

TESOL Technology Standards Framework



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PREFACE

Computers will not replace teachers. However, teachers who use computers will replace teachers who don't. —Ray Clifford, Defense Language Institute

Teachers have long used technology in teaching. The pace and extent of change in technology for teaching, however, have made it difficult for many teachers, teacher educators, and administrators to know how best to employ computers, other forms of digital technology, and the global interaction enabled by the Internet in language teaching.

These Technology Standards, gleaned from practice and research, focus on how English language teachers, teacher educators, and administrators can and should use technology in and out of the classroom. These standards build on work done by the National Educational Technology Standards (NETS) Project in the International Society for Technology in Education (ISTE), but have a strong focus on pedagogy specific to English language teaching (ELT). They are designed to be applicable to teachers and students at a range of English proficiency levels in many English language teaching and learning settings around the world. The authors recognize that technology remains intimidating to many teachers but strongly believe that the appropriate use of technology by a trained teacher can greatly benefit language learners. Administrators and teacher educators should also be aware of these standards in order to apply them when designing programs at their institutions.

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INTRODUCTION

Defining Technology

The term *technology* in this document refers to the use of systems that rely on computer chips, digital applications, and networks in all of their forms. These systems are not limited to the commonly recognized desktop and laptop computers: Almost all electronic devices these days include an embedded computer chip of some sort (DVD players, data projectors, interactive whiteboards, etc.). Mobile devices that employ a computer at their core (cell phones, personal digital assistants [PDAs], MP3 players, etc.) will undoubtedly occupy a more central role in language teaching and learning in the years to come.

In addition to the term *technology*, the terms *digital*, *electronic*, and *CALL* (computer-assisted language learning) also appear in this document. Over the past 25 years in language teaching and learning—both within and beyond the Teaching English to Speakers of Other Languages (TESOL) community—the discussion of electronic devices and systems in language teaching and learning has relied most heavily on the acronym CALL. The term appears in the name of the CALL Interest Section of TESOL, in other organizations' names (APACALL, CALICO, EuroCALL, JALTCALL, PacCALL, WorldCALL), and in the regional and international journals associated with those groups.

Organization of This Document

This introduction sets the stage for the Technology Standards, and it provides a rationale and overview for the rest of the document. This framework presents the standards in two major sections: *Technology Standards for Language Learners* and *Technology Standards for Language Teachers*. The Learner section contains three overarching goals, each with two to five standards, for a total of 11 standards. The Teacher section presents four overarching goals, each with three to five standards, for a total of 14 standards. The goals and standards are not meant to be sequential; Standard 3 is not intended to be more difficult than Standard 2 or easier than Standard 4, for example.

Both the Learner Standards and the Teacher Standards include consistently appearing performance indicators and occasional vignettes. Examples appear within the performance indicators, in order to avoid the use of technical language and the brand names of hardware and software in the standards themselves. Making the performance indicators and standards generic takes into account the rapidly changing nature of technology, and this feature will enable this document to remain current.

The performance indicators in the Learner section pertain to a range of settings—including high-access or low-resource; English as a second language (ESL) or English as a foreign language (EFL); face-to-face, hybrid, or fully online; child or adult; and general English or English for specific purposes (ESP), including academic English. Some performance indicators specify a particular setting, such as young learners or fully online.

The performance indicators in the Teacher section indicate standards that all teachers should be able to meet. Some of the standards include additional performance indicators for “technology experts.” These teachers have a high level of technological ability, experience, and pedagogical knowledge. Teachers serving as technology specialists should be able to meet the “expert” performance indicators in settings that rely heavily on technology.

This document features at least one vignette per goal. These serve as examples of the more extensive vignettes that will appear in the forthcoming volume. The vignettes in the full volume will cover a range of English proficiency levels and learner ages (children, teens, adults), as well as varied settings (including EFL, ESL, intensive English programs, adult workplace English, academic and professional ESP, one-computer classroom, class-lab, and fully online). Some of the vignettes will also show administrators and teacher educators making decisions related to technology use.

A **glossary** defines the specialized terms used in this document. **Appendix A** contains language proficiency performance definitions for primary and secondary English language learners from the *PreK–12 English Language Proficiency Standards* (Alexandria, VA: TESOL, 2006, p. 39) and adult English language level descriptors from the *Standards for Adult Education ESL Programs* (TESOL, 2003: 151–156). **Appendix B** contains a matrix of proposed vignettes for the full volume. The full volume will also include a list of additional professional resources.

An online companion to this volume will include additional information, resources, vignettes, and a form intended to keep the Standards current—facilitating comments on the Standards and the submission of additional resources and vignettes.

Audience and Purpose

The Technology Standards target a range of stakeholders, and the purposes for which students and teachers may use these Standards are numerous. These Standards have been crafted to be relevant to both ESL and EFL settings, and for those who are teaching completely face to face, completely online, or a mix of the two: The vignettes illustrate specific uses in each of these contexts.

The overall objective is to provide guidance, rather than to set barriers or unrealistic expectations. The implementation of these standards and those that follow may be a lengthy process. A teacher graduating from a professional program today may be teaching for more than 40 years. Thus, it is imperative to provide mechanisms for foundational as well as ongoing professional development in a way that is sustainable and supportive rather than punitive. In addition, the Teacher Standards distinguish between “basic” and “expert” levels of technological knowledge and skills in order to establish the need for a common base and the advantages to the teacher and the employing institution of surpassing that level of proficiency.

PURPOSE OF THE STUDENT STANDARDS

For students

- to know what is expected of them in terms of technological knowledge and skills
- to know what is expected in terms of appropriate patterns of technology use

- to evaluate course options, when feasible, to decide which ones best support standards development

For parents, parent organizations, and sponsors

- to determine whether objectives are being addressed
- to support students at home
- to evaluate language programs

For teachers

- to know what is expected of them in terms of knowledge, skills, and curriculum implementation
- to prepare students in the effective use of technology for language learning and for digital literacy
- to assess students' technological knowledge and skills
- to provide activities and tasks that appropriately integrate the students' progress in meeting the standards while pursuing language learning objectives
- to serve as a springboard for ideas about creatively and effectively integrating technology into teaching

For materials writers and publishers

- to develop textbooks and other materials, including software and Web sites, that support achievement of the standards
- to develop textbooks and other materials that incorporate activities and tasks that utilize the knowledge and skill in the standards

For teacher educators in both preservice and in-service settings, including CALL specialists and other English language teacher educators

- to aid teachers in understanding the role of student standards in language education
- to provide instruction in training students effectively in the use of technology
- to provide instruction in how to assess student technological knowledge and skills

For teacher education (preservice) programs

- to ensure that teacher candidates know about and understand the student standards
- to provide opportunities for teachers to see how standards can be implemented with their future students

For institutional administrators

- to recognize the importance of developing technological literacy for language learning
- to ensure that the institution has sufficient infrastructure for the successful realization of student standards
- to develop and monitor suitable implementation of technology in their language programs

For professional organizations

- to advocate for the promulgation of student standards

- to provide or support the development of mechanisms for determining whether standards have been met
- to offer materials, courses, and workshops to assist teachers and institutions in facilitating student achievement of the standards

For educational policy groups, including Ministries and Boards of Education

- to provide guidance and funding for institutional technology infrastructure and support personnel
- to provide mechanisms for specifying how standards can be implemented in local contexts
- to provide systems for certifying when standards have been met

PURPOSE OF THE TEACHER STANDARDS

For teachers

- to recognize the need for integrating technology in their teaching
- to know what is expected of them in terms of knowledge, skills, and curriculum implementation
- to understand the need for continual learning throughout their professional careers
- to challenge themselves to reach a higher level of proficiency in using technology in their teaching (“expert” skill level)

For parents, parent organizations, and sponsors

- to determine whether standards are being met
- to advocate for school support of standards
- to evaluate language programs

For students

- to recognize what to expect from institutions
- to recognize what to expect from teachers

For materials writers and publishers

- to develop textbooks and other materials, including software and Web sites, that support achievement of the standards
- to develop textbooks and other materials that incorporate activities and tasks that utilize the knowledge and skills in the standards
- to ensure appropriate support for technological applications requiring knowledge and skills beyond the basic standard targets

For teacher educators in both preservice and in-service settings, including CALL specialists and other English language teacher educators

- to diagnose teacher candidate knowledge and skills
- to develop preservice courses and sequences
- to integrate technology appropriately into existing teacher education courses
- to ensure that teacher candidates have been introduced to and apprized of the importance of the standards

- to provide opportunities for teacher candidates to see how standards can be implemented

For teacher education (preservice) programs

- to incorporate all relevant standards into the teacher education curriculum
- to ensure that a technology infrastructure is in place so that teachers may have hands-on experiences with technology
- to ensure that current program faculty meet, or are being provided with support toward meeting, the standards
- to actively seek technologically proficient faculty for future hires

For institutional administrators

- to recognize the importance of integrating technology in their teaching
- to develop and monitor suitable implementation of technology in their language programs
- to set qualifications when employing new staff
- to set reasonable goals when training existing staff

For professional organizations

- to advocate for the promulgation of the standards
- to cooperate with other organizations in the continuing development of consistent standards
- to provide or support the development of mechanisms for determining whether standards have been met, including teacher certification
- to offer materials, courses, and workshops to assist teachers and institutions in facilitating achievement of the standards

For educational policy groups, including Ministries and Boards of Education

- to provide guidance and funding for institutional technology infrastructure and support personnel
- to provide mechanisms for specifying how standards can be implemented in local contexts
- to provide systems for certifying when standards have been met
- to provide funding and other support for continuing teacher education

Considerations

It is fair to assume that the teachers and administrators consulting this document either have some access to technology or are planning to use technology in their setting. However, some users may not enjoy high-speed Internet access, a lab of fully equipped computers, or skilled technical support. The settings for the use of technology in this document include face-to-face, completely online, and a mixture of both (hybrid). Technology is a moving target, so “new” equipment and software may become quickly outdated. In addition, users of technology for language teaching often have shifting levels of access, depending on where and what they are teaching. As a result, many of the standards mention “available” technology. In all of the standards, the focus is on language teaching and learning rather than on the technology itself. Insofar as the focus is on learning, the principles of teaching in an online environment are not fundamentally different from those employed in teaching in a face-to-face or hybrid setting.

Some performance indicators are particularly germane to fully online teaching, and the full volume will offer additional vignettes representing that setting.

Background

DEVELOPING THE TECHNOLOGY STANDARDS

The Technology Standards Project Team studied the material developed by Sophie Ioannou-Georgiou and the Ad Hoc Committee on the Technology Standards in order to present the initial proposal to the Standards Committee for guidance about the direction and scope of the project. The team relied on TESOL's ESL Standards for Pre-K–12 Students, Standards for Adult Education ESL Programs, and the 2006 PreK–12 English Language Proficiency Standards as models for the format and features of these standards. The National Educational Technology Standards (NETS), which were created by the International Society for Technology in Education (ISTE), informed the content of these standards. The team also explored NETS, which are widely used in the United States in primary and secondary education, to evaluate if NETS for Students, NETS for Teachers, NETS for Administrators, NETS for English, and NETS for Foreign Languages contained basic concepts that would also be useful in the creation of the Technology Standards. In addition, the project team considered the Information and Computer Technology for Language Teachers (ICT4LT) “Can Do” lists (<http://www.ict4lt.org/en/index.htm>) for technology-specific competencies for teachers.

Other sources of inspiration for these standards include articles by Phil Hubbard (“CALL Professional Development” in Egbert & Hanson-Smith, *CALL Environments*, 2nd ed.; “Why call CALL ‘CALL’?” by Levy and Hubbard in *CALL Journal*, 18.3, 2005; and “The Scope of CALL Education” by Hubbard and Levy in Hubbard and Levy, *Teacher Education in CALL*). Greg Kessler’s “Technology Standards in Foreign Language Education” in Cennamo, Ertmer, & Ross’s *Technology Integration With Meaningful Classroom Use: A Standards-Based Approach* provided ideas about content and format for the Standards. Refer to the reference list for numerous other sources that influenced the development of the Technology Standards.

The Project Team isolated some basic competencies from the NETS standards, with a focus on NETS for Students and NETS for Teachers. The contributors added, edited, and deleted content from these materials, based on their experience as and with English language teachers from primary to university and continuing education, as well as their experience with English language learners from preschool to university and continuing education. A series of online and face-to-face discussions ensued and led to the current Technology Standards document.

The Technology Standards are different from the existing TESOL Standards documents in several significant ways:

- They include standards for both students and teachers in one location. They are closely interrelated and therefore should appear together.
- Standards for students and teachers at all levels appear together in one volume. The text notes substantive differences, such as between approaches intended for young children and those for adults, and the vignettes clarify these distinctions.

- The standards are designed for an international audience. As such, they account for the variation in technology infrastructure between high Internet speed, high-resource settings and low Internet speed, low-resource environments.
- The document distinguishes between baseline expectations of teachers and expectations for those who have greater technological expertise. Teachers who serve as formal or informal technology coordinators for their schools should meet the “expert” level of and be appropriately compensated for their demonstrated higher level of skill.

NEED FOR THE STANDARDS

The rationale for the Standards is to level the playing field and guide teachers toward more effective practice. The Technology Standards will also give prominence to technological issues, help educators realize the potential benefits of technology, and prompt educators to learn to use technology in their teaching. It is equally important for administrators and policy makers to understand the significant role of technology so they foster the learning process by providing the necessary structure, support, and infrastructure. The Standards are also intended to clarify the difference between simple use of technology (e.g., serving as another visual aid or drill machine) and quality use of technology (e.g., developing critical thinking and autonomous learning while maximizing beneficial interactions).

The Technology Standards may also help in minimizing the digital divide that exists not only between countries but also *within* countries. According to the **U.S. Census Bureau (2001)**, only 43% of black children and 37% of Hispanic children in the United States live in computer households, compared to 77% of white non-Hispanics and 72% of Asians. The existence of Technology Standards for English language learners can, hopefully, minimize such disparities in computer literacy among U.S. children by encouraging adequate access to technology and development of appropriate skills during school hours.

Another kind of divide, and the one that will take the place of the original digital divide as access to technology increases, exists in the type of technology education offered to the students (**Warschauer, 2003**). That is, the access to technology is not unequal, but the types of computer use are. In one such instance, Project Team member Sophie Ioannou-Georgiou recently worked with one of the most well-equipped primary schools in Cyprus. The school has a networked computer lab with printers and data projector, one of the richest software libraries on the island, and an Internet connection that covers all the computers of the lab and all the computers in the school, which are also linked on the same LAN (one computer in each classroom). Despite the available technology, many classroom teachers never used the computers at all. Some teachers used the computers to prepare their work and handouts, and two teachers sometimes used the computer lab. The most surprising discovery came when working with the 12-year-old students who were completing their studies at the school. The majority of these children could not perform basic tasks such as typing, dealing with pop-ups when switching on the computer, or saving to a floppy disk. She subsequently encountered the same problem in many other primary schools in Cyprus. These findings are undoubtedly unique neither to these schools nor to this location. These findings reinforce the need for teacher training.

Although technology can afford learning benefits to students, such results depend on teachers using it both as a productivity tool and in their classrooms. Wengliski (1998), for example, found a negative relationship between the overall frequency of use of school computers and school achievement, but positive effects in certain situations. These findings indicate that even though students have more access to computers, teachers must use computers effectively to promote student achievement on assessments. Pelgrum and Plomp's international study (2002) offers further support to Wengliski's findings that mere access to computers does not guarantee improved student learning. It is imperative, therefore, that teachers have guidance in their implementation of technology. The Technology Standards can provide such guidance.

Apart from encouraging appropriate and adequate use of computers, the Technology Standards are also necessary in helping educators and policy makers take the first step in technology implementation: actually using computers. Almost all public schools in the United States have computers available for teachers and students to use (Parsad & Jones, 2005), but teachers in many schools simply do not use the technology that is made available to them (Cuban, 2001). Awareness of the Technology Standards and the specific guidelines they offer to teachers in using technology in their language classrooms may be a positive factor in encouraging teachers to use technology.

To sum up, the Technology Standards can provide an opportunity for the ELT community to clarify expectations regarding the integration of technology in teaching and learning. The Standards can assign technology an "official" recognition of its importance in this field. As Davison (2005) points out, the application of technology standards in ELT has the following benefits:

- the establishment of a shared set of expectations or practices for information technology (IT) in ELT
- the articulation of a clear set of stages for the development of teacher IT competence, which might be used as a guide for professional development programs or for independent learning
- the explicit recognition of achievement or progress in the development of IT competencies among teachers or organizations

Although there are other Standards documents available, these do not fully cover the needs of the profession. TESOL's existing Standards do not currently reference technology use. United States-based educational technology standards documents, such as the Los Angeles Instructional Technology Plan, the National Educational Technology Standards for Teachers, the Kentucky State Standards, and the Technology Education Standards of the Arizona Department of Education, do not link technology use to ELT. Other documents that reference technological skills in a broader educational context, such as the Partnership for 21st Century Skills' Framework for 21st Century Learning (2004), do not address English language learning specifically. Davison (2005) also establishes the absence of Technology Standards suitable for English language teachers in Australian and European Standards documents. Even in cases where special effort is made to link technology standards to specific subjects, there seems to be little or no reference to second or foreign language teaching and learning. The language teacher

needs not only standards for general computer use and competencies but also standards addressing computer use that is specific to the language classroom environment.

Most of the Standards initiatives are United States based, but TESOL should realize its potential influence on and support for its international members. In many countries there are no standards available, let alone technology standards. The development of the Technology Standards by TESOL can, therefore, prove very helpful to ELT international colleagues.

Finally, the existence of the Technology Standards will help teachers understand the emphasis that is placed on technological literacy and the importance it carries for students' future competitiveness at the workplace.

Assessment and the Technology Standards

The Technology Standards are intended to be used in a wide range of settings and for very diverse audiences—including students in primary schools, specialized ESP courses at the postsecondary level, and functional literacy classes for immigrant students. Therefore, the Standards cannot be viewed as a standalone document that can readily be applied equally across contexts for the purposes of assessment. Rather, these Standards form a part of the overall process of assessment. In the first phase, educators in their local contexts can consult the Standards in order to understand the breadth and depth of knowledge and skills that are associated with technology integration and use in language learning and teaching. Each context will undoubtedly have unique resources and constraints, and the Standards serve as a set of parameters for helping educators develop an assessment plan that works for their particular local contexts. Throughout the Technology Standards, vignettes illustrate this process of adaptation to local contexts.

PERFORMANCE-BASED ASSESSMENT

Most of the standards in this document are performance based, because many uses of technology in the classroom lend themselves well to observational assessment. Performance indicators of this sort are found throughout both the Student and Teacher Standards and are often marked by verbs such as *perform*, *use*, *operate*, *document*, *participate*, and *identify*. Whenever possible, the Standards rely on outcomes that are directly observable so evaluators can assess what students and teachers actually *do*. In other instances, assessing what teachers and students *know* or *understand* relies on indirect forms of assessment and on locally developed performance assessments. Such assessments might include portfolios, documentation of project work, self-assessment checklists, learners' logs, and checklists of completed outcomes and competencies. In sum, the following guidelines for an assessment should apply:

- Teachers and students can demonstrate achievement of the standards in different contexts of use (teaching and learning in the classroom, as well as planning, implementing, and evaluating outside of the classroom) and in multiple forms of assessment (portfolios, self-evaluations, project documentation, and student achievement).
- The performance indicators provide examples of how standards can be met but do not provide an exhaustive list.

- The quality of teacher and student performance with technology is contingent on multiple factors, including teacher and student competence, skills, and knowledge as well as levels of access to hardware, the Internet, training, and technology support.
- Some of the performance indicators can serve as a checklist only for purposes of self-assessment in identifying areas of strength and weakness. Otherwise, educators must refine the performance indicators based on their own local context in order to assess the quality of teacher and student performance.

NEEDS ANALYSIS

Viewing assessment as a joint process strengthens an institution's overall integration of technology: Collaboration helps stakeholders become aware of areas in need of growth. For example, in a needs analysis, teachers and students can use the Standards as a self-assessment rubric to evaluate the strengths and weaknesses in their experience with technology. A teacher might find, for example, that she readily meets the first standard of Goal 1 (knowledge and skills with basic concepts and operational competence), but that she knows less about specific details of using technology in legal and ethical ways (Standard 4), such as the local legal requirements regarding fair use, copyright, and accessibility. It is then the joint responsibility of the teachers and other stakeholders (administrators, Ministries and Boards of Education, teacher educators, etc.) to address this gap in teacher knowledge.

MULTIPLE VARIABLES

It is necessary to consider one final point concerning the use of the Standards for assessment purposes: the sheer number of variables that influence how technology is or can be used in a given setting. Stakeholders, teachers, and students need to be aware of their access to technology: level of access to hardware, level of access to the Internet, type and stability of Internet access, level of access to technology support, and level of access to an educational community supportive of technology integration. The Standards attempt to provide tangible examples that take these variables into consideration. For example, Goal 2, Standard 1 for teachers ("identifies appropriate technology environments to meet specific learning/teaching goals"), the examples include a lab, a one-computer class, online, and independent use. A one-size-fits-all interpretation of the Technology Standards will fail, but the Standards provide a sound and well-balanced model toward which stakeholders, teachers, and students should strive as they build technology into their local language teaching and learning contexts.

TABLE 1. STAKEHOLDERS AND TYPES OF ASSESSMENT

Stakeholders	Types of Assessment
Teachers and students self-evaluating: to know what is expected of them in technological knowledge and skills	Self-assessment
Teacher education programs and teacher educators: to ensure that preservice and in-service teachers know about, understand, and implement the Student Standards as well as achieve the Teacher Standards	Exams Pre/post-knowledge surveys Portfolios Documentation of assignments and project work Self-assessment
Institutional administrators, local school personnel: to ensure sufficient infrastructure and to help develop and monitor technology implementation	Classroom observations with checklists Student outcomes (checklist of competencies met) Teacher portfolios Student portfolios Teacher self-assessment Teacher conferencing
Educational policy groups, including Ministries and Boards of Education: to provide guidance, funding, standard adaptations to local context, and systems for certification	Inventories of existent technology infrastructure Checklists of teacher and student competencies met Self-assessments of teacher needs

Theoretical and Research Bases

At present, there is no clearly articulated theory specific to technology use in language teaching that could be used to inform these Standards. Numerous scholars believe that the theoretical foundation for this field comes from a multitude of sources. Following Ellis (1999), Chapelle (2003, p. 56) takes the key concept of *interaction* and discusses three theoretical perspectives: the interaction hypothesis, sociocultural theory, and depth of processing theory. For each perspective, she demonstrates how a computer can help a language learner in some relevant way—by providing enhanced input, help for using language, and opportunities for increased attention to language, respectively. Those looking for a more unified view may find it in Egbert, Hanson-Smith, and Chao (2007). These researchers take the position that “the hypothetical theory of CALL sounds not much different from an integrated theory of language acquisition; in fact, it is the same” (p. 1).

Levy and Stockwell (2006) reach a similar conclusion, noting that “[w]ith rare exceptions, CALL designers and language teachers are predominantly in the role of consumers as far as theory is concerned. For those in this group who see value in theory (and it must be said not all do), they review, select, and apply theories of language learning produced by others” (p. 139). Kern (2006) links this relationship of consumerism to a general issue in second language acquisition (SLA) theory: Citing Kramsch (2000) he observes, “... it is important to bear in mind that SLA

is itself informed by a rich variety of theoretical frameworks and has consistently resisted a single overarching theory” (p. 187).

The situation with research in this field is similar. Egbert, Hanson-Smith, & Chao (2007) attempt to unify the field by organizing their edited volume with results from a broad research base. In that volume, their chapter delves into 8 optimal conditions for language learning. However, in their chapter on CALL research, Levy & Stockwell (2006) identify 6 research strands with accompanying representative studies reflecting a “mix of approaches, methods, research tools, and procedures” (p. 157). An edited volume devoted specifically to CALL research (Egbert & Petrie, 2005) includes 12 chapters representing a wide variety of research perspectives and providing further evidence of fragmentation that is similar in many respects to divergences in SLA and general learning theory.

In addition to the work above, a strand of recent relevant literature centers specifically on language teacher education in the technology domain. A special issue of *Language Learning and Technology* (2002), and edited volumes by Hubbard and Levy (2006b) and Kassen, Lavine, Murphy-Judy, and Peters (2007) focus on this area. Among the themes found in multiple contributions to this literature are the value of project-based learning, the importance of reflective learning, linkages to communities of practice, and development of teacher candidate portfolios. Each of the edited volumes also includes a chapter on standards: Murphy-Judy and Youngs (2006) and Oxford with Jung (2007), the latter taking a highly critical view on current implementations.

Despite the large number of theories and research approaches, it is possible to identify three general themes that both support the need for the Technology Standards in TESOL and identify necessary content for the Standards themselves.

- I. Research shows that there are important benefits to be gained from the use of technology in language learning and teaching.

Numerous studies looking at the effect of CALL on language learning support the integration of CALL in language teaching. A recent research synthesis by Grgurović and Chapelle (2007) looking at 200 experimental and quasi-experimental studies between 1970 and 2006 revealed that a) computer instruction is slightly better than “traditional” instruction (even) under the most rigorous methodological conditions and that b) “improvement is detected for CALL groups more often than not” (slide 24). Consequently, it is imperative that teachers be able to make decisions about the role of CALL in their pedagogy. However, only teachers with sufficient knowledge about CALL can make that decision wisely.

There is also evidence indicating important benefits of technology in language learning and teaching. These are found mainly in a) improved motivation and development of positive attitudes towards learning and the target language (e.g., Pennington, 1996; Warschauer, 1996; Meunier, 1997); b) improved learning outcomes (e.g., Brandl, 2002); and c) improved retention rates (e.g., Ioannou-Georgiou & Michaelides, 2001).

Additional applications of CALL that have been studied include access to linguistic and cultural materials, opportunities for communication, provision of feedback, and learner motivation. Zhao's (2003) synthesis outlines efforts in these areas and calls for further research on comprehensive curriculum development, effective use of technology, classroom uses of technology, and empirical studies on how technology is used in schools.

2. Technology should be incorporated into teaching pedagogy so that students will not only effectively acquire a second language but will also develop electronic literacy skills.

Teaching our students language in its traditional media is no longer enough. Traditional literacies, such as reading and writing, are now only a subset of the skills a learner is required to develop in order to function efficiently. Increasingly, in everyday and professional life, people need the skills of electronic literacy, such as accessing, evaluating, and utilizing information (Warschauer, Shetzer, & Meloni, 2000).

Chapelle and Jamieson (2008) argue for an expanded view of English language teaching pedagogy, which ought to now also include not only the learner, the English language, and the teacher, but also technology as an integral part. Chapelle and Jamieson articulate three assumptions of language learning—1) guidance in learning a language is necessary, 2) English manifests itself in many varieties, and 3) teachers provide guidance and structure—and explain that CALL may be able to provide opportunities to complement these already-used teaching strategies. Specifically, CALL can foster both skills development (reading, writing, listening, speaking), but it can also further language proficiency development by providing learners with the opportunity to practice these skills, which is, as recent research suggests, how language is learned (Lightbown & Spada, 2006).

Integration figures prominently in the current discussion of CALL, in writings by Levy and Stockwell (2006), Bax (2003), and others. Scholars debate certain aspects of the notion of integration, but nobody debates that CALL can and should be used in language learning. It is, therefore, imperative that English language teachers integrate information and communication technologies (ICT) in the classroom so that students become proficient in communication not only within the traditional media but also within the framework of modern communication technologies (Lee, 2002; inter alia).

The use of technology in English language teaching and learning can also encourage the development of strategies necessary for modern survival: communication, collaboration, and information gathering and retrieval. Preparing students for the information society should be one of the fundamental aims of today's education (U.S. Department of Education, 2000; OECD, 2000; European Commission, 2001). Ultimately, technologically skilled individuals benefit not only themselves but also their country of residence. Australia, for example, has already recognized the great importance to the country's economy of training individuals to work in an online environment (Australian National Office for the Information Economy, 1998, cited in Davison, 2005).

The use of technology for language learning purposes is not just found in the classroom. Hubbard and Levy (2006a) emphasize the importance of CALL beyond the classroom linkages, such as in the “research and development of a wide range of products including online courses, programs, tutors, and tools” (9) and in the re-purposing of off-the-shelf software.

3. Research shows that technology in learning is not being used to its full potential, and that inadequate teacher training and learner training is one of the main reasons for this.

The importance of basing teacher training on standards and the detriment of not meeting the standards are discussed by Oxford with Jung (2007). They note that technology standards already exist for primary and secondary (P–12) teachers and students in the United States, but indicate that the standards are routinely not being met in settings with English language learners for reasons that include problems with schools of education, teacher educators, and institutional infrastructures. Oxford and Jung conclude with research-based advice aimed at solving this problem.

There are, therefore, significant benefits to language learning that can be achieved by using new technologies and by enabling students to obtain basic survival skills for the modern society and workplace. How many of these potential benefits are actually brought to the students, however, is questionable. Cuban (2001) gives evidence that computers are underused in today’s classrooms. In general education and in language learning alike, Cuban writes that computers are mostly used for teacher preparation, and mainly for word processing. Even where computers are not used as expensive typewriters, and where teachers use them in instruction, traditional teaching techniques prevail. As a result, the technology’s potential for developing critical thinking skills and learner autonomy remains largely unrealised.

Cuban believes that this is not due to limited access to technology. Rather, he suggests that it might be due to the way teachers use the technology, thus implicating teachers’ inadequate training in the area of pedagogical uses of technology. However, teacher training must also include learner training. In other words, teachers who use CALL must be trained to teach learners how to use CALL programs, an issue recently discussed by Hubbard and Levy (2006a). Foundations for learner training in using technology for language acquisition, especially as it relates to developing learner autonomy, can be found in Barrette (2001), Healey (2007), and Hubbard (2004).

This need for increased training and proficiency in the use of technology is echoed by Kessler (2006), who points out that “[t]eachers need to become more proficient in their understanding of CALL methodology, practices, history, and possibility” (p. 35). Along the same lines, Chapelle and Hegelheimer (2004) argue that “the resources offered by today’s technologies for language learners and teachers provide valuable opportunity to rethink and perhaps reinvent what constitutes the knowledge base for L2 teachers ...” (p. 314).

Thus, with the weight of responsibility falling on the teachers and their work, the existence of Technology Standards will play a positive role. Standards can help teachers and teacher

preparation programs move forward and guide them in increasing the quality use of new technologies during instruction in ways that realize technology's potential.

Benefit to the TESOL Profession

TESOL encourages its members to pursue professional development. Many colleagues are still struggling with the use of technology and would find it helpful to have standards that guide them in their efforts. Technology standards are also of benefit to teacher educators in designing curricula to prepare the next generation of teachers, and to administrators to ensure that the use of technology for teaching and learning is moving their institution in the right direction.

Where technology is concerned, there is no turning back. Every current or future stage of English language teaching will include technology in one form or another. As a leader in the field of English language teaching worldwide, TESOL cannot ignore technology or assume that teachers, teacher educators, administrators, and students have all the help they need in making decisions about the optimal use of technology in language learning.

The Technology Standards offer a focus on good language teaching with technology, not on technology itself. This approach keeps teaching and learning at the heart of what happens in ELT, with technology as a means to enable students to achieve their goals. The Standards will serve as a guide as TESOL and ELT professionals strive to create the best possible language learning environments.

In some ways, computer use in language teaching and technological developments has not radically changed language teaching methodology. The Internet has made communication and access to authentic information much easier; however teachers used pen pals before they had access to keypals, print magazines and newspapers before they had online news, and work in groups face to face before they collaborated in virtual worlds. Communicative language teaching certainly did not emerge from drill-and-practice software. Rather, a number of technological developments without adequate attention to pedagogy have encouraged a step backward in terms of language teaching methodology.

The main emphasis of the Technology Standards is to offer pedagogically solid ways of integrating and using technology in teaching methods. Bad teaching will not disappear with the addition of even the most advanced technology; good teaching will benefit from appropriate use of technology to help learners achieve their goals. Ultimately, the effective interpretation of the Standards needs to be pedagogical, not technical.

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TECHNOLOGY STANDARDS FOR LANGUAGE LEARNERS

Goal 1: Language learners demonstrate foundational knowledge and skills in technology for a multilingual world.

STANDARD 1: LANGUAGE LEARNERS DEMONSTRATE BASIC OPERATIONAL SKILLS IN USING VARIOUS TECHNOLOGY TOOLS AND INTERNET BROWSERS.

Performance indicators

- Language learners can perform basic functions on digital devices present in their learning environment: desktop computers, mobile/laptop computers, electronic whiteboards, mobile phones, MP3/video players, etc. (e.g., turning the device on and off; opening, closing and resizing software windows; saving, editing and organizing files and folders; copying, cutting, and pasting elements within a document; recognizing file types; launching and exiting software applications; and similar universal tasks).
- Language learners can perform basic browser functions (e.g., recognize hyperlinks, navigate forward and back, type in an address, use bookmarks, recognize the format of a URL).
- Language learners can recognize the format of an email address.
- Language learners can restart the digital device.
- Language learners recognize when they are and are not online.
- Language learners can use accessibility options as needed (e.g., zoom for visually impaired students, TTY for deaf students, Braille keyboard).

Goal 1 Standard 1 vignette

Adult students improve their literacy in English while learning basic computer operations.

In an Adult Education English language literacy context, students can improve their English skills when learning basic computer operations. Prior to any instruction in this area it is important to assess students' fundamental abilities. This can be performed as a self-assessment, functional quiz, or evaluative observational activity. In the example below, 20 adult students representing 5 different languages are functionally literate in their native language and are enrolled as beginning¹ English language students.

Low-resource, low-access setting: In a classroom with one computer and an overhead projector...

First, students watch the teacher perform basic operating functions while the teacher speaks the commands out loud (see the list below). Each student has a handout of the commands for a visual reference. Next, student volunteers read the items on the list and watch the teacher performing the functions. Finally, students come up in pairs and perform the functions as the teacher calls them out. The students are allowed time to discuss with one another before responding. In the final phase, students volunteer in pairs, alternating between the role of the one who gives the command and the one who performs the task in front of the class.

Turn the computer on

¹ "Beginning" is used as defined in the Educational Functioning Level Descriptors for adult students in **Appendix A**.

Open a word processing window Resize the window. Make it larger. Type your name into the document. Save the document on the desktop. Tell us the file type. Type two sentences about yourself into the document. Cut the top sentence. Paste the sentence at the bottom of the page. Close the document.
Mid-resource, mid-access setting: In a computer lab with no Internet connection... Students build their writing skills when learning basic computer functions. Students first follow the teacher's modeling of the skills discussed above. After the teacher demonstration, they work in pairs giving and carrying out commands for 10 more minutes. The teacher then provides a second demonstration related to basic functions of presentation software. Each pair of students then creates and saves a three-slide presentation. On each of the three slides they write a basic computing function command and illustrate it with clip art.
High-resource, high-access setting: With Internet access for each student in a classroom lab and a video camera... Students benefit from the above modeling and guiding and are also able to utilize online resources that reinforce oral and presentational skills. After achieving familiarity with the basic operating functions and associated language commands described above, students are given 10 minutes in pairs to explore either the word processing or presentation software. They then watch examples of video clips of people describing how to perform basic computer operations (examples include orientation to using a mouse at http://members.pcug.org.au/~cmalot/seniors/mouse.htm, orientation to computers at http://youtube.com/watch?v=QsROH9YfOZk, and organizing files at http://youtube.com/watch?v=IHs8xqvK6Y4). In groups, students choose up to 6 new commands to peer teach through a video clip. The teacher posts the video clips, which then serve as demonstrations for the rest of the class to perform (as in the first teacher demonstration, which was used to introduce the lesson).

STANDARD 2: LANGUAGE LEARNERS ARE ABLE TO USE AVAILABLE INPUT AND OUTPUT DEVICES (E.G., KEYBOARD, MOUSE, PRINTER, HEADSET, MICROPHONE, MEDIA PLAYER, ELECTRONIC WHITEBOARD).

Performance indicators

- Language learners demonstrate understanding of the layout of a standard English keyboard.
- Language learners can change the keyboard layout between different languages as needed.
- Language learners demonstrate understanding of where available media, devices, and other peripherals go (e.g., CDs go into slots or CD drives, jump drives go into USB ports, cables connect only where they fit and work)
- Language learners can operate available peripherals (e.g., printers and scanners) at a basic level.

- Language learners can operate relevant classroom technologies (e.g., data projectors, electronic whiteboards) and personal technologies (PDAs, mobile phones, MP3/video players) at a basic level.

STANDARD 3: LANGUAGE LEARNERS EXERCISE APPROPRIATE CAUTION WHEN USING ONLINE SOURCES AND WHEN ENGAGING IN ELECTRONIC COMMUNICATION.

Performance indicators

- Language learners are cautious when opening attachments and clicking on links in email messages.
- Language learners have security software running on their own computers and other devices and keep them current (e.g., antivirus and firewall software).
- Underage students do not provide personal contact information except as directed by the teacher; adult students exercise caution.
- Language learners exercise caution in computer-mediated communication (CMC) (e.g., log out/off when leaving an email account or a public computer; protect personal information).
- Language learners demonstrate their understanding of the fact that placing any information or content online can become part of a permanent record.
- Language learners identify examples of false and potentially malicious information that exists online.

STANDARD 4: LANGUAGE LEARNERS DEMONSTRATE BASIC COMPETENCE AS USERS OF TECHNOLOGY.

Performance indicators

- Language learners can perform basic troubleshooting operations (e.g., check for power, see if the monitor is turned off, restart safely, check the volume on media).
- Language learners can search for a file.
- Language learners can access a help menu, where available.
- Language learners ask for technical help when appropriate.
- Underage students call an adult when they have found offensive or inappropriate material, turning off the monitor if on a computer; adult students realize that they may need to turn off the computer to exit some Web sites.

Goal 2: Language learners use technology in socially and culturally appropriate, legal, and ethical ways.

STANDARD 1: LANGUAGE LEARNERS UNDERSTAND THAT COMMUNICATION CONVENTIONS DIFFER ACROSS CULTURES, COMMUNITIES, AND CONTEXTS.

Performance indicators

- Language learners identify similarities and differences in local and global communication.

- Language learners demonstrate understanding of multiple ways that CMC can be (mis)interpreted (e.g., using appropriate register, turn-taking, respecting expected length and content of messages, considering literal versus rhetorical meaning).
- Language learners show sensitivity to their use of communication conventions, according to the context (e.g., not using all caps; waiting for lag time in synchronous communication; using turn-taking cues; checking spelling).
- Language learners conform to current social conventions when using technology in communication (e.g., social conventions in the classroom may restrict cell phone use).
- Language learners can identify cultural variables at play in interpreting and responding to a message.

Goal 2 Standard 1 vignette

Adult EFL students learn more about conventions of personal interaction.

In an adult EFL setting in Germany, the instructor would like for his low intermediate² students to learn about conventions of personal interaction in different settings (at a store, at a family dinner, at the bank, etc). The students have expressed an interest in learning more about social conventions to deal with their uncertainty regarding the use of first name vs. last name when meeting adult speakers of the target language. Without any technological resources, the teacher typically might have done the following:

- In pairs, students interact with each other in their LI, taking on different roles.
- Students analyze the different communication choices used.
- Students then engage in role-plays in English.

Low-resource, low-access setting: With access to video or audio recorders but no access to the Internet . . .

- Students record their role-plays.
- Students review their role-plays and analyze the success of the interaction.
- Students edit and re-record as needed, highlighting forms of address.

Mid-resource, mid-access setting: With access to video/audio recorders and the Internet . . .

- Students search for examples of introductions in movie trailers (e.g., <http://www.imdb.com>) and in uploaded videos (e.g., <http://www.YouTube.com>).
- Students work in small groups to analyze the found samples.
- After students record their role-plays and analyze them, they compare them to the found samples.
- Students upload their role-plays.

High-resource, high-access setting: With access to the Internet and video chat with native speakers in the target culture . . .

- Students find online samples, record their own samples, and upload them as in the second example above.
- Students engage in video chat role-plays with native speakers (individuals playing different roles or as part of a tandem learning setting).
- Students analyze their interactions.

² “Low intermediate” is used as defined in the Educational Functioning Level Descriptors for adult students in [Appendix A](#).

STANDARD 2: LANGUAGE LEARNERS DEMONSTRATE RESPECT FOR OTHERS IN THEIR USE OF PRIVATE AND PUBLIC INFORMATION.

Performance indicators

- Language learners demonstrate their understanding that public information in one community may be considered private in other communities.
- Language learners demonstrate their understanding that images may carry different connotations in different communities (e.g., pigs as symbols of prosperity vs. unclean animals).
- Language learners use communications and digital media tools ethically and responsibly (e.g., they don't secretly videotape others and post the videos on public sites).
- Language learners practice legal, responsible, and ethical use of technology systems, information, and software (e.g., they don't make and distribute illegal copies; they document sources as appropriate).
- Language learners accommodate different communication styles online.

Goal 3. Language learners effectively use and critically evaluate technology-based tools as aids in the development of their language learning competence as part of formal instruction and for further learning.

STANDARD 1: LANGUAGE LEARNERS EFFECTIVELY USE AND EVALUATE AVAILABLE TECHNOLOGY-BASED PRODUCTIVITY TOOLS.

Performance indicators

- Language learners use technology-based productivity tools as aids in production (e.g., word processing, presentation software, and Web-design software; associated applications such as spell-checkers and thesauri; templates for preparing presentations, newsletters, and reports; tools to assist in brainstorming and creating graphic organizers).
- Language learners use technology-based productivity tools as aids in comprehension (e.g., translators, electronic dictionaries).
- Language learners apply criteria to evaluate the appropriate use of particular technology tools for specific language learning tasks.
- Language learners use technology-based productivity tools collaboratively and individually in order to enhance their language learning competence.

Goal 3 Standard I vignette

Elementary ESL students improve their reading comprehension with productivity tools.

In an elementary ESL context, starting level³ (beginning) students are working on improving their reading competence by creating and illustrating a story about families. The students have learned basic vocabulary by looking at images of family groups representative of U.S. families and of families from the students' backgrounds (Mexico, Ukraine, and Somalia) from photos that students brought to class and from images the teacher has downloaded from the Internet. Depending on the classroom level of access to technology, students themselves use technology-based productivity tools in various ways to aid both their comprehension and their language production.

Low-resource, low-access setting: With one computer in the classroom, no Internet or projector ...

Students work in small groups of four to create an illustrated story about one family. The teacher first models an example story using photos that the learners have brought to class. As she models, the teacher writes the sentences on an overhead projector so that the students have a visual aid during group work. The teacher then types the story into presentation software (one sentence per slide).

As the students work in small groups, they send one member of the group at a time up to the computer to add an illustration from the group's collection of images. The designated group member dictates to the teacher the sentence that the group has created, while the teacher types it into the presentation software. Each group ends with a story of four pictures and four sentences. The groups each practice reading the final story that they have illustrated by presenting it aloud to the class. The teacher later prints the stories at home, and groups share their illustrated stories with one another to practice reading.

Mid-resource, mid-access setting: With one computer and Internet access for every three students . . .

Students sit in groups of three at the computer. One student is the writer, a different student is the decider, and a third student is the checker. The students open a word-processing file that the teacher has created with keywords and phrases related to the lesson on families. They copy and paste phrases into a slideshow presentation (one sentence per slide) to create sentences like those the teacher has modeled on the projector. The students add several illustrations from the collection of images that the teacher has prepared and saved into a folder on each computer. Each group has the option of locating one image from the Internet to include in their slideshow, and they copy and paste the URL on a final slide. When they are finished, groups pair up, and they take turns reading the story they have created and illustrated for their partner group. The teacher later prints the stories at home, and groups share their illustrated stories with one another to practice reading.

High-resource, high-access setting: With a networked set of laptops, one per learner, and a projector for the teacher . . .

All of the students see a picture of a family group on their individual screens and listen while the teacher names the family members. The teacher models the first sentence: "This is Tanya" and begins the second sentence with "She is... ." The students finish the sentence orally. During this process, the teacher writes the sentences on her computer and sends her

³ "Starting level" is used as defined in the Performance Definitions of the Five Levels of English Language Proficiency for PreK–12 students in [Appendix A](#).

screen to each student's screen. After receiving a story with four sentences, the students turn to a neighbor, and each practices rereading the four-sentence story out loud. Students then continue to work in pairs to copy and paste sentences into a slideshow presentation. The students add illustrations from the collection of images that the teacher has prepared in a folder on each desktop. Each pair chooses and downloads one image from the Internet to include in their slideshow and adds the URL on the final slide. Each pair's final illustrated story is, in turn, presented to the whole class for an oral presentation. The students can use the stories, which the teacher will print at home, for review reading in class the next day.

STANDARD 2: LANGUAGE LEARNERS APPROPRIATELY USE AND EVALUATE AVAILABLE TECHNOLOGY-BASED LANGUAGE SKILL-BUILDING TOOLS.

Performance indicators

- Language learners employ age- and proficiency-appropriate vocabulary and pragmatics/body language during collaborative work that uses technology.
- Language learners demonstrate that they know when to ask for help in order to achieve their language learning objectives when using technology.
- Language learners decide when to use language software and devices as available and appropriate to enhance specific skill areas (e.g., vocabulary, grammar, and pronunciation practice software; MP3 recorders).
- Language learners critically evaluate Internet resources as available and appropriate to enhance their language learning (e.g., Web-based listening exercises, online sentence jumbles).

STANDARD 3: LANGUAGE LEARNERS APPROPRIATELY USE AND EVALUATE AVAILABLE TECHNOLOGY-BASED TOOLS FOR COMMUNICATION AND COLLABORATION.

Performance indicators

- Language learners communicate in appropriate ways with those from other cultures and communities using digital tools.
- Language learners actively encourage others to fully participate in conversations that use technology-based tools in a language-learning context (e.g., simulations, mobile phones, CMC tools).
- Language learners use criteria to determine which technology tools function best as a means of collaborating with others for specific types of language learning (e.g., comment function in word processors, wikis, interactive whiteboards, CMC tools).
- Language learners use and critically evaluate the use of particular digital resources to communicate ideas effectively to peers or a wider audience (e.g., blogs, podcasts, movie making tools).
- Language learners use available technology individually or collaboratively to create content to share with peers or a wider audience, online or offline.

STANDARD 4: LANGUAGE LEARNERS USE AND EVALUATE AVAILABLE TECHNOLOGY-BASED RESEARCH TOOLS APPROPRIATELY.

Performance indicators

- Language learners employ technology to locate and collect information from a variety of sources.
- Language learners employ strategies to evaluate online information.
- Language learners document source material appropriately.
- Language learners determine which technology tools to use to organize information from research (e.g., moving information around in the word processor, using a database or spreadsheet).

STANDARD 5: LANGUAGE LEARNERS RECOGNIZE THE VALUE OF TECHNOLOGY TO SUPPORT AUTONOMY, LIFELONG LEARNING, CREATIVITY, METACOGNITION, COLLABORATION, PERSONAL PURSUITS, AND PRODUCTIVITY.

Performance indicators

- Language learners select the most appropriate available technology for independent language learning and can provide reasons for their choices.
- Language learners demonstrate the ability to set language learning goals and objectives that employ technology, with a teacher's support or independently.
- Language learners can use technology to monitor their progress (e.g., record-keeping within programs, electronic portfolios), with a teacher's support or independently.
- Language learners can express themselves using technology (e.g., creating digital media as works of art).
- Language learners provide reasons for the value of technology in maintaining communication for personal and professional purposes and having access to authentic material that supports their language learning.
- Language learners use technology to work in English more effectively (e.g., using an electronic dictionary when it is more efficient than using a paper dictionary).

TECHNOLOGY STANDARDS FOR LANGUAGE TEACHERS

Goal 1. Language teachers acquire and maintain foundational knowledge and skills in technology for professional purposes.

STANDARD 1: LANGUAGE TEACHERS DEMONSTRATE KNOWLEDGE AND SKILLS IN BASIC TECHNOLOGICAL CONCEPTS AND OPERATIONAL COMPETENCE, MEETING OR EXCEEDING TESOL TECHNOLOGY STANDARDS FOR STUDENTS IN WHATEVER SITUATION THEY TEACH.

Performance indicators

- Language teachers perform basic functions with available digital devices in order to accomplish instructional and organizational goals (e.g., turning the device on and off; opening, closing and resizing software windows; saving, editing, and organizing files and folders; copying, cutting, and pasting elements within a document; recognizing file times; launching and exiting software applications; and similar universal tasks).
- Language teachers prepare instructional materials for students using basic technology tools (e.g., word-processing software, presentation software, and software that creates Internet resources).
- Language teachers exercise appropriate caution when using online sources and when engaging in electronic communication. (See Student Standards Goal 1, Standard 3 for some examples.)

STANDARD 2: LANGUAGE TEACHERS DEMONSTRATE AN UNDERSTANDING OF A WIDE RANGE OF TECHNOLOGY SUPPORTS FOR LANGUAGE LEARNING AND OPTIONS FOR USING THEM IN A GIVEN SETTING.

Performance indicators

- Language teachers identify appropriate technologies to support a range of instructional objectives.
- Language teachers use evaluation tools to analyze the appropriateness of specific technology options.
- Language teachers share information about available technology with colleagues.
- Language teachers use online technology as available to deliver instructional or support material.
- Language teachers locate and can adapt a variety of digital resources.

STANDARD 3: LANGUAGE TEACHERS ACTIVELY STRIVE TO EXPAND THEIR SKILL AND KNOWLEDGE BASE TO EVALUATE, ADOPT, AND ADAPT EMERGING TECHNOLOGIES THROUGHOUT THEIR CAREERS.

Performance indicators

- Language teachers utilize technology tools to expand upon a conventional activity.
- Language teachers keep up with information through a variety of sources (e.g., books, journals, mailing lists, conventions).
- Language teachers participate in a relevant community of practice.
- Language teachers explore the possibilities inherent in emerging technologies with a critical eye.

Goal 1 Standard 3 vignette

An EFL teacher wants to keep abreast of developments in the area of technology and language learning.

Low-resource, low-access setting: With a computer but no projector or Internet in the classroom . . .

James works at a school without Internet access. He has a computer in his class but neither a projector nor an Internet connection. In order to remain abreast of developments in the area of technology and language learning and to find ways to make the most of using the technology he has available, he tries to attend conferences whenever possible. Funding for international conferences is difficult, however, and local conferences offer few new ideas. James compensates for his infrequent travel by participating in international online communities. He often goes to Internet cafés or local libraries in order to access the online discussions of his community via email.

His international colleagues discuss technologies he might not be able to use, but they are always willing to help him with ideas. James has been very interested in integrating podcasts in his courses, because he believes the authentic listening opportunity would be beneficial to his language classes. James spent time on the Internet at his local library to find a suitable podcast for his class. He then downloaded it on his memory stick. James prepared listening tasks based on his chosen podcast and then had the students listen to it and complete the tasks. James used his class computer and speakers to play the podcast.

Mid resource, mid-access setting: With computer lab and Internet, but low bandwidth and unreliable access. . .

Maria works at a school where she has a computer lab and Internet access but the Internet connection has low bandwidth and is often unreliable. She is very keen to stay in touch with developments especially because there are not many experts who live near her. Therefore, she values her membership in relevant online communities, which help her keep in touch with developments in the field of language learning and teaching. She is a member of a number of online communities and associations, but she interacts with the communities through email discussion lists because of her low bandwidth Internet connection.

Through her online colleagues she learns about developments in technology, but she always has to assess the relevance of new technologies in her setting and their practicality, effectiveness, and overall value for her teaching situation. She explores technologies that seem promising and are recommended by her colleagues, by reevaluating them in relation to her own context.

Maria has begun to evaluate podcasts and has decided that she would like to implement them with her students in the school computer lab. Having to deal with the problem of bandwidth, Maria decided to create a PodQuest by using podcasts that she downloaded beforehand and saved on the computer hard disk.

High resource, high access setting; “expert” level: With lab available and computers in each classroom, high-speed Internet . . .

Adrian works in an EFL school with a computer lab and computers in each classroom.

He has his classes in the computer lab once or twice a week, and he always incorporates the technology in his main classroom (computer, Internet access, projector, printer, scanner) in his lessons.

Adrian is a member of a number of online communities of English language teachers who are involved with and interested in technology. He participates in these online communities both through emails and synchronous video- or audioconferencing. He is regularly involved in interesting discussions about evaluating various emerging technologies in language learning. He often carries out online research about those technologies that seem promising for his own context and tries to find out more about their implementation in language learning and teaching. If they seem promising, he tries to access the specific technologies in order to try them out by using them with his online community, colleagues from his local association, or colleagues at his school.

He regularly briefs his colleagues on developments, and if he decides to try out a particular technology, he presents it and discusses it with his colleagues. In situations where a specific technology seems promising for his own context, he prepares a carefully designed trial of implementation with his students. In such a case, all the factors relevant to his context must be considered. These could be training students, obtaining possible permissions, and considering time requirements (class length and syllabus fit).

Recently Adrian has been experimenting with PodQuests as a way to help students achieve the most out of podcasts. He prepares PodQuests so students can carry them out while in the computer lab. Adrian evaluates his implementation and also asks his students for their feedback. If his initial implementation brings about positive results and evaluations, and the technology fits the needs of the students and adds value to their learning situation, he will continue using it.

Sometimes Adrian decides not to implement technology he has tried out. This might happen because it could not satisfy his teaching objectives, or because he decides the new technology does not bring any added value to his classes compared to technology he is already using.

STANDARD 4: LANGUAGE TEACHERS USE TECHNOLOGY IN SOCIALLY AND CULTURALLY APPROPRIATE, LEGAL, AND ETHICAL WAYS.

Performance indicators

- Language teachers demonstrate sensitivity to the similarities and differences in communication conventions across cultures, communities, and contexts.
- Language teachers show an awareness of their role as models, demonstrating respect for others in their use of public and private information.
- Language teachers show awareness and understanding when approaching culturally sensitive topics and offer students alternatives.
- Language teachers conform to local legal requirements regarding the privacy of students' personal information.
- Language teachers conform to local legal requirements regarding accessibility

- Language teachers conform to local legal requirements regarding fair use and copyright.
- Language teachers follow local guidelines regarding the use of human subjects for research.
- Language teachers demonstrate awareness that electronic communication is not secure and private, and that in some localities, email may be subject to “open records” laws.
- Language teachers seek help in identifying and implementing solutions related to legal requirements.
- Language teachers protect student privacy (e.g., not inappropriately putting student email addresses, biodata, or photos online; fully informing students about public sharing of blogs and Web sites; using password-protected sites when possible).
- Language teachers respect student ownership of their own work (e.g., not sharing student work inappropriately; not requiring students to post their work publicly).

Goal 2. Language teachers integrate pedagogical knowledge and skills with technology to enhance language teaching and learning.

STANDARD 1: LANGUAGE TEACHERS IDENTIFY AND EVALUATE TECHNOLOGICAL RESOURCES AND ENVIRONMENTS FOR SUITABILITY TO THEIR TEACHING CONTEXT.

Performance indicators

- Language teachers identify the technological resources (e.g., hardware, communication technologies, digital material, courseware) and limitations of the current teaching environment.
- Language teachers identify appropriate technology environments (e.g., lab, one-computer class, online, independent use) to meet specific learning/teaching goals.
- Language teachers evaluate technology environments for alignment with the goals of the class.
- Language teachers evaluate technological resources for alignment with the needs and abilities of the students.

STANDARD 2: LANGUAGE TEACHERS COHERENTLY INTEGRATE TECHNOLOGY INTO THEIR PEDAGOGICAL APPROACHES.

Performance indicators

- Language teachers demonstrate understanding of their own teaching styles.
- Language teachers review personal pedagogical approaches in order to use technology to support current teaching styles.
- Language teachers demonstrate their understanding of the potential and limitations in technology.
- Language teachers embed technology into teaching rather than making it an add-on.
- Language teachers engage regularly in professional development related to technology use.
- Language teachers evaluate their use of technology in teaching.

Performance indicators, expert level of technology

- Language teachers work around the limitations in available technology to achieve instructional goals.
- Language teachers support peers in their professional development with technology. (Informal support may be unpaid; formal support should be paid.)

Goal 2 Standard 2 vignette

A secondary-level ESL teacher in the United States wants to encourage students to be more active and to interact in class.

In a tenth-grade ESL class in a United States high school, a class of recently arrived (1–2 years) Spanish-speaking students at the developing level⁴ of English proficiency are enrolled in an ESL Language Arts class. The teacher is having the students participate in literature response groups and would like to ensure that they discuss ideas with one another rather than simply listen to her comments (adapted from the **ESL Standards for PreK–12 Students, 1997**, pp. 122–123). In the original classroom scenario, the language teacher integrates the following strategies (without technology):

- Students sit in inner and outer circles. The inner circle discusses a poem, and the outer circle takes notes on their peers' interactions.
- The teacher facilitates a reflective discussion with the students about which observations represented positive ways to participate in group discussions.

Low-resource, low-access setting: With Internet access outside the classroom . . .

The language teacher adds several layers to this lesson:

- The teacher uses the Internet to find a transcript from an online discussion group in which native English-speaking peers have discussed a poem. Her ESL students receive copies of the transcript, and they underline and discuss the different ways of exchanging ideas: agreeing, disagreeing, adding comments, etc.

Mid-resource, mid-access setting: With one computer and a projector in the classroom . . .

The teacher can add more features:

- The teacher presents a prereading activity with the projector.
- Students discuss the ideas before reading the poem.
- Students observe and take notes on a native-speaker interaction from a DVD of the movie *Dead Poets Society*.

High-resource, high-access setting: With the ESL students in a networked computer lab . . .

With a computer and earphones for each student, the language teacher further adapts this lesson:

- Before discussing the poem orally in class, the ESL students log onto the class blog that the teacher has created. The blog includes a print version (with hyperlinked definitions of difficult vocabulary) and an audio file of the poem that students can read and listen to multiple times at their own pace.
- Students use an online chat room to share their comments about the poem. After 15 minutes of discussion, the language teacher asks students to pair up and scroll back through the online transcript to prepare a list of two comments with which they agree and two comments with which they disagree.
- The students then use these prepared comments to continue the online chat in an

⁴ “Developing level” is used as defined in the Performance Definitions of the Five Levels of English Language Proficiency for PreK–12 students in **Appendix A**.

oral, face-to-face format.

- At the end of class, the teacher saves the online chat transcript into her files so that she can use it several months later to help students monitor their language progress.

STANDARD 3: LANGUAGE TEACHERS DESIGN AND MANAGE LANGUAGE LEARNING ACTIVITIES AND TASKS USING TECHNOLOGY APPROPRIATELY TO MEET CURRICULAR GOALS AND OBJECTIVES.

Performance indicators

- Language teachers demonstrate familiarity with a variety of technology-based options.
- Language teachers choose a technology environment that is aligned with the goals of the class.
- Language teachers choose technology that is aligned with needs and abilities of the students (e.g., language learning–focused software, productivity tools, content tools).
- Language teachers demonstrate awareness of students’ level of digital competence.
- Language teachers ensure that students understand how to use the technology to meet instructional goals (e.g., teach students how to evaluate online resources).
- Language teachers enable students to think critically about their use of technology in an age-appropriate manner.

Performance indicators, expert level of technology

- Language teachers adapt technology-based activities and tasks to align with the goals of the class, and with the needs and abilities of the students.
- Language teachers create an appropriate technology environment to meet specific teaching and learning goals.
- Language teachers operate with an understanding of the underlying structure of the technology in use.
- Language teachers demonstrate the ability to draw on a wide range of functions in technological resources.
- Language teachers identify more than one approach to achieve an objective (e.g., a backup plan for when the technology is not working).

Goal 2 Standard 3 vignette

An intensive English program (IEP) teacher wants students to interact with U.S. informants about their work.

In an IEP integrated skills class at a U.S. university, Claire would like for her small class of low advanced⁵ students to interact with U.S. cultural informants and learn about their typical workdays. Informants might include doctors, janitors, and technicians. The lesson consists of a preliminary review of materials on typical workdays, allowing students to explore it and prepare questions for the informant. Students then meet with the informant. In a nontechnology class, this could only be a face-to-face meeting with the informant. The final product of the task is an entry in the student's journal of what she learned. If the student has access to technology, the informant does not have to be physically present in the classroom.

Limited technology setting: In a classroom with no computer or AV facilities . . .

The students begin by reading a short piece describing the workdays of two or three people with different jobs, none of which is the same as the informant (examples at <http://science.education.nih.gov/LifeWorks.nsf/Interviews>). Following the reading, the instructor brainstorms a list of questions with the class and writes several examples on the board; each student then selects or is assigned a question to ask the informant. At the prearranged time, the instructor takes out her cell phone and calls the informant. Once the informant answers, she puts the phone on its "speakerphone" setting so the students can interact with the informant through this medium. Following the question-and-answer session, students are assigned their homework—to write the answers to their specific question and at least three other interesting points they learned.

Medium level of technology use: With a single computer, data projector, speakers, and Internet access point in the classroom . . .

In place of reading, students watch a video of Nico's typical workday (http://www.youtube.com/watch?v=99IYG_xsAYA). The brainstorming of questions is done in Word on the computer and projected to the room. The call is made through Skype (<http://www.skype.com>) and played through the room speakers for clearer sound. Homework is the same as above.

High level of technology use: With Internet access for each student outside of the classroom . . .

Students are asked to go to <http://science.education.nih.gov/LifeWorks.nsf/Interviews> and select three interviews to review. They then summarize key points they learned and post related questions on the class discussion board. Class is as in the previous scenario, where students interact with the informant on Skype. For homework students post the answers to their questions and three other interesting points they learned on their blogs.

STANDARD 4: LANGUAGE TEACHERS USE RELEVANT RESEARCH FINDINGS TO INFORM THE PLANNING OF LANGUAGE LEARNING ACTIVITIES AND TASKS THAT INVOLVE TECHNOLOGY.

Performance indicators

- Language teachers demonstrate familiarity with suggestions from research for classroom practice using technology.

⁵ "Low advanced" is used as defined in the Educational Functioning Level Descriptors for adult students in [Appendix A](#).

- Language teachers use a variety of avenues for getting information about research related to technology use (e.g., communities of practice, conferences).
- Language teachers demonstrate understanding of the temporal nature of research findings related to technology use (i.e., that technology changes over time, so older research may not be applicable to current settings).
- Language teachers demonstrate awareness of multiple research sources and perspectives that inform technology use.
- Language teachers discern which findings about technology use are most appropriate for their situation.
- Language teachers share relevant research findings about technology use with others.
- Language teachers identify the context and limitations of research about technology use and do not apply findings inappropriately.

Performance indicators, expert level of technology

- Language teachers demonstrate their understanding of relevant research findings related to technology use for language learning.
- Language teachers identify gaps in current research about technology use.
- Language teachers help others recognize the context and limitations of research about technology use.
- Language teachers produce and disseminate research related to technology use.

Goal 3. Language teachers apply technology in record-keeping, feedback, and assessment.

STANDARD 1: LANGUAGE TEACHERS EVALUATE AND IMPLEMENT RELEVANT TECHNOLOGY TO AID IN EFFECTIVE LEARNER ASSESSMENT.

Performance indicators

- Language teachers demonstrate familiarity with a variety of forms of assessment that employ technology.
- Language teachers employ appropriate record-keeping tools and techniques (e.g., software-based classroom management tools, electronic grade books, reports to stakeholders).

Performance indicators, expert level of technology

- Language teachers use computer-based diagnostic, formative, and summative testing where feasible.
- Language teachers use technology to illustrate learner progress (e.g., graphic representations of scores over time, revision history).
- Language teachers provide feedback through digital file exchange (e.g., review tools in writing; annotated comments in speaking).

Goal 3 Standard I vignette

A teacher in an online setting wants students to learn about U.S. culture and prepare portfolios for evaluation.

Through the use of a course management system (CMS), students gain exposure to authentic language materials, including audio and video news materials as well as varied contact with classmates, computer-based materials, and the language teacher. Such interaction can allow for synchronous and asynchronous communication. This scenario requires a minimum of Internet access in order to participate.

This scenario depicts an advanced level⁶ university class. The class is built around theme- and project-based instruction principles and focused on the concept of “U.S. culture.” Students devote time each week to reading and listening to Web-based materials that inform them about different aspects of U.S. culture. Armed with this knowledge, the learners interact with their peers and discuss these concepts. They produce individual and collaborative projects and explore the language and thematic concepts through the construction of language and content.

This particular task requires that students work in pairs or small groups. They select a subtopic related to U.S. culture and collect artifacts to create a document that highlights features of this cultural characteristic. Artifacts can include text, images, videos, and audio. The documents can be constructed as a Web page, word-processing document, movie, slideshow, or presentation. The students share the completed materials, allowing for further language exchange during the presentation and valuable feedback.

The digital exchange of information provides instructors with archived portfolios of student work that assist in record-keeping, grading, and assessment.

Medium level of technology use: With student Internet access outside the classroom . .

Students in different locations upload their final projects for others to view and assess asynchronously at their convenience. Peer feedback provided through online discussion forums allows students to gain insight into their linguistic strengths and weaknesses, as well as the effectiveness of the content and artifacts they presented. Ideally, a text chat tool offers formative feedback. Students can use discussion forums to share any feedback that may benefit others. The instructor can use CMS personal messages and the online grade book to offer summative feedback to students.

High level of technology use: With student Internet access and a Webcam within a classroom lab . . .

Students in a shared location use desktop video conferencing to present their final projects to each other in person while the instructor watches from a desktop computer. Peer feedback in the local context allows students to gain insight into their linguistic strengths and weaknesses, as well as the effectiveness of the content and artifacts they presented and their body language. The video conferencing tool and discussion forums can provide formative feedback. Students can use discussion forums to share any feedback that may benefit others. The instructor can use CMS personal

⁶ “Advanced” is used as defined in the Educational Functioning Level Descriptors for adult students in Appendix A.

messages and the online grade book to offer summative feedback to students.

STANDARD 2: LANGUAGE TEACHERS USE TECHNOLOGICAL RESOURCES TO COLLECT AND ANALYZE INFORMATION IN ORDER TO ENHANCE LANGUAGE INSTRUCTION AND LEARNING.

Performance indicators

- Language teachers demonstrate familiarity with research-based principles related to technology-enhanced assessment.
- Language teachers use technology-enhanced assessment results to plan instruction.
- Language teachers interpret computer-based test scores for stakeholders (e.g., TOEFL, other standardized tests).
- Language teachers elicit student feedback in order to improve teacher use of technology.

Performance indicators, expert level of technology

- Language teachers apply research findings related to technology-enhanced assessment.
- Language teachers collect student output for analysis (e.g., concordancer to analyze lexical complexity, chat logs).
- Language teachers use digital resources to document teaching for further analysis (e.g., digital recording of lectures and class interactions, digital logs of interactions).

STANDARD 3: LANGUAGE TEACHERS EVALUATE THE EFFECTIVENESS OF SPECIFIC STUDENT USES OF TECHNOLOGY TO ENHANCE TEACHING AND LEARNING.

Performance indicators

- Language teachers use appropriate procedures for evaluating student use of technology (e.g., rubrics, checklists, matrices—which may evaluate enjoyment).
- Language teachers elicit student feedback in order to improve student use of technology.

Performance indicators, expert level of technology

- Language teachers develop and share procedures for evaluating student use of technology.
- Language teachers examine student outcomes that result from use of technology (e.g., examining chat logs for more complex language).

Goal 4. Language teachers use technology to improve communication, collaboration, and efficiency.

STANDARD 1: LANGUAGE TEACHERS USE COMMUNICATION TECHNOLOGIES TO MAINTAIN EFFECTIVE CONTACT AND COLLABORATION WITH PEERS, STUDENTS, ADMINISTRATION, AND OTHER STAKEHOLDERS.

Performance indicators

- Language teachers draw on resources (lesson plans and teaching ideas) for language teachers that are posted online.

- Language teachers implement lesson plans obtained from other teachers via the Internet.
- Teachers belong to online communities (e.g., mailing lists, blogs, wikis, podcasts) with other language teachers.
- Language teachers share their email address with students and peers.

Performance indicators, expert level of technology

- Language teachers maintain an electronic forum (e.g., Web page, blog) to post information for students about the class.
- Language teachers view and comment on students' electronic work (e.g., electronic portfolios, project work, Web sites).
- Language teachers advise administration on the use of online technology to improve communication.
- Language teachers share instructional material digitally.

STANDARD 2: LANGUAGE TEACHERS REGULARLY REFLECT ON THE INTERSECTION OF PROFESSIONAL PRACTICE AND TECHNOLOGICAL DEVELOPMENTS SO THAT THEY CAN MAKE INFORMED DECISIONS REGARDING THE USE OF TECHNOLOGY TO SUPPORT LANGUAGE LEARNING AND COMMUNICATION.

Performance indicators

- Language teachers take advantage of professional development related to technology integration (e.g., conferences, journals, mailing lists, communities of practice).
- Language teachers select technology resources that promote appropriate language use.
- Language teachers demonstrate awareness of multiple sources and perspectives that inform technology use.
- Language teachers discern which findings are most appropriate for their situation.

Performance indicators, expert level of technology

- Language teachers stay informed about how to use new technologies for instructional and professional purposes (e.g., podcasts for listening and speaking, blogs for writing and reading).
- Language teachers integrate technology in innovative ways.
- Language teachers engage in research (including classroom-based) and share the results.
- Language teachers advise decision-makers about appropriate technology resources and environments.

STANDARD 3: LANGUAGE TEACHERS APPLY TECHNOLOGY TO IMPROVE EFFICIENCY IN PREPARING FOR CLASS, GRADING, AND MAINTAINING RECORDS.

Performance indicators

- Language teachers use electronic resources to locate additional materials for lesson planning and classroom use.
- Language teachers demonstrate understanding of various methods of providing electronic feedback on student work (e.g., email, insert comments).

- Language teachers have a system to collect, organize, and retrieve material and student data.

Performance indicators, expert level of technology

- Language teachers maintain a resource that allows students to locate and retrieve material.
- Language teachers use electronic methods, as appropriate, for formative and summative assessment.
- Language teachers encourage students to use electronic methods to document their own progress.

Goal 4 Standard 3 vignette

A secondary-level ESL teacher in the United States wants to improve his grading and record-keeping methods.

In a United States middle school, a sixth-grade group of Spanish-speaking students at the expanding level⁷ of English proficiency is taking an ESL Language Arts class. As part of his formative assessment plan, their language teacher would like to ensure that each of the students is involved in ongoing self-assessment. Typically, the teacher creates a system in which students collect their work in folders (learner logs, drafts of essays with teacher and peer comments, vocabulary notebooks, double-entry journals, and self-reviews of essays) so that they can create end-of-semester portfolios to track their language growth, but he has found that his ESL students are often overwhelmed by the amount of paper that accumulates over time and therefore do not maximize use of their previous work. He wants to use technology to improve his efficiency in grading and maintaining records for purposes of formative assessment.

Limited technology use: With a single computer outside of class, but no in-class computers . . .

The teacher learns how to use a CMS to maintain his grade book. He codes the students' names with numbers and posts their grades on a weekly basis. The teacher makes weekly comments on each student's areas of language improvement and areas in need of improvement and keeps the comments organized into folders for easy retrieval. He makes a compilation of these comments available to students at the end of the semester during one-on-one conferencing about their language progress. The written comments provide a visual format that helps his low intermediate ESL students follow the conversation. This process helps them self-assess their growth over time and set realistic language learning goals for the next semester.

Medium level of technology use: With a networked computer lab available by reservation for one hour once a week . . .

To help his students see their language growth in writing fluency, he asks them to write for 30 minutes every other week using a variety of prompts (visual, story starters, engaging questions, etc.). His students then use the "word count" tool to document the number of words they have written. Each student keeps a spreadsheet that tracks the number of words they write each time across the semester. The spreadsheet allows for a visually appealing chart that shows a progress line of growth in the total number of words students can write in a 30-minute period.

⁷ "Expanding level" is used as defined in the Performance Definitions of the Five Levels of English Language Proficiency for PreK–12 students in [Appendix A](#).

To help his students revise their essays, he uses reviewing tools such as marginal comments and track changes on students' essays. In the computer lab, they revise their essays based on the comments.

The teacher maintains a class Web site using a CMS that allows him to centralize the collection of his students' fluency spreadsheets and their reviewed essays.

High level of technology use: With a networked computer for each student . . .

The teacher maintains a class blog so that students can locate course materials online for reference and for document collection

The teacher has his students create electronic portfolios that document their language progress across the semester, in which they include the spreadsheets documenting word count from the previous example. The portfolios ensure that students are using English in multiple genres (narrative and persuasive essays, book summaries, analyses, etc.) and in multiple modes (hyperlinked writing, multimedia projects, and audio files).

GLOSSARY

Keywords	Description/Definition
Accessibility	A quality in a Web site, program, or hardware tool that makes it usable by those with physical disabilities, such as deafness, weak vision, or limited movement
Application	A software program, including language software, Web browsers, word processors, and games
Autonomy	Self-motivation and independence in learning (not necessarily solitary study)
Blog	A Web log; a kind of diary online, where postings are in chronological order, but where other users can add comments
CALL	Computer-assisted language learning; the use of computers and other digital technology to enhance language instruction
Communication styles	Modes of communicating with others, such as informal, business-formal, abbreviated (as with chat); always culture-specific
Communication technologies	Tools such as email, Instant Messenger, chat, voicemail, Web logs (blogs), podcasts, and other ways of interacting with others
Community of practice	A group of people linked by common interests, including work, and who learn from each other in a collaborative way
Computer-mediated communication (CMC)	Any communication that is accommodated by the use of computers or computer networks. CMC includes text chat, voice chat, email, discussion boards, audio and/or video conferencing.
Course management system (CMS)	A software system designed to help teachers with online and hybrid course administration and delivery. These systems typically include discussion boards, text chat, email, grade books and quizzes.
Courseware	Software designed to serve as the core “text” or significant portion of a course; sometimes used to refer to any software designed for instructional purposes
Curriculum	Objectives and learning outcomes for a series of classes or courses leading to a learning goal that is larger than what is covered in a single class
Digital	Available in electronic form
Digital competence	Knowledge about creating, modifying, and managing digital information
Digital file exchange	Moving digital information from one format to another or one location to another

Digital literacy	Basic understanding of and ability with computer functions, including Internet use
Discussion board	A form of asynchronous computer-mediated communication used for maintaining extensive discussions; also referred to as a bulletin board or discussion forum
Effectiveness (of specific student uses of technology)	How well technology works in achieving educational outcomes; determined based on the instructor's goals and reasons for using technology
Electronic feedback	Responses submitted or added to existing work through the use of technology
Electronic portfolio	A collection of work maintained in digital form
Embedded technology	Computer chips and communication devices that are part of devices other than standalone computers, such as in an interactive whiteboard
Emerging technologies	New ways of using digital devices and media that have not yet been fully developed
English as a foreign language (EFL)	English language taught in countries where English is not generally spoken as a first language and not used routinely by a substantial portion of the population. Learners will have limited access to speakers of the language.
English as a second language (ESL)	English language taught in countries where English is spoken as a common language by a substantial portion of the population, allowing learners routine access to speakers of the language in a range of settings
English for specific purposes (ESP)	English instruction focused on a particular academic discipline or workplace need, e.g., English for business or English for medical transcription
English language learner	Used in this document to refer to a learner of English in either an ESL or an EFL context. The term is commonly used to refer to students in U.S. elementary and secondary schools whose first language is not English.
Formal instruction	Used in this document to address face-to-face instruction as well as online instruction
Formative assessment	Ongoing evaluation of progress, often used to help learners understand what else they need to know. (In contrast, see summative assessment.)
Foundational knowledge (and skills)	Basic information needed in order to perform all other tasks
Hardware	Physical equipment, such as a computer, projector, monitor
Hybrid course	A course taught using a combination of face-to-

	face and online instruction
In-service	Currently teaching (e.g., courses or workshops for those who are practicing teachers)
Intensive English program (IEP)	Language instructional program for adult students learning English, generally in an academic setting
Interactive whiteboard	A whiteboard linked to a computer that serves as a computer input device (e.g., the teacher projecting a Web page onto the whiteboard, annotating it, and following links)
International Society for Technology in Education (ISTE)	Organization that publishes journals and standards for technology use in the United States
Internet resources	Web, email, podcasts, and related technologies
Language learning competence	Understanding how to learn a language
Lesson planning	Making decisions about what to do in a specific class lesson in order to achieve learning objectives
Levels of language proficiency	See Appendix A for descriptors.
Lifelong learning	Continuing to study topics of interest after completing formal schooling
Mailing List	A way to send a single message to a group of people simultaneously, usually via email
Memory Stick	Small storage device, usually USB format; also known as flash drive, USB drive, thumb drive, pen drive
Mobile devices	Portable hardware such as a personal digital assistant (PDA) (e.g., Palm Pilot), cell phone, MP3 player, laptop computer
Online	Connected to the Internet
Pedagogical approach	Teaching style based on awareness of methodology, research, and theory
Peripherals	Equipment attached to a computer (e.g., joystick, external drive, memory stick)
Personal digital assistant (PDA)	A portable device used to record addresses, appointments, and notes (e.g., Palm Pilot)
PodQuest	Learners use audio information from podcasts to answer questions and create a group project (which may also be a podcast).
Preservice	Learning to teach (e.g., courses or workshops for education students or teacher candidates)
Productivity tools	Software used for office tasks, such as a word processor, presentation tool, spreadsheet, database
Professional practice	How people do their jobs according to accepted norms and standards of the field
Proficiency	See Appendix A for descriptors.
Register	Linguistic characteristics such as vocabulary and level of formality typical of groups of individuals

Research perspectives	Ways of conceptualizing how to ask questions and look for answers in research. Large categories are qualitative and quantitative; others include ethnography and critical theory.
Resources	Materials used for teaching and/or learning (e.g., worksheets, computers, books, software, markers). See also Internet resources.
Software	Programs that enable computers to perform specific tasks
Stakeholders	People who have an interest in an educational outcome such as teachers, parents, students, administrators and community members.
Strategy	Ways in which learners approach a given task; often divided into cognitive, metacognitive, and socioaffective
Summative assessment	Final evaluation (in contrast, see formative assessment)
Task	Activity with an end goal
Technological resources	Different kinds of electronic equipment and media that may be used for language instruction, including hardware, communication technologies, digital material, courseware
Technology	Systems that centrally involve computer chips, digital applications, and networks in all of their forms
Technology environments	The various contexts in which technology may be used for instruction, including computer lab, online, independent use, one-computer class
Technology integration	Using technology in the classroom in a way that is meaningful and connected to the goals of the class
Technology-based activities	Learning-related tasks that use technology as a fundamental component
Technology-based language skill-building tools	Resources, such as programs and Web sites, that are designed to enhance specific areas of language learning, such as reading, writing, listening, speaking, grammar, and pronunciation
Technology-based productivity tools	See Productivity tools.
Technology-based research tools	Software and hardware used to collect, analyze, and present data and research findings
Turn-taking	Cooperative behavior in the classroom or online where one person stops and another starts talking
USB	Universal serial bus; a type of connector typically used with flash drives and other peripherals
Wiki	A Web site designed to be easily edited through a browser by anyone given access to it; typically used for collaborative purposes (e.g., Wikipedia)

APPENDIX A: ENGLISH PROFICIENCY DEFINITIONS

PreK–12

Performance Definitions of the Five Levels of English Language Proficiency

Level 1 Starting	Level 2 Emerging	Level 3 Developing	Level 4 Expanding	Level 5 Bridging
English language learners can understand and use ...				
... language to communicate with others around basic concrete needs.	... language to draw on simple and routine experiences to communicate with others.	... language to communicate with others on familiar matters regularly encountered.	... language in both concrete and abstract situations and apply language to new experiences.	... a wide range of longer oral and written texts and recognize implicit meaning.
... high-frequency words and memorized chunks of language.	... high-frequency and some general academic vocabulary and expressions.	... general and some specialized academic vocabulary and expressions.	... specialized and some technical academic vocabulary and expressions.	... technical academic vocabulary and expressions.
... words, phrases, or chunks of language.	... phrases or short sentences in oral or written communication.	... expanded sentences in oral or written communication.	... a variety of sentence lengths of varying linguistic complexity in oral and written communication.	... a variety of sentence lengths of varying linguistic complexity in extended oral or written discourse.
... pictorial, graphic, or nonverbal representation of language.	... oral or written language, making errors that often impede the meaning of the communication.	... oral or written language, making errors that may impede the communication but retain much of its meaning.	... oral or written language, making minimal errors that do not impede the overall meaning of the communication.	... oral or written language approaching comparability to that of English-proficient peers.

From *PreK-12 English Language Proficiency Standards* (TESOL, 2006, p. 39).

Adult

Educational Functioning Level Descriptors and Outcome Measure Definitions for English as a Second Language (from *Standards for Adult Education ESL Programs*, pp. 151–156, TESOL, 2003).

Appendix

Educational Functioning Level Descriptors and Outcome Measure Definitions for English as a Second Language

Literacy Level

BEGINNING ESL LITERACY

Test benchmark:

CASAS (Life Skills): 165–180

SPL (Speaking) 0–1

SPL (Reading and Writing) 0–1

Oral Best: 0–15

Speaking and Listening

Individual cannot speak or understand English, or understands only isolated words or phrases.

Basic Reading and Writing

Individual has no reading or writing skills in any language, or has minimal skills, such as the ability to read and write own name or simple isolated words. The individual may be able to write letters or numbers and copy simple words and there may be no or incomplete recognition of the alphabet; may have difficulty using a writing instrument. There is little or no comprehension of how print corresponds to spoken language.

Functional and Workplace Skills

Individual functions minimally or not at all in English and can communicate only through gestures or a few isolated words, such as name and other personal information; may recognize only common signs or symbols (e.g., stop sign, product logos); can handle only very routine entry-level jobs that do not require oral or written communication in English. There is no knowledge or use of computers or technology.

Literacy Level

BEGINNING ESL

Test benchmark:
CASAS (Life Skills): 181–200
SPL (Speaking) 2–3
SPL (Reading and Writing) 2–4
Oral Best 16–41

**Speaking and
Listening**

Individual can understand frequently used words in context and very simple phrases spoken slowly and with some repetition; there is little communicative output and only in the most routine situations; little or no control over basic grammar; survival needs can be communicated simply, and there is some understanding of simple questions.

**Basic Reading
and Writing**

Individual can read and print numbers and letters, but has a limited understanding of connected prose and may need frequent rereading; can write sight words and copy lists of familiar words and phrases; may also be able to write simple sentences or phrases such as name, address and phone number; may also write very simple messages. Narrative writing is disorganized and unclear; inconsistently uses simple punctuation (e.g., periods, commas, question marks); contains frequent errors in spelling.

**Functional and
Workplace Skills**

Individual functions with difficulty in situations related to immediate needs and in limited social situations; has some simple oral communication abilities using simple learned and repeated phrases; may need frequent repetition; can provide personal information on simple forms; can recognize common forms of print found in the home and environment, such as labels and product names; can handle routine entry level jobs that require only the most basic written or oral English communication and in which job tasks can be demonstrated. There is minimal knowledge or experience using computers or technology.

Literacy Level**Low INTERMEDIATE ESL**

Test benchmark:

CASAS (Life Skills): 201–210

SPL (Speaking) 4

SPL (Reading and Writing) 5

Oral Best: 42–50

**Speaking and
Listening**

Individual can understand simple learned phrases and limited new phrases containing familiar vocabulary spoken slowly with frequent repetition; can ask and respond to questions using such phrases; can express basic survival needs and participate in some routine social conversations, although with some difficulty; has some control of basic grammar.

**Basic Reading
and Writing**

Individual can read simple material on familiar subjects and comprehend with high accuracy simple and compound sentences in single or linked paragraphs containing a familiar vocabulary; can write simple notes and messages on familiar situations, but lacks complete clarity and focus. Sentence structure lacks variety, but shows some control of basic grammar (e.g., present and past tense), and consistent use of punctuation (e.g., periods, capitalization).

**Functional and
Workplace Skills**

Individual can interpret simple directions and schedules, signs and maps; can fill out simple forms, but needs support on some documents that are not simplified; can handle routine entry level jobs that involve some written or oral English communication, but in which job tasks can be demonstrated. Individual can use simple computer programs and can perform a sequence of routine tasks given directions using technology (e.g., fax machine, computer).

Literacy Level

HIGH INTERMEDIATE ESL

Test benchmark:
CASAS (Life Skills): 211–220
SPL (Speaking) 5
SPL (Reading and Writing) 6
Oral Best: 51–57

**Speaking and
Listening**

Individual can understand learned phrases and short new phrases containing familiar vocabulary spoken slowly and with some repetition; can communicate basic survival needs with some help; can participate in conversation in limited social situations and use new phrases with hesitation; relies on description and concrete terms. There is inconsistent control of more complex grammar.

**Basic Reading
and Writing**

Individual can read text on familiar subjects that have a simple and clear underlying structure (e.g., clear main idea, chronological order); can use context to determine meaning; can interpret actions required in specific written directions, can write simple paragraphs with main idea and supporting detail on familiar topics (e.g., daily activities, personal issues) by recombining learned vocabulary and structures; can self and peer edit for spelling and punctuation errors.

**Functional and
Workplace Skills**

Individual can meet basic survival and social needs, can follow some simple oral and written instruction and has some ability to communicate on the telephone on familiar subjects; can write messages and notes related to basic needs; complete basic medical forms and job applications; can handle jobs that involve basic oral instructions and written communication in tasks that can be clarified orally. The individual can work with or learn basic computer software, such as word processing; can follow simple instructions for using technology.

Literacy Level**Low Advanced ESL**

Test benchmark:
CASAS (Life Skills): 221–235
SPL (Speaking) 6
SPL (Reading and Writing) 7
Oral Best 58–64

**Speaking and
Listening**

Individual can converse on many everyday subjects and some subjects with unfamiliar vocabulary, but may need repetition, rewording or slower speech; can speak creatively, but with hesitation; can clarify general meaning by rewording and has control of basic grammar; understands descriptive and spoken narrative and can comprehend abstract concepts in familiar contexts.

**Basic Reading
and Writing**

Individual is able to read simple descriptions and narratives on familiar subjects or from which new vocabulary can be determined by context; can make some minimal inferences about familiar texts and compare and contrast information from such texts, but not consistently. The individual can write simple narrative descriptions and short essays on familiar topics, such as customs in native country; has consistent use of basic punctuation, but makes grammatical errors with complex structures.

**Functional and
Workplace Skills**

Individual can function independently to meet most survival needs and can communicate on the telephone on familiar topics; can interpret simple charts and graphics; can handle jobs that require simple oral and written instructions, multi-step diagrams and limited public interaction. The individual can use all basic software applications, understand the impact of technology and select the correct technology in a new situation.

Literacy Level

**Speaking and
Listening**

**Basic Reading
and Writing**

**Functional and
Workplace Skills**

HIGH ADVANCED ESL

Test benchmark:
CASAS (Life Skills): 236 and above
SPL (Speaking) 7 and higher
SPL (Reading and Writing) 8 and higher
Oral Best 65 and higher

Individual can understand and participate effectively in face-to-face conversations on everyday subjects spoken at normal speed; can converse and understand independently in survival, work and social situations; can expand on basic ideas in conversation, but with some hesitation; can clarify general meaning and control basic grammar, although still lacks total control over complex structures.

Individual can read authentic materials on everyday subjects and can handle most reading related to life roles; can consistently and fully interpret descriptive narratives on familiar topics and gain meaning from unfamiliar topics; uses increased control of language and meaning-making strategies to gain meaning of unfamiliar texts. The individual can write multiparagraph essays with a clear introduction and development of ideas; writing contains well formed sentences, appropriate mechanics and spelling, and few grammatical errors.

Individual has a general ability to use English effectively to meet most routine social and work situations; can interpret routine charts, graphs and tables and complete forms; has high ability to communicate on the telephone and understand radio and television; can meet work demands that require reading and writing and can interact with the public. The individual can use common software and learn new applications; can define the purpose of software and select new applications appropriately; can instruct others in use of software and technology.

From: National Reporting Levels (n.d.)

APPENDIX B: MATRIX OF PROPOSED VIGNETTES

T = Teacher Standards; S = Student Standards. Vignettes in **red** are included in the framework document, while the others are suggested additions to the forthcoming full volume.

Teacher Standards	IEP	EFL (Child)	EFL (Teen and adult)	ESL (Child)	ESL (Teen and adult)	Adult Workplace (ESL)	Online Teacher + T trainer	ESP in EFL setting (prof.)	ESP in EFL setting (acad.)	Administered in some setting	Student Standards
1.1			S			S	T				1.1
1.2				T		S	T		S		1.2
1.3	T	T	T	S					S	x	1.3
1.4		S					S	T	T	x	1.4
1.5								T			
2.1			S		S	T		S	T		2.1
2.2					T		S			x	2.2
2.3	T					T	T			x	
2.4	T							T	T		
3.1			T	S	T	S	T	S		x	3.1
3.2	S			T	T				S		3.2
3.3				S		T	S				3.3
4.1	S				T		T		S		3.4
4.2	S	T				S		S			3.5
4.3				T	T					x	