who will be using it, and how to use it. We include opportunities to measure assistive technology use for all students, and ask about informal uses of assistive technology, such as digital textbooks and display devices. Together, these provide insight into how teachers and administrators are approaching the use of technology to differentiate instruction for their students.

Digital Assessments

- How often do you digital polling mechanisms with your class?
- How often do you administer digital or online assessments to a majority of your students?
- How often do you use subject- or grade-specific software with a majority of your students?

The use of digital assessments allow for higher quality and more frequent feedback for students. Additionally, they offer the opportunity to take quick polls so teachers can gauge what students might be missing in their understanding of the lesson. Additionally, research shows that teachers who use subject- and/or grade-specific software have greater comfort using technology in their classrooms.

HOW TO APPROACH CASE

When thinking about the framework and how to approach it when looking at the data, approach it as an opportunity to thread together the pieces of your organization's technology use into a meaningful and easily digestible story.

- First, look at **Access** to determine the levels of connectivity your students and teachers have at home and at school.
- Second, look to see if your teachers and students have the **Skills** needed to take full advantage of the tools they have access to.
- Third, look to see if the school **Environment** has created a supportive and encouraging atmosphere when it comes to this technology.
 - Do they have policies in place that do not interfere with teacher use of the Internet for class?
 - Do your students and teachers believe the school encourages technology use for learning?
 - Do your teachers feel they are provided with adequate support for using technology with their students in the classroom?
- Finally, now that we understand
 - the level of **Access** your teachers and students have to devices
 - how they are applying their **Skills** to use the devices
 - how the school **Environment** has created a culture that supports the use of those devices and enhances those skills

We want to find out if these are all translating into effective **Classroom** activities that provide students with the learning opportunities needed to gain college- and career-readiness for the 21st century.