Technology Plan For Basic English Conversation Courses At The University Level in South Korea Submitted by Kimberly Hogg

A Final Project Report

submitted in partial fulfilment of the requirements

for the Masters in Education in Information Technology

Cape Breton University

April 1, 2013

Table of Contents

OVERVIEW	3
VISION STATEMENT:	3
MISSION STATEMENT:	3
GOALS AND OBJECTIVES:	3
EXISTING RESOURCES:	3
NEW RESOURCES:	4
TRAINING:	4
MAINTENANCE:	5
INTRODUCTION	6
INTERVENTIONS	7
BUDGET	10
PROFESSIONAL DEVELOPMENT	10
EVALUATION	14
REFERENCES	17

Overview

The following general assessment is a modified version of Thirteen Ed's (n.d.) Technology Plan Template. It provides a general overview of the current situation and future goals for technology integration in the basic English Conversation classes.

Vision Statement:

To create a holistic learning environment with student-centered learning approaches in which multiple learning styles are both recognized and accommodated. This holistic environment will address academic, mental, and physical growth and development. Students will be prepared for employment, citizenship and life-long health and wellness. This will be realized through partnerships with parents and the larger community employing appropriate technology, internships and other resources to benefit and enhance student outcomes.

Mission Statement:

Basic English courses at the tertiary level will align with the Korean Ministry of Education, Science, and Technology's (Major Tasks, n.d.) goals of developing a STEAMbased education system, serving to enhance and grow students' communication skills with the enhancement of appropriate technologies.

Goals and Objectives:

Through technology, students will learn to employ tools that enhance communication, interact with global citizens and their perspectives, and gain preparation for the future through collaborative problem solving.

Existing Resources:

School resources include:

- Multimedia centers in the classrooms
 - Networked computer
 - o LCD projector

- o Display screen
- Audio system
- o DVD player
- Microphone with amplifier
- Computer labs
- Wifi access to the school network
- Moodle LMS (some schools), school LMS (all schools)
- Unfettered access to online software resources (Edmodo, etc)
- Office suites, Adobe Creative Suites

Student resources include:

- Smartphones (over 99% observed penetration as of 2013)
 - o Audio recorders
 - o Video recorders
 - o Camera
 - o Internet access
 - LMS software applications (free/low-cost download)
 - Chatware
- Personal computers and laptops
- Access to computers and printers via the school library

New Resources:

None at present. Most requirements are available or can be available through online access.

Training:

The teacher will be responsible to seek out training online for new technologies.

Where available, professional development seminars and training sessions are encouraged.

Students will be trained incrementally (scaffolding) over several assignments to encourage familiarity and comfort, building toward exploration and creativity.

Maintenance:

The technology department or the individual owner maintains current resources.

Costs and Funding:

As this plan does not require an increase in technology purchases, it fits within current budgetary allocations. New applications for smartphones for use in the class will be free or at a cost affordable to students so that no financial burden is imposed.

Assessment:

Technologies will be assessed for their contribution to educational outcomes. Where outcomes are not met, exploration into the reasons will help determine whether the fault lies with the technology specifically, pedagogical problems, or external forces.

Introduction

The Republic of Korea (Korea) has made English an educational priority for all students; since 1997 students have had mandatory English instruction starting in elementary school (KWON, 2009). This extends into the university level with all students being required to obtain a few credits at the freshman or sophomore level in English for graduation. Korea spends 1.9% of GDP on English education (Card, 2006), much of that in private cram schools in preparation for many standardized tests of English. The educational goals associated with learning English have little to do with measurable outcomes unless these are the results of the aforementioned standardized tests (TOEIC, TOEFL, etc). Students study in special test classes, rehearsing sample test questions and strategies for getting a higher score.

As the Korean Ministry of Education is pushing for a transition to both student centered, constructivist pedagogy with ICT integration ("Major Tasks - MEST," 2013), the creation of a technology plan to enhance the English curriculum at the university level is timely and appropriate. The implementation of ICT is starting to take off in the most wired nation on Earth, which also boasts wireless broadband access surpassing 100% penetration (oecd.org, n.d.). In keeping with Dexter's (2002) recommendations, the technology selected for this plan are based on instructor-determined learning outcomes based on their experience, and are expected to provide "added value to teaching and learning" (p. 58).

This plan focuses on the basic freshman conversational English course common to most universities in Korea. This course focuses, with some variation, on basic communication skills one would need in a travel, business or casual setting. This includes, but is not limited to introductions, sharing of personal information, shopping, travel, restaurants and food, advice, how-to instructions, directions, hobbies and future ambitions. Grammar often includes present simple, present continuous, modal verbs (should, could, ought to), simple past, present perfect (relating stories), and future tenses. The linguistic proficiency at this level is often considered to be novice to low intermediate (ACTFL Proficiency Guidelines, 2012). Additionally, because Korea has a cultural bias toward rote memorization of direct instruction ("Major Tasks, n.d.), students will require scaffolding in constructivist approaches to learning. Where possible, technology will be employed to assist students as they learn to work in a constructivist learning environment.

Interventions

Because the nature of the program involves much face-to-face interaction practice, there are times when ICT integration is inappropriate and role-play activities or other simulations are preferred. However, where direct instruction for grammar or vocabulary may be expected, there is opportunity to "flip" this part of the class and allow for greater instructor-student interaction on this difficult but crucial area. Additionally, Eric Mazur's Peer Instruction Model (Crouch, Watkins, Fagen, & Mazur, 2007) can play a role in helping turn grammar instruction from direct, rote memorization to a more self-constructed understanding by having students attempt to answer simple, multiple choice questions in class (for example, via the student response system Socrative), and then discussing discrepancies in answers among themselves. The Peer Instruction Model uses the peer construction of knowledge to bring students to a deeper, internalized understanding of a concept, much like in learning grammar.

Another possible integration application is with the memorization of new vocabulary. As language learners require multiple, staggered exposure to new vocabulary to internalize it, the use of flashcards with built-in stagger may benefit learners. Flashcard software such as ANKI, which is available as a smartphone app, can be used outside of class for student learning. Table 1 takes a more thorough look at technology applications in the classroom:

Table 1: Technology Integration Possibilities

General Goals	Specific Objectives	Specific Strategies	Technologies Employed	Skills
What needs to be accomplished during the semester?	The details of what you do in your classroom to achieve what needs to get done. Specific learning strategies and/or activities.	How can technology be employed?	Indicate which technologies are existing and which will need to be attained	General Skills Required
Administrative: Assessment, Attendance tracking, final grading	Taking attendance, keeping an up-to-date gradebook, submitting final grades	An electronic gradebook can be used to track and share this information with students	Use of an online LMS with student access (Moodle, Engrade.com, etc)	Website navigation, data entry into online forms, know how to print documents to share access codes with students
Administrative: - assignments/due dates	Ss should understand the parameters and due dates for assignments	Provide online supplement for confirmation in addition to class communication	LMS announcements and calendar	Uploading information to form, create "posts"
Administrative: - Office hours/student help	Ss should have timely access to their professor for additional assistance	In addition to office hours, be available via chat service on phone	Kakao Talk phone app	Teacher: how to use phone chat app (if unknown) Ss: none (they know it!)
Introductions Unit: -introduce oneself -introduce two people to each other -discuss basic personal information (nationality, interests, job)	Ss should be able to make personal introductions and carry out essential small talk about themselves and ask about others.	Video conferencing (Google Hangouts, Skype) could be used to facilitate interaction with other L2 users not from the same L1 group	Existing: smart phones, computers with headsets and cameras Need: Google+ or Skype app and account, Wi-Fi or 3G access	T/Ss: Software/app installation, account setup, headset/camera use, 3G or Wi-Fi access
Sharing Personal Information: - personal identification - register for a class or service (telephone, internet, etc)	Ss should be able to share personally identifying information with a school or service provider	? This seems safest for student privacy kept offline and in the classroom role- play setting	Pre-class online practice of vocabulary and grammar (flipped class setup)	Teacher: record a video, upload to Youtube, embed to website Ss: web surfing, form completion, watch videos online
Making Small Talk: - hobbies/interests - family size, members and their jobs or studies	Ss should be able to ask about and discuss their families, personal interests, and job or studies for each person	? This could possibly be done through mock personal ads, but it does not facilitate speaking	Pre-class online practice of vocabulary and grammar (flipped class setup)	Teacher: record a video, upload to Youtube, embed to website Ss: web surfing, form completion, watch videos online

General Goals	Specific Objectives	Specific Strategies	Technologies Employed	Skills
Directions Unit: - orienteering - getting/giving directions	Ss should be able to ask for, give, and follow directions to a given location.	Ss can use their smartphones and a physical map to complete a QR- code enabled scavenger hunt (http://blog.khogg.com/qr-code- scavenger-hunt-with-esl-students/)	Existing: Smartphone with QR code reader app May Need: QR code reader app	T: ability to create and print QR codes for the hunt Ss: Ability to scan a QR code with a smartphone application
Shopping unit: -basic transactions -requesting size/colour changes -asking for discounts -describing clothing -comparatives and superlatives	Ss should be able to describe the objects they wish to purchase, get size or colour changes, ask for discounts, and compare two or more items	? Again, this is a face-to-face interaction; student-use technology is not likely to add to or enhance learning in this scenario. Perhaps display of vocabulary and pictures may help memory/stimulate vocabulary	Existing: computer, projector, screen	T: Find suitable creative commons or free/fair use images online, create slideshow or other display module for in-class discussion
Restaurants unit: - Order from a menu - Ask for the bill - Pay for the meal (and tip!)	Ss should be able to navigate a menu selecting desired items and place an order with wait staff.	? This face-to-face simulation may not benefit from technology in the role play practice	Pre-class online practice of vocabulary and grammar (flipped class setup)	Teacher: record a video, upload to YouTube, embed to website Ss: web surfing, form completion, watch videos online
Travel Unit: - navigate travel ticket information and prices -select a ticket and make a reservation - Confirm dates and times	Ss should be able to plan a trip based on a budget, choose and reserve tickets for travel	Ss can use the Internet to get real prices on destinations and accommodations for an ideal or practical vacation	Smartphone-based web searching and surfing	T: pre-obtain and recommend websites for travel booking Ss: Website navigation, searching and evaluating results
Problems and Advice Unit -asking for advice -giving suggestions -modal verb practice	Ss should be able to ask for advice and offer suggestions to their friends	? This face-to-face simulation may not benefit from technology in the role play practice	Pre-class online practice of vocabulary and grammar (flipped class setup)	T: record a video, upload to YouTube, embed to website Ss: web surfing, form completion, watch videos online
General Instruction -vocabulary	Ss should memorize for receptive and productive language tasks.	Ss use online flashcard set to drill for memorization	Existing: LMS flashcard application or phone-based app like ANKI (http://ankisrs.net/)	T/Ss: Use of either flashcard application
General Instruction -grammar	Ss should memorize for receptive and productive language tasks	Flip the classroom for this element: Ss watch instructional video at home, complete practice questions online, review and check in class	LMS-based lesson, YouTube, video camera/smart phone, web browser, online practice website	Teacher: record a video, upload to YouTube, embed to website Ss: web surfing, form completion, watch videos online

Budget

Although North American education budgets are famously tight (Hew & Brush, 2007), Korea recognizes the need for technology incorporation in education and has an ample budget for purchases and upgrades. This enviable environment allows this technology plan to use existing technologies in new ways, without requiring additional funding or purchases. As noted in the overview, university classes are commonly (but not entirely) equipped with multimedia computer stations connected to the university network and with LCD projection units. For display, demonstration and presentation purposes, the classrooms are well equipped. In addition, schools are configured with wireless Internet hubs sufficient for each classroom with both open and login-only access for university purposes.

Students at the tertiary level, nearly without exception, come with smartphones and sometimes also tablet computing devices. The majority are currently running on the Android operating system (OS), but a fair number of users have iOS devices. It is rare to find students with an alternative OS or without a smartphone. PaiChai University, among others, supplies each faculty member with an iPad 2, which can be lent to students for class purposes if the need arises, although this is not a stipulation.

Together, this access to technology and networks creates an environment ripe for technology integration without the need for the instructor to source funding or donations to enact the classroom-level technology plan.

Professional Development

For this classroom-level technology plan, the instructor is quite proficient with technology but lacking in formal training in pedagogy and teaching methods. Unlike those of teachers with professional training, the focus of this technology plan's professional development concerns are more technique than technical. The self-evaluation instrument concerning professional competencies and technology was slightly modified from the International Society for Technology in Education's (ISTE) National Educational Technology Standards for Teachers 2008 edition. Modifications were only to adjust the language for tertiary education from its K-12 focus, centralizing the educational responsibilities on the teacher and student. This rubric was selected for its accessible, well-levelled series of stages for truly novice through advanced professionals in their progress toward seamless, potentially groundbreaking teaching.

As mentioned in the introduction, Korea has only recently begun to focus on studentcentered education, which has become somewhat of a buzzword (for example, Mokwon University's (2011)new motto is "글로발인제를 양성하는 학생중심대학" which is translated "A Student-Centered University Fostering Global Leaders," although it seems to be more cosmetic than pedagogical in focus). Korea has a long cultural history that prefers direct instruction and rote memorization. The Ministry of Education, Science and Technology (Major Tasks, n.d.) published its "Major Tasks" whitepaper, outlining shifts in education delivery, including "a major shift in school education from rote-based learning and teachercentered instruction towards practice-based learning and student-centered instruction" (Creativity & Character Education section, para. 1). As this shift is grandfathered in, students may become more receptive to constructivist pedagogy and the ISTE-T standards will be more useful as a measure of teacher progress. At present, these serve as a long-term goal in my teaching practice, as I move my own pedagogical style away from direct instruction toward constructivist pedagogy, as my students are able to understand it.

One additional aspect worth noting is that my subject area is a foreign language, not a particular content area, and so the language students often expect it to be taught from a grammar-translation or linguistics-style approach. As the shift toward constructivist education continues, there will be greater opportunity to engage a wider variety of content and outcomes

not directly related to understanding English as a language, but in using English as a communication tool.

For my personal professional development needs, the self-assessment tool highlighted three particular standards of weakness (lacking beginning or developing status), which are:

• 2C: customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources.

• 2D: provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching

• 4D: develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital-age communication and collaboration tools.

In Standard 2C, my greatest shortfall concerns the differentiation of task for learning styles and abilities. While I try to offer several ways to present understanding, the nature of many of my classes are still single-skill focused (speaking, writing, listening comprehension, etc.), which limits much of the variation on the productive end for multiple intelligences and learning styles. Students are frequently at mixed ability levels, meaning that tasks need to be differentiated on as-needed bases depending on the task and desired outcome. A barrier to this is lack of contact with students (classes of approximately 25 for three hours each week) with the added complication of cross-cultural and cross-linguistic communication difficulties; nuanced assessment of student abilities may take a couple of weeks. Success in this standard will rely in part on the success of organizing myself to succeed with 2D, below.

Formative assessment (2D) is also a particular weakness, and the barriers for 2C complicate achieving this standard as well. Recently, I have been completing some self-directed professional development in this area, trying to implement standards-based grading (based on the communicative outcomes of the course and in line with the American Council

on the Teaching of Foreign Languages' Proficiency Guidelines for 2012), project-based learning and stressing formative assessment with my students. This is a completely new style of assessment that previous courses in my graduate studies have brought to my attention, and diving in headfirst has left me treading water in many ways. Being able to determine clear standards and guidelines for my learners will assist in differentiation as both my students and I have a clearer understanding of expectations and where they fit on the progress toward that goal.

Standard 4D is a classroom reality; my students are not all from the same cultural or linguistic background, although they all speak Korean at some level as that is the primary language of instruction on campus. In addition, as their instructor I do not share a cultural or linguistic background with my students. Cultural values are unavoidable in the learning of language in what we say, how, and to whom. I am starting to bring technology into this aspect of the class as we explore these differences. My struggle is with the technology becoming a barrier or a shield as these issues are addressed. This is also an area that requires more attention.

To become a better educator and increase my competencies, particularly in constructivist pedagogy, I have reached out to other instructors in similar situations. I have also worked to include professionally trained teachers as part of my Personal Learning Network (PLN). If possible in my Masters of Education study, I hope to take a course in assessment to help with the working end of planning and performing formative assessments, in particular getting timely feedback returned to students in a measurable form. I expect that I will continue to research and consult with my PLN for better constructivist approaches to teaching. I also will continue to watch for workshops and sessions through the local professional association. I have signed up for notification of webinars with several professional development organizations and expect to partake in one or two over the next year, where time zones allow. An extension of my PLN may include participation in MOOCs (Massive Open Online Courses), especially pertaining to Game Design to assist with my constructivist focus, along with other pertinent courses as they come online.

Finally, I will continue to reflect on my classroom successes and failures on my blog, with my PLN, and consider alternative approaches to instruction and assessment. Through self-directed learning, peer consultation, and outside instruction, I expect that I will be able to progress closer to my ideals as a professional instructor.

Evaluation

The final aspect of this technology plan is the evaluation of the plan. As part of the development of the plan, I evaluated the curriculum, existing technology, applications of technology and acquisition needs, along with my own capabilities and weaknesses as an instructor. As this plan begins implementation, future evaluation will determine its efficacy and areas that will require alterations.

Several stages will require evaluations. As (Al-Weshail et al., n.d.) describe, evaluation is an ongoing part of the implementation phase. Keeping the vision, mission, and purpose in mind, there is an ongoing informal and formal evaluation process. Informal evaluation happens day-by-day, moment-by-moment as the implementing teacher observes the successes and challenges of each part of the plan. Formally, however, evaluation takes place at set intervals with specific foci and criteria.

As this is a classroom-based plan independent of oversight, the evaluation schedule and criteria should be relevant to the teacher, their practice and reflection as a professional. The teacher will conduct formal evaluations both at the end of the semester where the technology plan is used, and annually. The end of semester evaluation will focus on the efficacy of the plan in terms of educational outcomes. A brief evaluation form is included in Table 2 below. This evaluation should be used for each technological intervention.

Intervention:	Criteria in terms of Expectations					
	1	2	3	4		
	Far Below	Approaching	Meets	Exceeds		
Student Ease of Use						
Educational Outcomes						
Vision						
Mission						
Goals and Objectives						

Table 2

Where the teacher determines the intervention to meet or exceed expectation in all categories, this intervention will be considered successful. Where one or more columns is "Approaching" expectations, the teacher will consider how this intervention can be altered or modified through scaffolding, how it is used in the course, or other factors, to bring it up to a successful level. Where interventions fall far below expectations in any area, the instructor will reinvestigate this learning outcome to determine whether a different intervention would be more effective.

On an annual basis, the plan will focus specifically on the technologies being used for relevance, updates, and obsolescence. Table 3 below shows the brief evaluation form for this process:

Technology	Is current	ly up-	Is being a	ctively	Is releva	nt to	Has no b	etter
Name	to-date		produced		the cour	se	alternativ	ve
А	Y	Ν	Y	Ν	Y	Ν	Y	Ν
В	Y	Ν	Y	Ν	Y	Ν	Y	Ν
С	Y	Ν	Y	Ν	Y	Ν	Y	Ν

For each technology employed, a Yes answer is required for the teacher to include the technology in the updated plan without further review. Determining a Yes or No answer will require research on the part of the teacher for accurate and timely evaluation. If the technology is not up-to-date, the instructor will determine whether or not an update is both useful and required. If the technology is not longer being actively produced (for example, if the software has been abandoned by its creator), the instructor shall find a suitable replacement, if possible, for future iterations of the technology plan. The technology must

also be relevant to the course outcomes (as in the semester-end evaluation) to progress to next year's technology plan. Finally, obsolete technology will need substitutions or replacements to maintain currency and support with associated technologies. An example of obsolete technology may be hardware no longer capable of running software or applications necessary for the course.

This two-stage formal evaluation process, in concert with ongoing informal evaluation in the class environment presents a plan for keeping technology and delivery current, useful, and available to the students. This regular evaluation process, although simple on the surface, will provide the necessary maintenance to determine ongoing suitability, allowing the teacher to consider newer technologies as they arise.

Conclusion

This technology plan sets forth a method for creating and maintaining a technologyrich educational environment for English as a Foreign Language students in Korea at the tertiary level. It provides for the use of existing technology within the school and in the possession of the students, a method for evaluating the ongoing efficacy of these technologies, and a plan for the average EFL teacher to gain further competence in instruction to employ them to maximum effect. This plan is culturally sensitive and in line with the Korean Ministry of Education, Science and Technology's goals for both pedagogy and ICT integration going forward, and is flexible enough for easy modification to fit other courses under the EFL umbrella outside of the entry-level conversation program.

References

- ACTFL Proficiency Guidelines. (2012). ACTFL Proficiency Guidelines (pp. 1–5). American Council on the Teaching of Foreign Languages. Retrieved from http://actflproficiencyguidelines2012.org/speaking
- Al-Weshail, A., Baxter, A., Cherry, W., Hill, E., Jones, C. R. I., Love, L. T., et al. (n.d.). Guidebook (2nd ed.). Mississippi State University.
- Card, J. (2006, December 15). Appetite for language costs S Korea dear | Education | Guardian Weekly. The Guardian. Retrieved from http://www.guardian.co.uk/education/2006/dec/15/tefl
- Crouch, C. H., Watkins, J., Fagen, A. P., & Mazur, E. (2007). Peer Instruction. Reformed Physics Teaching Methods, 1–92. Retrieved from http://mazur.harvard.edu/sentFiles/Mazurpubs_537.pdf
- Dexter, S. (2002). eTIPs–Educational Technology Integration and Implementation Principles.
 In P. Rogers (Ed.), Designing Instruction for Technology-Enhanced Learning (pp. 56–70).
 Hershey, PA: Idea Group Publishing. doi:10.4018/978-1-930708-28-0.ch003
- Hew, K. F., & Brush, T. (2007). Integrating technology into K-12 teaching and learning:Current knowledge gaps and recommendations for future research. EducationalTechnology Research and Development.
- Mokwon University (2011). I am a Globalist. Retrieved from http://www.mokwon.ac.kr/etc/webzine/2011/book_2011.html

International Society for Technology in Education (2008). National Educational Technology Standards for Teachers. Handout. Retrieved from http://courseware.cbu.ca/moodle/file.php?file=%2F511%2FNETS T RUBRIC 2008.pdf

KWON, O. (2009). The current situation and issues of the teaching of English in Korea (International symposium on the teaching of English in Asia: Locating the teaching of English in Japan in Asian contexts: what we can learn from China and Korea). Ritsumeikan studies in language and culture, 21(2), 21–34. Retrieved from http://www.ritsumei.ac.jp/acd/re/k-rsc/lcs/kiyou/pdf_21-2/RitsIILCS_21.2pp21-34KWON.pdf

- Major Tasks MEST. (n.d.). Major Tasks MEST. Ministry of Education, Science and Technology. Retrieved February 15, 2013, from http://english.mest.go.kr/web/1717/site/contents/en/en_0275.jsp
- oecd.org. (n.d.). oecd.org. Retrieved February 15, 2013, from http://www.oecd.org
- Planning: Technology Plan Template. (n.d.) Thirteen Ed Online. Retrieved from http://www.thirteen.org/edonline/primer/techtemp.html

1. Facilitate and Ins	pire Student Learni	ng and Creativity							
Teachers use their k	nowledge of subject	et matter, teaching a	and learning, and tee	chnology to					
facilitate experience	es that advance stud	ent learning, creativ	vity, and innovation	in both face-to-					
face and virtual env	face and virtual environments. Teachers:								
Indicator	Beginning	Developing	Proficient	Transformative					
a. promote, support, and model creative and innovative thinking and inventiveness	research and discuss ways students can use digital tools and resources to enhance creative and innovative thinking and to develop and express their understandings of knowledge and concepts.	facilitate creative thinking and inventiveness by modeling thought process and creating visual representations of concept development and problem solving.	enable students to demonstrate creative thinking, construct knowledge, and develop innovative products and processes by promoting and supporting these activities and modeling related knowledge, skills, and attitudes.	regularly engage with students as lead learner in creative thinking activities and inspire students to explore complex issues, generate new ideas, create and critique original works, and develop and evaluate new products and processes.					
b. engage students in exploring real-world issues and solving authentic problems using digital tools and resources	develop technology-based learning activities to engage students in critical thinking, creativity	involve students in researching real- world problems and issues and evaluating diverse solutions using digital tools and resources.	facilitate activities that engage students in managing research projects focused on real- world issues, in applying critical thinking to solve authentic problems, and in selecting digital tools and resources to accomplish and enhance the process.	regularly involve students in learning experiences that require identifying and defining authentic questions and problems, planning for and managing their research, and using multiple processes and perspectives to discover, propose and evaluate multiple solutions.					
c. promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes.	demonstrate the use of collaborative tools to promote student reflection, planning and creative thinking.	facilitate and support student use of collaborative tools to reflect on and clarify their own thinking, planning, and creativity.	engage students in reflecting on and clarifying their own thinking, planning, and creative processes, in correcting misconceptions, and in using meta- cognitive thinking strategies with collaborative tools and environments.	involve students in ongoing examination and evaluation of their own thinking, planning and creativity. Encourage learners to articulate and share their thinking with others through technology- enhanced teamwork.					
d. model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments.	research and identify strategies for facilitating knowledge construction and creative thinking in either face-to-face or virtual environments.	facilitate knowledge construction, creative thinking, and collaborative interaction by engaging in learning with students, colleagues, and others in either face-to-face or	model knowledge constructions and creative thinking by working collaboratively with individuals and groups, contributing to learning both face-to-face and virtually.	model knowledge construction and creative thinking in a variety of face-to- face and virtual learning environments and situations by engaging in real- world problem solving with students, peers, and					

		virtual		experts.			
2. Design and Deve	elop Digital-Age Le	arning Experiences	and Assessments				
Teachers design, develop, and evaluate authentic learning experiences and assessments incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge skills and attitudes identified with the NETS-S. Teachers:							
Performance Indicator	Beginning	Developing	Proficient	Transformative			
a. design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity	explain how existing learning resources could be designed or adapted to include students' use of technology tools to research and collect information online and to create a digital product.	adapt or create learning experiences that include students' use of technology tools to research and collect information online and to create a report, presentation or other product.	design and customize technology-enriched learning experiences that engage students in developing research questions about real-world issues or problems, proposing and evaluating multiple creative solutions, and presenting a report to an audience, either face-to-face or virtually, for feedback	engage students in collaborative learning challenges where they research global problems. Guide learners to select a specific problem to investigate, create research questions, select and employ strategies, and determine best solutions. Students use technology tools to present their results and share information for application in a real-world setting.			
b. develop technology-enriched learning environments that enable all students to pursue their individual curiosities	research and discuss ways in which technology resources enable students to explore questions and issues of individual interest and to plan and manage related research.	select and demonstrate the use of technology resources that enable students to explore questions and issues of individual interest and to plan, manage, and assess their own learning	facilitate the use of technology resources to enable students to pursue questions and issues of individual interest, to identify and manage learning goals, to record reflections, and to assess their progress and outcomes	enable students to independently use technology resources to manage their own learning goals, plan learning strategies, and evaluate their progress and outcomes.			
c. customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources.	research and design learning activities that use digital tools and resources to address a variety of learning styles, work strategies, abilities, and developmental levels.	customize technology-based materials to address the learning styles, work strategies, abilities, and developmental levels of individual students	facilitate student learning by recognizing preferred learning styles, work strategies, abilities, and developmental levels of students. Develop and use specific strategies that incorporate digital tools and resources to effectively differentiate learning experiences	identify and develop with students personalized learning experiences aligned with preferred learning styles, work strategies, and abilities.			
d. provide students with multiple and varied formative and summative assessments aligned with content and	select examples of technology-based formative and summative assessments and demonstrate how	develop and conduct technology-based formative and summative assessments to inform learning and	provide students with multiple and varied opportunities to demonstrate their learning, and make data-based decisions	engage students in the development and analysis of formative and summative assessments to adjust teaching and learning			

technology standards and use resulting data to inform learning and teaching	they can be used to inform learning and teaching.	teaching	to customize and adapt future learning opportunities aligned with content and technology standards.	for increased success.
3. Model Digital-A	ge Work and Learn	ing		
Teachers exhibit k	nowledge, skills, and	d work processes re	presentative of an in	nnovative
professional in a g	lobal and digital soc	iety. Teachers:		
Performance	Beginning	Developing	Proficient	Transformative
Indicator		10		
a. demonstrate	select and use	plan, manage, and	demonstrate and	engage with students
fluency in	hardware and	facilitate students'	model effective use	in collaborative
technology systems	software best suited	understanding and	of a variety of digital	exploration of
and the transfer of	to particular learning	use of hardware and	tools and resources,	emerging
current knowledge to	experiences and plan	software best suited	select tools and	technologies and
new technologies	student learning	to particular learning	systems best suited	investigate together
and situations	appropriately use	experiences.	teaching learning	be used in real-world
	these tools		and assessment	situations to solve
			activities, and	problems, involve
			transfer this	students in
			knowledge to new	identifying and
			technologies and	solving common
			situations.	hardware and
				software problems
				everyday use
b. collaborate with	explore and	communicate and	effectively	employ a variety of
students, peers, and	demonstrate digital	collaborate with	communicate and	digital environments
community members	tools and resources	students and other	collaborate with	and media to
using digital tools	for communicating	stakeholders to share	students, peers, and	collaborate with
and resources to	and collaborating	information and to	community members	project teams or
support student	with students and	support creativity,	using a variety of	learners of other
success and	other stakeholders to	innovation, and	digital tools to	countries and
mnovation	and establish a	outcomes	learning problem	original works or
	connection between	outcomes.	solving, and the	solve shared
	school and home		production of	problems.
	environments.		original works.	-
c. communicate	research and	communicate	select and use the	evaluate and use a
relevant information	demonstrate	relevant information	most relevant,	variety of digital
and ideas effectively	digital resources for	and ideas to	actinitative, and	tools, resources, and
neers using a variety	communicating with	using multiple	communicating	communicate
of digital-age media	students, and peers	digital media	specific types of	information and
and formats	·····, ···· · · ·	formats.	information and	ideas to a global
			ideas to students,	audience,
			and peers.	demonstrating
				cultural
d model er d	identify or 1 diamon	domonature to the second	model and facility (understanding.
a. model and facilitate effective	the effective use of	of current digital	effective use of	emerging digital
use of current and	current and	tools to locate	current and	tools and resources
emerging digital	emerging tools and	analyze, evaluate.	emerging digital	efficiently and
tools to locate,	resources to locate,	and apply	tools and resources	effectively to deepen
analyze, evaluate,	analyze, evaluate,	information	to locate, analyze,	knowledge of
and use information	and use information	resources to support	evaluate and use	information fluency
resources to support	resources for	and disseminate	information	and its application to
research and	research and	student research and	resources to support	teaching and

4. Promote and Model Digital Citizenship and Responsibilityresults with students, tand colleagues.result with students, tand colleagues.7. Promote and Model Digital Citizenship and ResponsibilityTeachers understand local and global societal issues and responsibilities in an evolving digital collurate and exhibit legal and ethicits between and teach stel, legal and healthy use for the safe, chical, teal and healthy use of reshnology and information, intellectual property, hardware, software, and information, echnology resources,Modeste, model, and healthy use of reshnology and information, intechnology, and information, in	learning.	learning.	learning strategies.	research and	learning and share				
4. Promote and Model Digital Citizenship and Responsibility Inde contension 7. Promote and Model Digital Citizenship and Responsibility Transformative 7. Promote and chical beta Beginning Developing Proficient Transformative 8. advecate, model, and technology, and technology resources of echnology resources and technology and the responsible care and technology strategies for addressing threas to securi of addressing threas to secure to addressing threas to address				learning for themselves and for	results with students,				
4. Promote and Model Digital Citizenship and Responsibility Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behaviour in Teachers: Transformative Performance Indicator Beginning Developing Proficient Transformative advecate, model, and ethical besoft is and expensibility use of gene has ease, ethical, and dethical use of including respect for copyright, intellectual property, and the approperty and				students.	and concagues.				
Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical betweivour in Teachers: Transformative Performance Indicator Beginning Model acceptable use policies for adtressing intrast to security of indiration and teach safe, legal and healthy use of digital information, and teach safe, legal and healthy use of technology and information and technology; and and healthy use policies for addressing infrast to security of systems, and and healthy use of echnology and information. monotoring safe, legal and theilar use of digital information, and technology and information. ergage students in developing a system for addressing infrast to security of systems, and information, resources. ergage students in and technology and information. ergage students in addressing information. b. address the diverse needs of all learner-spin security of systems, address the diverse needs of all learner-spin secures students' address the diverse needs of laterace sto secures in address the diverse needs of laterace sto address the adverse needs of laterace sto address the diverse needs of laterace sto address the diverse needs of laterace sto address the adverse needs of laterace sto address the	4. Promote and Mo	odel Digital Citizens	hip and Responsibil	ity					
evaluate and exhibit legal and ethical bebaviour in Teachers:Performance IndicatorBeginningDevelopingProficientTransformativea. advocate, model, and teach safe, legal and healthy use and technology, of technology and including respect for technology system, and the property, and the formation of sources.model acceptable use policies for technology system, for addressing thrats to security of operation and the appropriate and information of sources.respective system, and the formation of sources.model acceptable use policies for and the anty operty, and the anty operty, and the anty operty, and the appropriate access to digital access to digital echnology strategies and developmental access to digital comprised access and develop strategies and developmental echenology transition.information.engage students in developing a system of digital technology system, addressing misuse of technology and for resources.b. address the diverse needs of all learners by using access to adprise students' access to adprise students' access to adprise students' access to adprise students' access to adprise students' and online resources.facilitate equitable access to adprise and develop resources.facilitate equitable access to digital consolution and online resources.facilitate equitable access to digital technology to evaluable access to digital technology to evaluable access to digital technology and in resources.model correct and employ features of und online resources of timerations calad sustice a resources of undeverse needs of students in the consequences of uncluding access t	Teachers understar	nd local and global s	ocietal issues and re	sponsibilities in an e	evolving digital				
Performance IndicatorBeginningDevelopingProficientTransformative Transformativea dvocate, model, and technoley, digital information and technoley, including respect for address the compright, indification of sources.research and apply effective practices for addressing the chnoley systems, and information and information resourcesadvocate, model, and technoley and including copyright, including copyright, information, and information resources.model acceptable use policies for technoley systems, addressing information, and information resources.model acceptable use policies for technoley systems, addressing information, and information resources.model acceptable use policies for technoley systems, address the diverse ecos of all idiation of success to appropriate digital tools and resourcesresumes by ecos of all access to appropriate idigital constant digital resources.apply strategies to anddress tudents' digital tools and resources and online resources.resumes by 	culture and exhibit legal and ethical behaviour in Teachers:								
IndicatorIndicatorIndicatorIndicatora dvocate, model, and tach safe, legal and ethical use of ligital information including responsible are sources.model acceptable sep plotics for technology resources for the safe, ethical, including strategies for addressing threats to security of technology systems, adat, and ethical use of technology systems, adat, and ethical use of technology and information of sources.model acceptable technology systems, adat, and ethical use of technology and information.data, and ethical use of technology and information, adat, and ethical use of technology aspects data, and sources.data, and ethical use of technology and information.b. address the diverse needs of all resources.investigate issues addressing missue of technology and information.ficelitate equitable access to definal eccess to definal <b< td=""><td>Performance</td><td>Beginning</td><td>Developing</td><td>Proficient</td><td>Transformative</td></b<>	Performance	Beginning	Developing	Proficient	Transformative				
a. advocate, model, and etch.safe, legal and etch.safe, legal and etch.safe, legal and etch.nology, and handing of including respured, intellectual property, and the manding of hardware, software, and the manding of hardware, software, sources.including copyright, technology systems, data, and information.including copyright, technology systems, data, and information.including copyright, technology systems, data, and information.including copyright, technology systems, data, and information.including copyright, technology systems, data, and information.interaction copyrig	Indicator								
and ethical use of a security of systems, and information and ethical use of a security of systems, and information ereources. Investigate issues related to equitable access and develop and information and ethical use of address the diverse needs of all learners of universal access and develop and anging equitable access to appropriate develop mental levels. Including ersources of digital resources and develop wereas and ethical use of a sistive technology and information and ethical use of the diverse needs of learners, including access to appropriate develop mental levels. Including ersources of the diverse needs of learners of universal access and develop mental levels. Including ersources and inform access to appropriate and evelop mental levels. Including ersources and information and ethical use of information and ethical	a. advocate, model,	research and apply	model acceptable	advocate, model, and	engage students in				
digital information and technology, including responsible care and handling of intellectual property, and the appropriate documentation of sources.legal and healthy use of technology and therast to security of tankare, software, and information resources.including istrategies for addressing information.technology and information, including copyright, privacy issues, and coheroly of systems, data, and information.monitoring safe, legal, and ethical use of digital privacy issues, and ceptroly of system, data, and information.monitoring safe, legal, and ethical use of digital privacy issues, and ecoheroly of system, data, and information.monitoring safe, legal, and ethical use of digital privacy issues, and ecoheroly of strategies for marking is trategies for strategies for address students; trategies for address students; ecurriculum software, ecurriculum software, ecurriculum software, ecurriculum software, curriculum software, access to appropriate digital tools and responsible social interactions enlate support student letchnology of strategies and developmental levels.model correct and consequences of instrute digital resources and inform address to digital resources of universal access of strategies and ecologies to meet the diverse needs of learners.monitoring safe, legal, and ethical use of digital resources of instrute digital resources of informationmonitoring safe, legal, and ethical use of digital resources and including resources of universal access of discuss ethical equilable access to appropriate address the diverse responsible social informationmonitoring safe, legal, and eth	and ethical use of	for the safe, ethical.	technology resources	ethical use of	for promoting and				
and technology, including respect for intellectual property, and the appropriate documentation of sources.of technology and the responsible care information, and the appropriate data, and information, resources.information, inform	digital information	legal and healthy use	including strategies	technology and	monitoring safe,				
including respect for intellectual property, and the approprinta documentation of sources.the responsible care handware, software, and information resources.including copyright, and information resources.indextination information resources.indextination and information resources.indextination and information.including copyright, information.information accessing information.information accessing information.information accessing information.information accessing information.information accessing information.information accessing information.information accessing information.information accessing information.information accessing information.information accessing informationinformation accessing informationinformation accessing informationinformation accessing informationinformation accessing informationinformation accessing informationinformation accessing informationinformation accessing informationinformation accessing informationinformation accessing informationinformation accessing informationinformation accessing information informationinformation accessing informationinformation accessing informationinformation accessing informationinformation accessing information informationinformation informationinformation informationinformation informationinformation information informationinformation information informationinformation information informationinfor	and technology,	of technology and	for addressing	information,	legal, and ethical use				
Copyright, intellectual property, and the appropriate documentation of sources.and madware, software, and information resources.itechnology software, data, and information.information, addressing misuse of technology versources.b. address the diverse needs of all learners by using learner-centered strategies for managing technology to adcress the diverse needs of all technology to strategies for managing technology to adcress true technology to address the diverse needs of all technology to adcress true technology to address struetis' address struetis' address struetis' address struetis' address struetis' address struetis' attregies and developmental levels.apply strategies to address struetis' address struetis' addre	including respect for	the responsible care	threats to security of	including copyright,	of digital				
Interactional properting and the appropriate documentation of sources.Interactions cal sources.Joint formation informationControl of security of systems, data, and information.Control of security of systems, dates sing of the control technology tresources.Control of technology to access and develop strategies and develop teration of strategies and develop mental levels.Interactions cal technology to access to technology teraction address students' address students' diverse learning technology to access to appropriate developmental levels.Model correct and consequences of and online resources.Control of studentsControl of technologies to meet technologies to meet technology and interactions related to the use of tigital technology and informationControl of technology and technology.Control of technology and technology.Control of technology and technology.d. develop and informationdemonstrate the use of tigital technology and technology and technology and technology and informationdemonstrate the use of communication students' awarenessControl of technology and technology.Control of technology and technology and technology and technology and technology and <b< td=""><td>copyright,</td><td>and handling of</td><td>data and</td><td>privacy issues, and</td><td>information and technology and for</td></b<>	copyright,	and handling of	data and	privacy issues, and	information and technology and for				
documentation of sources.resources.resources.data, and information.system for addressing misuse of technology resources.b. address the diverse needs of all learner-centered strategies and providing equitable access and develop strategies for managing technology to address the diverse including access to hardware, curriculum software, and online resources.facilitate equitable access to digital tools and resources, including access to strategies, and developmental levels.facilitate equitable access to digital tools and resources, universal access to address students' diverse learning styles and developmental levels.model correct and curriculum software, and online resources.facilitate equitable access to technologies to meet the diverse needs of universal access to address students' diverse learning styles and developmental levels.model correct and consection and use of assistive technology, and larences of misuse.model correct and consection address students of digital resources of misuse.model correct and consection address students of digital technology, and larences of misuse.model correct and consection address students of digital tools and resources of misuse in aglobal informationengop access to address technology.engage learners in resources of misuse.d. develop and model cultural understanding and global awareness by enging with cols for developing students and collaborative variaces with address tudents and technology.model digital tools and resources of misuse in aglobal misuse in aglobal misuse in aglobal misuse in aglobal<	and the appropriate	and information	information.	security of systems.	determining a				
sources.information.addressing misuse of rechnology resources.b. address the diverse needs of all learner by using learner centered strategies and managing technology to access to develop strategies for managing technology to address students' digital tools and diverse learning resources.apply strategies to address the diverse needs of learners, including access to hardware, curriculuan software, and online resources.facilitate equitable tools and resources, use learner-centered strategies and employ features of universal access to technology trategies and evelopmental levels.access to digital economunity, and online resources.facilitate equitable taccess to digital employ features of universal access and assive economunity, and one environments access to technology technologies to meet the diverse needs of learners.identification and use of assistive technologies to meet the diverse needs of learners.c. promote and model digital technology and technology and technology.demostrate digital resources and inform learners of consequences of misuse.promote proper use of digital cols and resources and inform discuss eschical issues, digital technology, and resources and inform discuss eschical issues, digital technology.model correct and misuse.d. develop and model cultural understanding and global awareness by engang with cols for developing tools for developing of varius cultural understanding and global awareness bymodel cultural portice and portices and procedures for oportunities for students awareness of understanding and global awaren	documentation of	resources.		data, and	system for				
b. address the diverse needs of all learners busing learners busing learners busing learners of communication resources.investigate issues related to equitable adcess to diverse hardware, including access to hardware, and online resources.facilitate equitable access to digital ethenology to address students' address students' diverse learning styles and developmental levels.apply strategies to address students' and online resources.facilitate equitable access to digital employ features of universal access and assistive technologies to meet the diverse needs of learners.examine and research in school, community, and online resources.c. promote and model digital etchnology and informationdemonstrate digital support student learning and resources.model correct and careful use of digital resources and inform learning and resources and inform informationpromote proper use responsible use of informationpromote proper use of digital resources and inform etchnology and informationgrowide correct and responsible use of technology.promote proper use of digital resources of misuse.promote proper use of digital resources and inform discust chical issues, digital resources.resources of adjust lools and researching the resources of appropriate use of uitable technology.model correct and consequences of misuse.promote proper use of digital resources.resources. of digital resources and inform resources.c. promote and model digital informationdemonstrate the use of consequences of informationdemonstrate the use<	sources.			information.	addressing misuse of				
b. address the diverse needs of all learner-centered strategies and providing equitable access to and resources, strategies and providing equitable access to and resources, diverse learning resources. c. promote and model digital etiquette and responsible social interactions related to the use of information d. develop and model cultural understanding and global awareness by engaging with students' awareness d. develop and model cultural understanding and global awareness by engaging with colleagues and development information d. develop and model cultural understanding and global awareness by engaging with engaging with colleagues and dots students' diverse learning students' diverse learning styles and developmental levels. d. developmental etiquette and identify information d. development information d. development information diverse information development information development information development information development information development information development information development information develop cultural information develop reliable information develop reliable information develop reliable information develop reliable information develop reliable information develop reliable information develop reliable information develop reliable information develop reliabl					technology				
0. address needs of all learners by using learner-centered strategies and providing equitable access and develop strategies for managing technology to access to appropriate digital tools and diverse needs of learners, including access to address students' address students' ersources.model correct and ersonactions calated support student technology and responsible use of technology.model correct and misuse.model correct and resources and inform issues, digital ersources and inform technology.ensues of technology, and adjital tools and resources of misuse.ensues, digital technology, and technology, and technology.ensues of technology and information sciety.ensues of technology and informationensues adjital resources and inform misuse.ensues adjital technology and information sciety.ensues adjital technology and information sciety.ensues adjital technology and informationensues adjital technology.ensues adjital technology adjital technology and informationensues adjital 	h address the	investigate issues	apply strategies to	facilitate equitable	resources.				
learners by using learner-centered strategies and providing equitable access to appropriate digital tools and resources.access and develop including access to address students' and online resources, usite students' and online resources.tools and resources, use learners, ouriversia access and home environments assistive technologies to meet identification and use of assistive technologies to meet technologies to meet studentsended correct and consequences of misuse.promote proper use of digital technology, and resources and inform interactions can technology and information resources of technology and informationended to the use of isuse.ended to the use of digital tools and resources of misuse.ended to the student to the use of any technology and information sciety.ended to the technology and information sciety.ended to the technology and information sciety.d. develop and model cultural understanding and global awareness by engaging withdemostrate the use of communication and collaboration tools for developing and collaboration of various culture.provide technology access and inform insuse.insuper- technologing and technology and inf	diverse needs of all	related to equitable	address the diverse	access to digital	research issues				
learner-centeredstrategies forincluding access touse learnersaccess to technologystrategies andmanaginghardware,strategies, andin school,access to appropriateaddress students'and online resources.universal access andhome environmentsdigital tools anddiverse learninghardware,molelogies to meetincludingresources.styles anddevelopmentalincludingincludingincludinglevels.model correct andpromote proper useengage learners ininteractions canresponsible socialinteractions caninteractions caninteractions caninsuse.erequences ofinformationlearning anderesponsible use ofinteractions canensuse.erequences ofinformationdemonstrate tegismisuse.eriquette and identifyensuse.eriquette and identifyinformationlearners ofinteractions caninteractions canensuse.eriquette, and real-informationethonology.misuse.eriquette, and real-eriquette, and real-informationdemonstrate tegisprovideinformationmisuse in a globalinformationdemonstrate tegisprovideinformationinformationinformationof communicationprovideinformationmisuse in a globalinformationof communicationprovideinformationerigital tools andinformationof communicationprovideinformationerigital	learners by using	access and develop	needs of learners,	tools and resources,	related to equitable				
strategies and providing equitable access to appropriate digital tools and resources.manging technology to address students' diverse learning styles and developmental levels.hardware, curriculum software, and online resources, and online resources.strategies, and employ features of universal access and assistive technologies to meet the diverse needs of learners.in school, employ features of including identification and use of assistive technologies to meet the diverse needs of of use of assistive technology, and interactions related to the use of technology.in school, employ features of interactions can support student consequences of misuse.in school, employ features of assistive promote proper use of digital technology, and interactions related to the use of technology.in school, employ features of consequences of misuse.in school, employ features of appropriate and inappropriate and inappropriate and informationin school, consequences of misuse.in school, employ features of appropriate and inappropriate and information society.d. develop and understanding and global awareness by engaging with colleagues anddemostrate the use of various cultures,model cultural understantionin school, curriculum software, and collaboration tools for developing students' awarenessin school, curriculum software, and collaboration tools for developing students' awarenessin school, curriculum software, and collaboration tools for developing students' awarenessin school, curriculum software, curriculum software, and collaboration technology a	learner-centered	strategies for	including access to	use learner-centered	access to technology				
providing equilation access to appropriate digital tools and resources.terminology of address students' diverse learning styles and developmental levels.curreturn software, and online resources.entportations of assistive technologies to meet the diverse needs of learners.comments including identification and use of assistive technologies to meet the diverse needs of students.comments including identification and use of assistive technologies to meet the diverse needs of students.entportation assistivecomments including identification and use of assistive technology, and responsible social interactions related to the use of technology.model correct and consequences of misuse.promote proper use of digital resources and inform issues, digital etiquette, and real- world examples of appropriate and informationended social issues, digital digital tools and resources.ended social issues, digital digital tools and resources of misuse.ended social issues, digital etiquette, and real- world examples of appropriate and information society.ended world examples of appropriate and information society.d. develop and model cultural understanding and global awareness by engaging with colleagues anddemonstrate the use of communication and collaboration tools for developing students' awarenessprovide opportunities for students to apply communications technology resourcesentpoly technology and information resources.entpoly technology and information resources.d. develop and model cultural understanding and global aw	strategies and	managing technology to	hardware,	strategies, and	in school,				
digital tools and resources.diverse learning styles and developmental 	access to appropriate	address students'	and online resources.	universal access and	home environments				
resources.styles and developmental levels.technologies to meet the diverse needs of learners.identification and use of assistive technologies to meet the diverse needs of students.c. promote and model digital etiquette and interactions related to the use of technology.emonstrate digial eresources and inform learners of consequences of misuse.promote proper use of digital resources and inform technology, and interactions related technology.engage learners in responsibilities resources and inform learners of consequences of misuse.promote proper use of digital resources and inform technology, and informationengage learners in responsibilities resources and inform learners of consequences of misuse.engage learners in resources and inform insue.d. develop and model cultural understanding and global awarenessdemonstrate the use of communication and collaboration students' awarenessprovide sudents' awareness of various cultures.intornation informationd. develop and model cultural understanding and global awarenessdemonstrate the use of communication and collaboration students' awarenessprovide povide opportunities for students to apply opportunities to apply opportunities to apply of with students' awareness otonication and colleagues and of various cultures.provide consequences provide misuseindentify resources.d. develop and model cultural global awarenessdemonstrate the use of communication and collaboration students' awareness to inter autitic to applyintornation polication at appl	digital tools and	diverse learning		assistive	including				
developmental levels.developmental levels.the diverse needs of learners.use of assistive technologies to meet technologies to meet technologies to meet technologies to meet the diverse needs of students.c. promote and model digital etiquette and interactions can technology and informationdemonstrate digital etiquette and identify how socialmodel correct and careful use of digital resources and inform learners of consequences of misuse.promote proper use of digital technology, and issues, digital etiquette, and real- world examples of appropriate and inappropriate uses of digital tools and procedures of digital tools and procedures of digital tools and procedures for responsible use of technology.engage learners in resources and inform misuse.d. develop and model cultural understanding and resourcesdemonstrate the use of communication and collaboration of communication and collaboration tools for developing students' awareness tools for developing of students' awareness tools consequencesprovide portinities for students to apply communications technology resourcesinvolve students in opportunities to develop cultural understanding and of or onous cultures.provide portinities for students to apply communications to interact with of or onvertex to interact with communications technology resourcesinvolve students in opportunities to develop cultural understanding and of or onvertexprovide portinities for students to apply to interact withintormation sciety.d. develop and model cultural understanding and plaging with colla	resources.	styles and		technologies to meet	identification and				
Indexense responsible social interactions related interactions related informationdemonstrate digital etiquette and identify nessources and inform interactions can interactions related informationmodel correct and careful use of digital ressources and inform insuse.promote proper use of digital reschology, and responsibilities resources and inform insuse.enames of digital responsibilities resources and inform insuse.promote proper use of digital resources and inform issues, digital etiquette, and real- world examples of appropriate uses of informationpromote proper use of digital tools and responsibile use of issues, digital etiquette, and real- world examples of appropriate uses of information sceiety.model cultural information work collaboratively with students in the development of policies and procedures for responsible use of informationprovide opportunities for students in the development of policies and procedures for responsible use of informationinvolve students in enage students in enage students in opportunities for students to apply communication and collaboration tools for developing global awareness by indexts avareness of various cultures.interactions resources students to apply communication students i vareness to interact withinteraction provide interaction and collaboration students i vareness to interact withprovide information interaction poprotunities to develop cultural understanding and global awareness to interact withprovide information interaction provide informationprovide information informationprovide inf		developmental		the diverse needs of	use of assistive				
Image: structure in the information of the information of the information of the information of the informationImage: structure information of the information of the information of the informationImage: structure information of the information o		levels.		learners.	the diverse needs of				
c. promote and model digital etiquette and interactions related to the use of interactions related to the use of informationmodel correct and careful use of digital resources and inform learners of onsequences of misuse.promote proper use of digital technology, and issues, digital issues, digital onsequences of appropriate uses of etennology.engage learners in resources and inform insuse.technology and informationresponsible use of technology.misuse.resources and insuse.resources and the uses.technology and informationresponsible use of technology.misuse.resources and misuse.misuse.resources and the uses.digital tools and responsible use of technology.responsible use of technology.misuse.misuse.misuse.digital tools and resources.responsible use of unappropriate uses of digital tools and resources.misuse in a global misuse in a global misuse.d. develop and model cultural understanding and global awareness colleagues anddemonstrate the use of communication students' awareness technology resourcesinvolve students in poportinities to apportinities					students.				
model digital etiquette and interactions can interactions related to the use of interactions related to the use of interactions related to the use of informationetiquette and identify resources and inform learners of misuse.of digital technology, and issues, digitalresearching the responsiblitiesinteractions related to the use of informationsupport student learning and responsible use of technology.consequences of misuse.issues, digital issues, digitalresources and the resources and the etiquette, and real- informationresources and the resources and the digital tools and misuse.consequences of appropriate and inappropriate uses of digital tools and resources.misuse in a global information society.d. develop and understanding and global awareness of collaboration understanding and engaging with collagues anddemonstrate the use of communication and collaboration students' awareness technology resourcesprovide poprotunites for opportunites for opportunities for students to apply develop cultural develop cultural of students' awareness technology resourcesinvolve students in opportunities for opportunities for opportunities for opportunities for students to apply develop cultural develop culturalescarch and opportunities for students to apply develop cultural develop cultural of various cultures.interaction students for opportunities for students to apply develop cultural develop cultural develop cultural dos for developing students' awareness of various cultures.interaction students opply technology resources technology resources d	c. promote and	demonstrate digital	model correct and	promote proper use	engage learners in				
curducter and responsible socialindew social interactions can interactions relatedindex social interactions can consequences of misuse.iterinology, and issues, digitalresponsible use of digital tools and technology and informationresponsible use of responsible use of technology.responsible use of informationresponsible use of technology.responsible use of informationresponsible use of technology.responsible use of informationresponsible use of technology.responsible use of informationresponsible use of informationresponsible use of technology.responsible use of informationresponsible use of information society.informationtechnology.Fachal and inappropriate uses of digital tools and resources.misuse in a global information society.informationtechnology.Fachal and informationwork collaboratively with students in the development of policies and procedures for responsible use of technology and information resources.misuse in a global information society.d. develop and model cultural global awareness by collaborationdemonstrate the use opportunites for students to applyinvolve students in opportunities to opportunities to opportunities to opportunities to understanding and global awareness by tools for developingprovide communication students' awareness technology resourcesindown and communication understanding and of various cultures.interaction communication students to applyindown and collaboratived. develop and information resourc	model digital	etiquette and identify	careful use of digital	of digital	researching the				
responsible solutioninteractions call of the use of is support studentreactions of an issue, of appropriate and inappropriate and inappropriate and inappropriate and inappropriate and inappropriate and informationreactions of appropriate and information appropriate and information appropriate and informationreactions of appropriate and information appropriate and informationreactions of appropriate and information appropriate and information appropriate and informationreactions of appropriate and information society.d. develop and model cultural understanding and global awareness by engaging with colleagues anddemonstrate the use of communication and collaboration students' awareness of various cultures.provide provide opportunities for students to apply communications technology resourcesinvolve students in opportunities to appropriate and information resources.engage students in opportunities to appropriate and information resources.d. develop and model cultural understanding and engaging with collagues anddemonstrate the use of various cultures.provide provide opportunities for students to apply communications technology resources to interact withinvolve students in opportunities to appropriate and information research and publication with esearch and students' awareness to interact withinvolve students in appropriate appropriate appropriate apply information research and appropriate apply communications technology resources to interact withinvolve students in appropriate apply communications technology resources to interact withinvolve students in<	responsible social	interactions can	learners of	discuss ethical	related to the use of				
to the use of technology and informationlearning and responsible use of technology.misuse.etiquette, and real- world examples of appropriate and inappropriate uses of digital tools and resources.resources and the consequences of misuse in a global information society. Work collaboratively with students in the development of policies and procedures for responsible use of technology and information society.d. develop and model cultural understanding and global awareness by engaging with colleagues anddemonstrate the use of communication and collaboration tools for developing students' awareness of various cultures.provide provide opportunities for students to apply communications technology resources to interact withinvolve students in opportunities to develop cultural understanding and global awareness of various cultures.provide provide opportunities for students to apply communications technology resources to interact withinvolve students in opportunities to global awareness to interact withengaging with communications technology resources to interact withpublication with students and experts from other countries	interactions related	support student	consequences of	issues, digital	digital tools and				
technology and informationresponsible use of technology.world examples of appropriate and inappropriate uses of digital tools and resources.consequences of appropriate uses of digital tools and resources.Work collaboratively with students in the development of policies and procedures for responsible use of technology and onformationWork collaboratively with students in the development of policies and procedures for responsible use of technology and information procedures for responsible use of technology and information resources.d. develop and model cultural understanding and global awareness by engaging with collaboration engaging with collaboration engaging with collaborationdemonstrate the use opportunities for students to apply communicationsinvolve students in opportunities to apportunities to opportunities to opportunities to students to apply tools for developing students' awareness of various cultures.interact withinteract withinteract with	to the use of	learning and	misuse.	etiquette, and real-	resources and the				
informationtechnology.appropriate and inappropriate uses of digital tools and resources.information society. Work collaboratively with students in the development of policies and procedures for responsible use of technology and information resources.d. develop and model cultural understanding and global awareness by engaging with colleagues anddemonstrate the use provideprovide poprunities for students to apply communications students to apply tools for developing of various cultures.provide poprunities for students to apply tools for developing of various cultures.involve students in opportunities for students to apply tools for developing tools for developing tools for developinginvolve students and students to apply tools for developing tools for developing tools for developinginvolve students and students to apply tools for developing tools for developing tools for developing tools for developing tools for developing tools for developinginteract withinteract withpublication with students and experts through digital-age	technology and	responsible use of		world examples of	consequences of				
d. develop and model cultural understanding and global awareness by engaging with colleagues anddemonstrate the use of communication students' awareness to ols for developing of various cultures.provide communication students to apply to interact withinterpropriate uses of digital tools and resources.Work collaboratively with students in the development of policies and procedures for responsible use of technology and information resources.d. develop and model cultural understanding and engaging with collaborationdemonstrate the use of communication students to apply communications technology resources to interact withinvolve students in opportunities to understanding and global awareness students' awareness to ols for developing students' awareness to interact withinvolve students in opportunities to understanding and global awareness students' awareness to interact withinvolve students in opportunities to understanding and global awarenessengage students in technology resources global awarenessengage students and experts through digital-age	information	technology.		appropriate and	misuse in a global				
d. develop and model cultural understanding and global awareness by engaging with colleagues anddemonstrate the use of communication tools for developing students' awareness of various cultures.provide oportunities for students to apply communications technology resources to interact withinteract withinteract withadditional dependence develop and model cultural global awareness by engaging with colleagues anddemonstrate the use of communication and collaboration tools for developing students' awareness of various cultures.provide oportunities for students to apply communications technology resources to interact withinvolve students in opportunities to develop cultural understanding and global awareness to on the counters.engage students in opportunities to students to apply communications technology resources to interact withinvolve students in opportunities to global awareness through digital-ageengage students in students and experts from other countries				digital tools and	Work collaboratively				
d. develop and model cultural global awareness by engaging with colleagues anddemonstrate the use of communication tools for developing students' awareness of various cultures.provide provide provide opportunities for students to apply communications technology resources tools for developing students' awareness of various cultures.provide provide provide opportunities for students to apply communications technology resources tools for developing of various cultures.provide provide provide opportunities for students to apply communications technology resources to interact withinvolve students in opportunities to develop cultural understanding and global awareness to interact withprovide provide provide opportunities to provide tools for developing tools for developing students' awareness of various cultures.provide provide provide tools for developing tools fo				resources.	with students in the				
Image: students in galaxy and collaboration galobal awareness by colleagues andprovidepolicies andImage: students in galaxy and collaboration galobal awareness by colleagues anddemonstrate the use of communication and collaboration and col					development of				
d. develop and model cultural global awareness by engaging with colleagues anddemonstrate the use of communicationprovide provide provideinvolve students in opportunities for students to apply communicationsinvolve students in opportunities to understanding and students' awareness of various cultures.provide provide communicationsinvolve students in opportunities for students to apply communicationsprovide opportunities to understanding and students' awareness of various cultures.provide provide communicationsinvolve students in opportunities to understanding and global awareness of various cultures.provide provide communicationsinvolve students in opportunities to understanding and global awareness global awarenessengage students in publication with students and experts from other countries					policies and				
d. develop and model cultural global awareness by engaging with colleagues anddemonstrate the use provideprovide provideinvolve students in opportunities for students to apply communications technology resourcesengage students in collaborationengage students in resourcesd. develop and model cultural global awareness by colleagues anddemonstrate the use of communication students in communicationsprovide opportunities for students to apply communicationsinvolve students in opportunities to develop cultural understanding and global awarenessengage students in collaboration					procedures for				
d. develop and model cultural understanding and global awareness by colleagues anddemonstrate the use of communication and collaborationprovide opportunities for students to apply communications technology resources to interact withinformation resources.d. develop and model cultural understanding and global awareness by colleagues anddemonstrate the use of communication and collaborationprovide opportunities for students to apply communicationsinvolve students in opportunities to develop cultural understanding and global awarenessengage students in opportunities for students to apply to ols for developing students' awareness of various cultures.provide provide to interact withinvolve students in opportunities to understanding and global awareness through digital-ageengage students in publication with students and experts from other countries					technology and				
Image: constraint of communicationprovideinvolve students inresources.d. develop and model culturaldemonstrate the use of communicationprovideinvolve students inengage students inunderstanding and global awareness by engaging with colleagues andand collaborationstudents to apply communicationsdevelop cultural understanding and students' awarenessresearch and publication with students' awarenesscollagues andof various cultures.to interact withglobal awarenessstudents and experts through digital-age					information				
d. develop and model culturaldemonstrate the use of communicationprovide opportunities for opportunities forinvolve students in opportunities to develop culturalengage students in collaborativeunderstanding and global awareness by engaging with colleagues andand collaborationstudents to apply communicationsdevelop cultural understanding and global awarenessresearch and publication withengaging with colleagues andstudents' awareness of various cultures.technology resources to interact withglobal awareness through digital-agestudents and experts from other countries					resources.				
Inoder culturalof communicationopportunities foropportunities tocollaborativeunderstanding and global awareness by engaging withand collaborationstudents to apply collaborationdevelop cultural understanding and global awarenessresearch and publication with students' awarenesscollagues andof various cultures.to interact withglobal awarenessstudents and experts from other countries	d. develop and	demonstrate the use	provide	involve students in	engage students in				
global awareness by engaging with colleagues andtools for developing students' awareness of various cultures.communications technology resources to interact withunderstanding and global awareness through digital-agepublication with students and experts from other countries	understanding and	and collaboration	students to apply	develop cultural	research and				
engaging with colleagues and students' awareness of various cultures. technology resources to interact with global awareness through digital-age students and experts from other countries	global awareness by	tools for developing	communications	understanding and	publication with				
colleagues and of various cultures. to interact with through digital-age from other countries	engaging with	students' awareness	technology resources	global awareness	students and experts				
	colleagues and	of various cultures.	to interact with	through digital-age	from other countries				
cultures using from other collaboration cultural	sudents of other		from other	collaboration	cultural				

digital-age communication and collaboration tools		communities and cultures.	projects with students from other countries	understanding.			
5 Engage in Profe	ssional Growth and	Leadership	countries.				
Teachers continuously improve their professional practice, modeling lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources. Teachers:							
Performance Indicator	Beginning	Developing	Proficient	Transformative			
a. participate in local and global learning communities to explore creative applications of technology to improve student learning.	explore and discuss attributes of local and global learning communities where teachers can explore creative applications of technology that improve student learning.	develop plans for using local or global learning communities to explore creative applications of technology that improve student learning.	actively participate in local and global learning communities to exchange and implement ideas and methods related to creative applications of technology to improve student learning.	help develop and sustain local and global learning communities to exchange ideas and methods related to creative applications of technology and to enhance the effective use of technology for learning.			
b. exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing leadership and technology skills of others.	identify and evaluate local and global visions of technology infusion, ways of participating in shared decision making and community building, and strategies for developing the technology skills of others.	demonstrate leadership for implementation of the school/district vision for technology infusion by applying it in their own learning environment.	adopt a shared vision of technology infusion appropriate for the educational environment, work cooperatively with others in decision making, and contribute to the development of leadership and technology skills in others.	participate in developing a vision for technology infusion in the school and the wider community, advocate for its adoption, help facilitate shared decision making, and promote the development of leadership and technology skills in others.			
c. evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning.	investigate and reflect on research and professional practice for using digital tools and resources to support student learning needs.	develop technology- based learning plans that integrate current research and promising professional practices for using digital tools and resources in support of student learning.	regularly evaluate and reflect on current research and apply promising practices for using existing and emerging tools and resources in support of student learning.	contribute to the effective use of technology to enhance teaching and learning by conducting action research, evaluating the outcomes, and sharing the results locally and globally.			
d. contribute to the effectiveness, vitality, and self- renewal of the teaching profession and of their school and community	identify strategies for contributing to the effectiveness, vitality, and self- renewal of the teaching profession and the school community	demonstrate and discuss with colleagues the effective use digital resources and related teaching and learning strategies to enhance student learning and the teaching profession.	actively contribute to the effectiveness, vitality, and self- renewal of the teaching profession by sharing promising practices for using technology to improve student learning with others in the school, profession, and community.	demonstrate, discuss, and present to school leaders, and the larger community the impact on learning of the effective use of digital resources and the ongoing renewal of professional practice.			